1981 Annual Report

inistry of Agriculture and Food

Province of British Columbia

RL B.C.

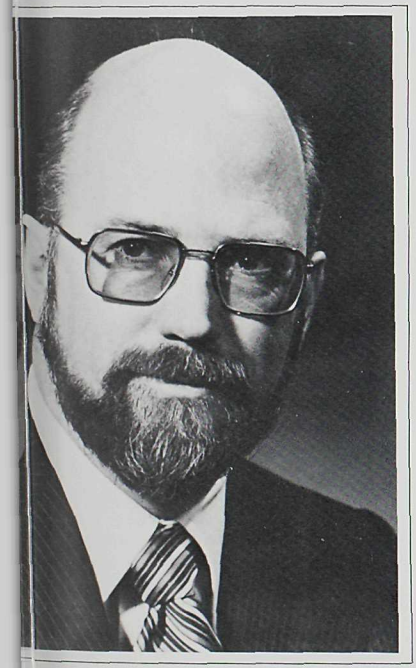
1982

British Columbia Cataloguing in Publication Data

British Columbia. Ministry of Agriculture and Food.
Annual report.—1980—

Cover title.
Continues: British Columbia. Ministry of Agriculture.
Annual report. ISSN 0702-9993
ISSN 0710-8664 = Annual report—Ministry of Agriculture and Food (Victoria)

1. British Columbia. Ministry of Agriculture and Food. 2. Agriculture—British Columbia—Periodicals.
S141.B76 354.7110682'33



To Colonel the Honourable
HENRY P. BELL-IRVING, D.S.O., O.B.E., E.D.
Lieutenant-Governor of the
Province of British Columbia

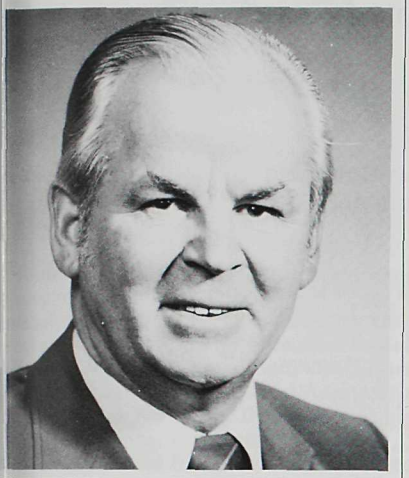
MAY IT PLEASE YOUR HONOUR

I have the honour to submit for your consideration the Annual Report of the Ministry of Agriculture and Food for the year 1981.

James J. Hewitt
Minister of Agriculture and Food

Table of Contents

	Page
Report of the Deputy Minister of Agriculture and Food	5
Organization Chart	6
Ministry Executive and Directors 1981	7
Agriculture Review	9
Policy Development and Planning	12
Executive Officer	13
Finance and Administration Services	14
Information Services Branch	15
Assistant Deputy Minister Field Operations	
Regional Extension Services	20
Peace River	20
Central	22
Thompson-Cariboo	24
Okanagan-Kootenay	26
South Coastal	28
Specialist and Regulatory Services	
Crop Protection	34
Dairy	37
D.A.T.E.	39
Engineering	40
Soils	41
Veterinary	44
Youth Development	46
Production Services	
Apiculture	50
Farmland Resources	51
Field Crops	53
Horticulture	56
Livestock	60
Poultry	62
Assistant Deputy Minister Economics and Marketing	
Marketing	66
Economics	70
Assistant Deputy Minister Financial Assistance Programs	
Agriculture and Rural Development	78
Agricultural Credit	80
Crop Insurance	82
Farm Income Insurance	84
Farm Products Finance	85
Property Management	87
Legislation Administered by Ministry	89
Ministry Office Locations	91



Report of the Deputy Minister

The Honourable James J. Hewitt,
Minister of Agriculture and Food

Sir

I am pleased to present the 1981 annual report of the British Columbia Ministry of Agriculture and Food. This report summarizes activities of the ministry for the 12 months ending December 31, 1981.

In many respects, 1981 can be described as a year of challenge. All sectors of the agricultural community faced these challenges as a result of simply increasing production costs in the face of often erratic or decreasing commodity prices and unusually adverse weather conditions early in the growing season. Despite good yields in some sectors, the agricultural economy mirrored the general economic climate across the country which saw record high interest rates and the effects of inflation erode to some extent the advancement of the province's food production system. Nevertheless, the provincial agriculture and food industry continued to progress as a result of producer perseverance and government commitment to the goal of full utilization of our agricultural resources.

Addressing the adversities required ingenuity and innovative programming by your ministry staff. In conjunction with the agricultural community, staff implemented these programs to minimize the negative economic effects and maximize the positive conditions by exploiting those commodities and markets in which we have a comparative advantage. To this end, the ministry made good progress in developing new programs to meet the management and financial needs of B.C. farmers—several second generation commodity plans were added to the farm income insurance program, new equipment at several of the ministry's laboratories enabled farmers to make use of advanced technology in maintaining milk quality and determining soil deficiencies, a swine herd health program was formulated and implemented for hog producers, and an extensive weed control and public relations program was mounted to minimize the spread of harmful plants such as knapweed—to mention only a few of the many ministry accomplishments of note. 1981 also marked the first full year of regional programming and administration; although some refining will continue to be needed, regional planning and program delivery worked well in dealing with the unique agricultural character and needs of farmers in each region.

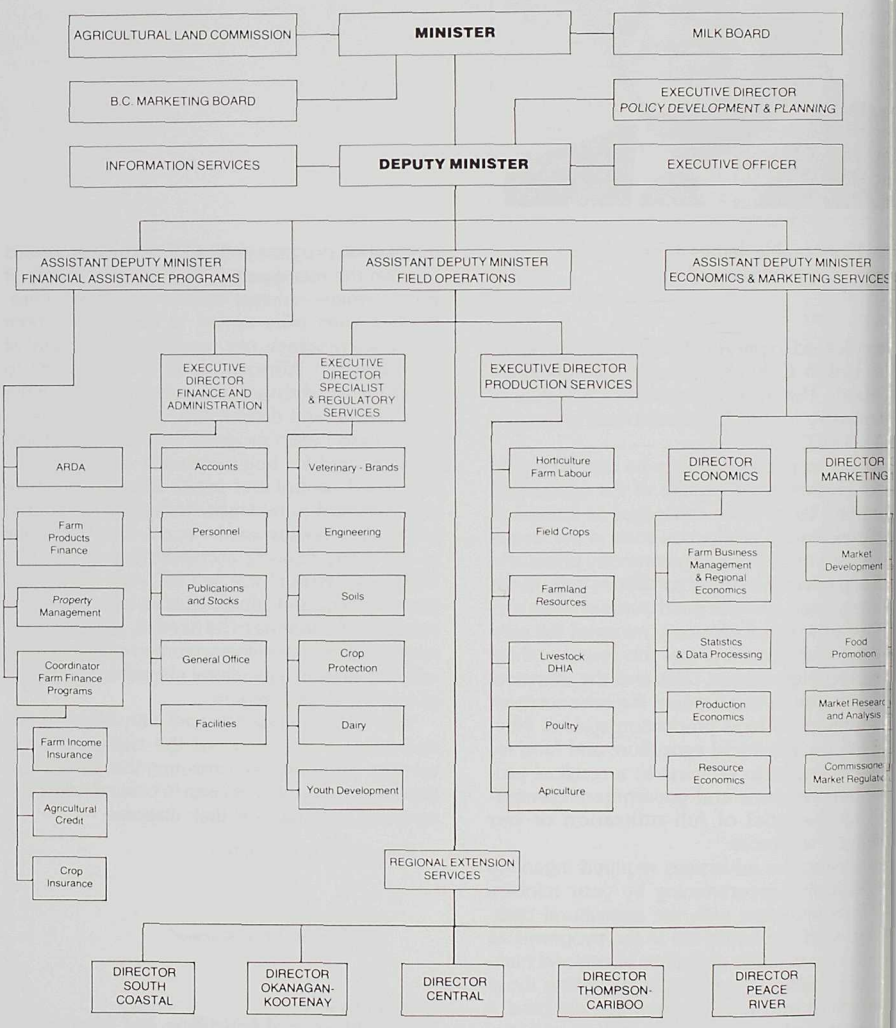
Your staff continued to work with diligence and dedication in carrying out the wide variety of ministry programs thus ensuring that British Columbia farmers had the latest in cultural and management techniques at their disposal.

Respectfully submitted,

S. B. Peterson,
Deputy Minister of Agriculture and Food

Organization Chart

Province of British Columbia
Ministry of Agriculture and Food



Ministry Executive and Directors

1981

Minister	**Hon. James J. Hewitt**
Deputy Minister	**S. B. Peterson**
Assistant Deputy Minister Economics and Marketing	**Dr. G. A. MacEachern**
Assistant Deputy Minister Financial Assistance Programs	**I. C. Carne**
Assistant Deputy Minister Field Operations	**E. M. King**
Executive Director Finance and Administration	**J. Newman**
Executive Director Policy Development and Planning	**D. M. Matviw**
Executive Director Production Services	**M. G. Oswell**
Executive Director Specialist and Regulatory Services	**R. J. Miller**
Regional Director Central	R. N. Kohlert
Regional Director Okanagan-Kootenay	B. A. Hodge
Regional Director Peace River	B. E. Baehr
Regional Director Thompson-Cariboo	A. N. Isfeld
Regional Director South Coastal	W. E. A. Wickens
Agriculture and Rural Development	J. R. Steele
Agricultural Credit	M. K. Thompson
Aquaculture	J. Corner
Crop Insurance	P. R. Humphry-Baker
Crop Protection	Dr. H. J. O'Reilly (retired June/81) J. C. Arrand (appointed July/81)
Dairy	D. J. Blair
Economics	B. A. Hackett (until Oct./81)
Engineering	T. A. Windt
Executive Officer	P. H. Pettyfer
Farm Finance Programs (Coordinator)	J. E. Hall (retired June/81) B. A. Hackett (appointed Oct./81)
Farm Income Insurance	S. Thomson (resigned Oct./81)
Farm Products Finance	J. B. Phillips
Farmland Resources	J. D. Anderson
Field Crops	J. V. Zacharias
Horticulture	A. C. Carter
Information Services	R. A. Sera
Livestock	J. A. Pelter
Marketing	D. A. Rugg
Poultry	Dr. H. C. Carlson
Property Management	B. R. Richardson
Soils	R. S. Bertrand
Veterinary	Dr. R. J. Avery
Youth Development	D. E. Freed

Distribution of Farm Cash Receipts, 1981

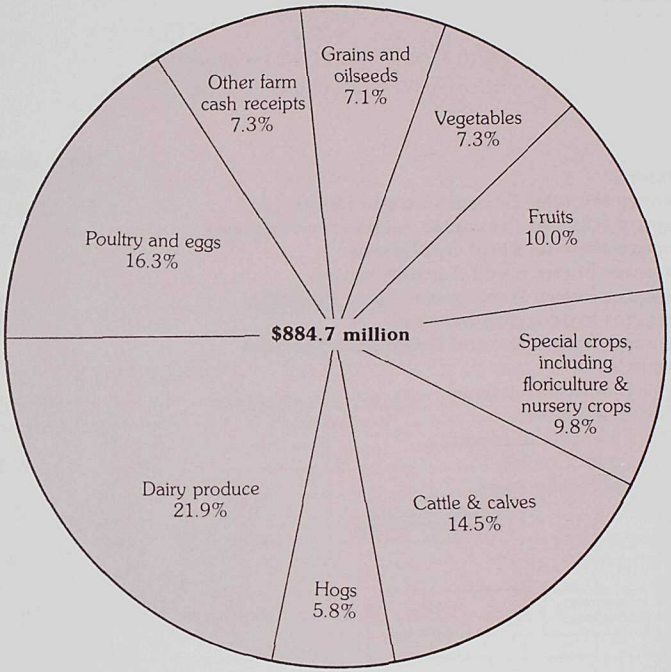


Table I Distribution of Farm Cash Receipts, 1981—British Columbia

	$ Million	Per Cent
Grain and oilseeds	63.1	7.1
Vegetables	64.3	7.3
Fruits	88.9	10.0
Specialty crops, including floriculture and nursery crops	86.2	9.8
Cattle and calves	128.3	14.5
Hogs	50.9	5.8
Dairy products	194.1	21.9
Poultry and eggs	144.2	16.3
Other farm cash receipts	64.7	7.3
TOTAL FARM CASH RECEIPTS	884.7	100.0

Source: Statistics Canada, January 1982

1981 Agricultural Review

Farm Cash Receipts (Tables I and II)

British Columbia's farmers continued to produce and market an increasing volume of farm products in 1981. Farm cash receipts rose to a new high level of $884.7 million, 18.6 per cent above that recorded in 1980.

Cash receipts from field crops rose to $63.1 million, a 20 per cent increase from the year before. Under the stimulus of rising prices, significant expansion occurred in the acreage and output of grains that more than offset reduced plantings of oilseed caused by a depressed price outlook for that commodity.

Dry late summer and fall weather conditions in the Peace Region, which reduced yields of later crops, resulted in improvements in the quality of grain marketed. Cash receipts from vegetables increased by 13.7 per cent, despite declines in production caused by extensive weather damage in the Lower Mainland. Higher prices were primarily responsible for the increased receipts. Potato prices in particular recovered significantly from their levels of the previous year. Fruit sales increased by 4.7 per cent, reflecting some increase in production, especially of berry crops, while receipts from greenhouse and nursery crops increased by 14.3 per cent, due mainly to higher prices.

Sales of livestock and livestock products, which account for more than half of all the farm cash receipts, grew to an estimated $542.5 million, an increase of 16 per cent from the 1980 level. As in 1980, cash receipts from hog sales rose substantially—by 66.3 per cent—to $50.9 million, due primarily to increased marketings, as well as to firmer prices stemming from buoyant demand by consumers faced with continuing high beef prices.

Cash receipts from poultry also improved markedly—by 24.4 per cent—due to higher prices to producers and the shifting of consumer demand. Cash receipts from dairy products improved by 11.5 per cent to reach an estimated $114.1 million, largely because of increases in prices and to some extent an increase in production in both the fluid and industrial milk sectors.

Farm Operating Expenses (Table III)

The cost of farming continued to escalate in 1981. When compared with 1980, aggregate expenses rose at an even more rapid rate than the consumer price index, reflecting increases in the price and the volume of purchased inputs.

Whereas the Vancouver CPI increased by 14.0 per cent, farm production expenses climbed by 27 per cent to a total of $678.7 million. Significant increases were noted in farm rent—up by 12.8 per cent; fertilizer and lime—up by 18.3 per cent; electricity and telephone—up by 21.3 per cent; feed—up by 23.7 per cent and interest on farm debt—up by 60.5 per cent.

The major factors in the increase in input costs were energy and financing costs. The ministry's Partial Interest Reimbursement Program afforded farmers a measure of relief in servicing farm debt. Operating under changed criteria in 1981, the program paid $12.4 million in interest reimbursement benefits to farmers on 1980 loans.

Farmland and Number of Farms

The area of cultivated farmland in British Columbia increased by 8,100 hectares in 1981, to a total of 830,000 hectares. The total number of agricultural holdings in 1981 remained stable at 20,800. The trend of increasing farm numbers in the province was largely constrained by record high interest rates which pushed up threshold costs to new farmers.

Food Processing (Table IV)

As of December 1981, there were 590 firms processing food and beverages in British Columbia, compared with 609 firms in the year before. High interest rates and financial difficulties accounted for the closure of several establishments during the year. The estimated value of agricultural commodities marketed by food and beverage manufacturing firms in the period January to October 1981 reached a new high of $2.159 million—up by 14 per cent over the same period a year earlier.

Retail Food Prices

British Columbia's retail food prices, in nominal terms, rose by 8.4 per cent in 1981. Major increases occurred in the prices of poultry—up by 12.1 per cent; dairy products—up by 12.2 per cent and fruit and vegetables—up by 9.5 per cent.

In real terms, however, British Columbia's retail food prices declined by 4.9 per cent. The decline was even greater in the real price of food-at-home consumption which dropped by 5.7 per cent in British Columbia.

Table II British Columbia Farm Cash Receipts, 1980–1981

	(Thousands of Dollars)		Per Cent Change
	1980	Preliminary 1981	
Wheat	13,000	28,100	+ 116.
Oats	1,900	2,100	+ 10.
Barley	17,300	19,900	+ 15.
Crop insurance and cash advance	2,700	3,600	+ 33.
Canola	17,700	8,900	− 49.
Potatoes	10,000	14,400	+ 44.
Fruits	84,900	88,900	+ 4.
Vegetables	43,900	49,900	+ 13.
Horticulture and nursery	40,700	46,500	+ 14.
Other crops	30,600	39,700	+ 29.
TOTAL CROPS	262,700	302,000	+ 15.
Cattle and calves	122,100	128,300	+ 5.
Hogs	30,600	50,900	+ 66.
Sheep and lambs	1,900	2,000	+ 5.
Dairy products	174,100	194,100	+ 11.
Poultry	66,300	82,500	+ 24.
Eggs	53,700	61,700	+ 14.
Honey	3,900	7,500	+ 92.
Other livestock and products	14,800	15,600	+ 5.
TOTAL LIVESTOCK AND PRODUCTS	467,400	542,500	+ 16.
Farm woodlot sales	2,700	2,300	− 14.
Farm income insurance	5,200	26,200	+ 403.
Dairy supplement payments	7,900	8,500	+ 7.
Deficiency payments	200	2,600	+ 1,200.
Miscellaneous payments	—	500*	—
TOTAL OTHER RECEIPTS	16,000	40,100	+ 150.
TOTAL FARM CASH RECEIPTS	746,100	884,700	+ 18.

*Payments on grain embargo.
Source: Statistics Canada, January 1982.
Note: Totals may not add due to rounding.

ıble III British Columbia Farm Operating Expenses and Depreciation Charges

	(Thousands of Dollars)		Per Cent Change
	1980	Preliminary 1981	
Taxes	11,000	11,800	+ 7.3
Gross farm rent	12,500	14,100	+ 12.8
Wages to farm labour	87,300	93,400	+ 7.0
Interest on indebtedness	116,400	186,800*	+ 60.5
Total machinery expenses	66,100	84,700	+ 28.1
Fertilizer and lime	21,900	25,900	+ 18.3
Other crop expenses	27,900	30,200	+ 8.2
Feed	109,500	135,400	+ 23.7
Other livestock expenses	19,700	21,200	+ 7.6
Repairs to buildings	9,800	10,600	+ 8.2
Electricity and telephone	13,600	16,500	+ 21.3
Miscellaneous	38,800	48,100	+ 24.0
TOTAL OPERATING EXPENSES	534,500	678,700	+ 27.0
Depreciation on buildings	25,300	24,800	− 2.0
Depreciation on machinery	53,900	60,700	+ 12.6
TOTAL OPERATING EXPENSES AND DEPRECIATION CHARGES	613,700	764,200	+ 24.5

Source: Statistics Canada, January 1982.
*Net of an adjustment of $12.4 million for Provincial interest reimbursement.

ıble IV Number of Food and Beverage Industries—British Columbia, 1981

aughtering and meat processors	97	Biscuit and confectionary manufacturers	19
oultry processors	15	Nuts	9
gg processors	20	Bakeries	35
sh products industry	93	Sugar and honey processors	18
uit and vegetable canners, preservers and		Miscellaneous food processors	55
frozen fruit and vegetable processors	72	Soft drink manufacturers	23
airy products industry	38	Distilleries	7
our and breakfast cereal industry	16	Breweries	8
ed industry	56	Wineries	9
		TOTAL	590

Source: Marketing Branch, Ministry of Agriculture and Food, January 1982.

Policy Development and Planning

Policy Development and Planning Division is responsible, within the ministry, for the development, analysis and evaluation of government policies and programs, and developing strategies for the agriculture and food industry in the province.

The major emphasis of Policy Development and Planning during 1981 was directed toward long-term planning and the formulation of development strategy. The stimulus for this activity came from the need to re-evaluate the opportunities and constraints facing the B.C. agriculture and food sector in the coming decade, and to review the ministry's policies and programs in order to ensure that these reflect the challenges.

Future Trends

Various market factors point to an improvement in the competitiveness of agriculture in the 1980's. At the international level, a rapid increase in consumer demand, resulting from rising world populations and per capita incomes, will be a major factor. At the local level, increases in provincial population, rising incomes, increasing tourism and continued industrial growth, are factors favouring growth.

Potential for an expansion of output exists in livestock, grain, oilseeds, vegetables, soft fruits and nursery crops. Lesser growth can be expected in dairy, poultry and tree fruits. Specific opportunities for expanded production of frozen, speciality and convenience foods are also increasing.

The ability of farmers and processors to intensify production will be hampered by large financial outlays, greater economic instability, a projected greater variability in prices, and land use and environmental constraints.

Development Strategy

A preliminary development strategy was formulated, in which an industry outlook was projected, specific constraints were analyzed, and a strategy—including a set of initial program initiatives—to enhance the position of the agriculture and food sector in the economy, was develc for explicit review by industry representatives the general public. Preliminary work was commenced on developing a conceptual fra work for undertaking sectoral and regional l range strategies.

Project Analysis

The Policy Development and Planning I sion provided analytical support to the minist the regional level. Efforts were initiated to hance the ability of the ministry to support agricultural sector in resolving land allocatio sues. Work was also commenced on analy costs and benefits for various alternative a cultural activities throughout the province.

A major activity arising from the project re function, consisted of the preparation of a 'l paper' entitled *Agricultural Considerations*, the British Columbia Utilities Commission's p lic review of the B.C. Hydro's proposed hy electric project Site 'C' in the Peace River Reg This paper highlighted the impacts of the p posed project on the agricultural sector and cluded a summary of the project's physical pacts, estimates of the potential economic los agriculture, and an indication of the possible m sures to compensate and mitigate project impa

Work was also directed toward helping res problems impacting on the costs of farmin British Columbia. In particular, the division c tinued to be actively involved in evaluat federal feed grain and grain transportation p icies, as well as energy allocation and c servation programs.

Executive Officer

The Executive Officer is responsible for the consolidation of legislative matters within the ministry. In 1981, 55 Orders-in-Council were processed relating to 18 Acts.

The Executive Officer serves as secretary to the British Columbia Agricultural Aid to Developing Countries Advisory Committee which, during 1981, recommended support, in conjunction with sponsorship by 24 charitable organizations, for 62 projects and four disaster operations in 38 countries.

In this, the first year during which World Food Day was commemorated, the Executive Officer was the coordinator for British Columbia, which involved a great deal of organizational work beyond normal activities. The activities on World Food Day, October 16, 1981, featured public events primarily in the Vancouver area. Universities, federal research stations, non-government organizations and schools played key roles in creating public awareness of the event, which was highlighted with visitations by ambassadors of third-world countries.

The Executive Officer is also responsible for the administration of the ministry's policy of financial assistance to agricultural associations. Under this policy, operating grants were made to fair and exhibition associations, to the Provincial Women's Institute, district Farmers' Institutes and others. As superintendent of Farmers' Institutes, he provided liaison services for their members with the ministry, and organized the annual meeting of the Farmers' Institutes Advisory Board.

Additional duties of the Executive Officer included that of secretary at senior management meetings and secretary to the B.C. Agricultural Services Coordinating Committee which, with assistance from its six lead committees, monitored agricultural developments in the province and encouraged the organization of seminars, workshops and research to identify and overcome problems of importance to the agricultural industry.

Under the Agricultural Aid Program, $3,500 was allocated to a corn production project in Peru designed to identify viruses causing disease in corn. Elimination of these diseases will increase corn yields in Peru where over six million people depend on corn as a principal food source.

Finance and Administration

The Finance and Administration Division is responsible for finance, personnel, communications, building occupancy, mail and courier services, publications, vehicles and general administrative support for the ministry. The major branches that comprise the division are: Accounts, Personnel, Publications and Administration.

Accounts

Each of the major services within the ministry is accountable for the expenditures of a portion of the ministry's budget. The budget allocation for the 1981/82 fiscal year is shown in the following table.

Agriculture and Food: Fiscal 1981–82 Budget Estimates

Minister's Office	$ 160,971
Deputy Minister's Office	1,091,714
Finance and Administration	1,736,900
Field Operations	10,809,073
Economics and Marketing Services	1,348,293
Financial Assistance Programs	46,458,103
Information Services	258,097
Milk Board	267,160
Provincial Agricultural Land Commission	1,661,067
ICBC—Senior Citizens' Grant	6,130,000
Building Occupancy Charges	3,840,000
Computer and Consulting Charges	421,450
	74,182,828
Less efficiencies achieved to control government growth	1,025,000
Total	$73,157,828

Personnel

The Personnel Branch provides advisory service and assistance to management and employees on recruitment and selection, orga tion and classification analysis, contract ad istration, staff development and training, occ tional health and safety, employee relations benefits, leave management and manpc planning.

A total of 559 permanent staff, consisting management personnel, 135 Licensed Pr sionals and 366 B.C.G.E.U. members are loc in the ministry's 33 offices and 3 institutional locations throughout the province. App imately 200 auxiliaries and 101 students wer staff during the 81/82 fiscal period to assist ministry programs.

While the ministry staff establishmen mained relatively stable there was a signifi increase in the number of competitions and cl fication reviews as the ministry continued t gionalize its programs. A total of 15 comm coordinator positions were established in the regions to take lead roles in the developme extension programs for the particular comm in the regions.

Staff development and training activities increased in order to maintain highly qua and skilled employees thoughout the minist

General Office and Publications

Administration and Financial Services is fis responsible for the ministry's printing needs maintains close liaison with the ministry's I mation Services Branch in allocating fund printed publications.

The general office responded to requests field offices for all stationery needs, office sup *and office small equipment purchases.* The lications office handled hundreds of requests ing 1981 from the public, schools and go ment agencies for ministry publications relat agricultural and home garden production. A ited supply of federal agricultural publications also kept to supplement requests for inform whenever appropriate.

nformation Services
ranch

The function of the Information Services anch is to act as the ministry's communications n by providing communications expertise to ministry specialists across the province, thus lping them disseminate their experience and owledge to the farm community. The branch o develops public relations programs to create awareness among the rural and urban comnities, of the importance and significance of C.'s agriculture and food industry.

This function is carried out in two major sieres of activity:

- technical information for the farm audience
- public relations programs aimed at both the rural and urban audiences.

Public Relations

A total of 43 news releases were prepared during the 1981 calendar year and sent to more than 1,500 recipients across Canada, most of whom were in British Columbia. A total of 13 joint Federal-Provincial news releases were also prepared to announce funding approval for projects under the ARDSA program—Agriculture and Rural Development Subsidiary Agreement.

Staff prepared agricultural information packages for use in reply to the most commonly asked questions received by the branch. The branch's series of eight Agrifact information bulletins were also being revised at year-end to summarize the

Many ministry publications were printed for commercial producers and home gardeners. All publications are available at ministry offices.

agricultural industry in each of the five administrative regions.

In addition to the branch's normal advertising program, special full-page advertisements were prepared for insertion in certain issues of British Columbia's farm magazine, *Country Life*. The pages highlighted key ministry people or programs in specific areas of the province.

A major public relations campaign was mounted to describe B.C.'s knapweed problem and government efforts to control this prolific weed. Large ads were designed and sent to weekly and daily newspapers in regions having knapweed infestations. A feature article and special photographs of both knapweed species were sent to the same newspapers in support of the ad campaign. A short film on B.C.'s knapweed problem was also completed by branch staff.

Numerous feature articles were prepared or edited by branch staff and sent to newspapers.

Branch staff helped the B.C. Federation of Agriculture with their Agriculture Week promotion, held October 4–10, 1981. Article ideas and photographs depicting the diversity and economic benefits of B.C. agriculture within the provincial economy were sent to Vancouver-area newspapers for special supplements.

Numerous feature articles were prepared or edited by branch staff and sent to newspapers or other agricultural publications in Canada and the United States. These articles dealt with a range of topics such as the ministry's financial assistance programs, knapweed control efforts, the hazards of raw milk consumption and the Oliver Test Orchard.

Several slide-tape and film presentations were prepared for promotional use. A seven-minute film version of the popular slide-tape presentation *Food in Perspective* was prepared and duplicated for distribution to all regional offices and government film libraries.

Work began on a two-year film project to promote the British Columbia tree fruit industry.

A slide-tape presentation entitled *Finding a Balance*, using a two-projector dissolve unit to gain maximum impact was produced. The presentation, later dubbed to video-tape, described the judicious use of chemical and non-chemical methods of pest control in modern agriculture.

Technical Information

A total of 44 ministry publications were prin[t]ed or revised during 1981.

It was decided that the 1982 Product[ion] Guides would be converted to metric only. [Al]though this required significant change to [the] manuscripts, the conversion to metric units [was] made to coincide with the agricultural chem[ical] industry's conversion to metric designations [on] labels of chemical containers.

A revision to the ministry's Guide to Agricul[tural] Services publication was in the late stages of pr[epa]ration at year end and was expected to be av[ail]able in spring 1982 under the new title, A[gri]cultural Services Guide.

The branch coordinates most of the factsh[eets] published by branches throughout the minis[try]. The factsheets, designed primarily for the fa[rm] audience, provide updated information on r[ou]tine techniques in animal or crop production, financ[ial] management and agricultural markets. Ot[her] factsheets relate to product prices and home [gar]dening. A total of 90 factsheets were issued du[ring] the year.

The branch's media production centre at I[nn]owna prepared several film and slide-tape pres[en]tations for use by the ministry specialist staff [in] extension activities. A short film on the ra[nge] seeder equipment, designed and constructed [by] the ministry's Engineering Branch, was co[m]pleted and shown to farmers and agricultural [of]cials interested in range renovation equipment [in] Canada and the U.S.A. Films on wetland [de]velopment, a community pasture in central B[.C.] and identification of milk vetch poisoning in b[eef] cattle were started.

Slide-tape presentations either completed [or] stages of production dealt with: crop insurance, the Agricultural Land Commission, the ARDA program, overwintering of cauliflower, Colwood Farm, pesticide safety, and soil sampling.

Color slides and black and white photographs were shot and processed by staff members. Black and white pictures were used primarily in miniature publications while large quantities of duplicate photos were made to accompany articles [in] newspapers.

Near year-end, detailed planning began for a live television broadcast on British Columbia's Knowledge Network. The one-hour broadcast on the basics of beef cattle management was to be co-hosted by the Information Branch director and the provincial beef cattle specialist at Kamloops. Scheduled for televising on March 27, 198[2]

gnals the beginning of the delivery phase for ver 60 management information packages med at B.C.'s beef industry as proposed by the inistry's Beef Industry Technical Committee.

ieneral

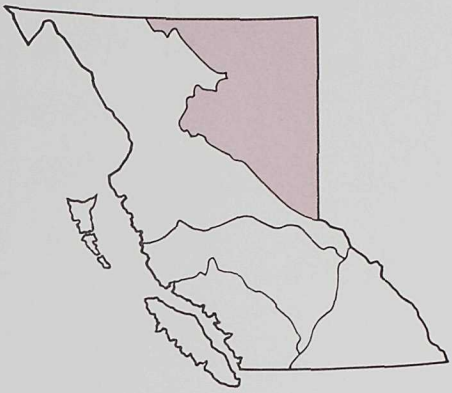
As the ministry's communications and public lations arm, the Information Branch provided ritten material for visiting delegations, and responded to general inquiries from within B.C., Canada and abroad. Information kits were prepared to service this need.

The branch participated in a six-month field trial of the inter-active television system, Telidon, which provides consumer information via a network of video display terminals and screens located in high public access areas. Information of interest to consumers, which was provided included facts on the agricultural regions of the province, seasonal gardening hints and a list of available ministry publications.

Assistant Deputy Minister Field Operations

Regional Extension Services

Peace River Region



The Peace River Region is the major cereal, forage seed, and oilseed producing area of the province. The area in crops increased in 1981, however, the drought conditions that prevailed throughout the growing season reduced overall production by 11 per cent.

In addition, softening world markets reduced the estimated value of the crop by 17 per cent compared to 1980. This combination of factors, along with high interest rates and higher input costs, had a serious effect on the agricultural economy of the region. Livestock producers did not fare well and faced low prices for their products. On the positive side, cereal grain quality was the highest in many years.

A number of specific events and programs related to financial management and marketing were presented to farmers by ministry staff in addition to ongoing programs and activities. Two commodity-oriented committees, field crops and livestock, were established to coordinate ministry extension efforts in the region.

Horticulture

Horticultural activities declined. Some progress appeared to have been made towards the establishment of a major greenhouse operation at Taylor which could utilize waste heat from a nearby refinery.

Livestock

Extension events offered to producers includ
a pasture management seminar, beef and swi
financial management courses, a communi
pasture demonstration project field day, a she
marketing and lamb evaluation workshop, be
breeders field day, two beef buy/sell decisi
seminars, and two mastitis control workshops.

Development work continued on all sev
community pastures in the Peace River region
the value of $380,000 of which $220,000 w
contributed by ARDSA and $16,000 by the Mi
istry of Forests. A total of 156 beef producers h
10,500 head on the pastures during the summ
Drought conditions severely limited fall grazi
Work continued on schedule on the Upper Cac
Coordinated Plan, a $1.75 million range develo
ment program to be completed in 1982.

Specific events and programs related to financial management and marketing were presented t farmers . . .

The distance to market for lambs continued
be the major constraint to development of
sheep industry. If returns are to be maximiz
large numbers of uniform quality lambs are
quired for shipping at regular intervals to
packers. However, the size and diversity of
industry has frustrated efforts of producers to
together and improve their marketing options

Milk production remained the same as in 19
but fluid milk sales dropped by nine per ce
largely due to the drop in population. This ha
serious effect on a few of the newer dairym
with insufficient quotas.

The swine industry appears to be strength
ing under the stabilizing effect of the farm inco
insurance program. Ministry staff hope to addr
other problems including facilities, nutrition a
herd health.

Special Extension Activities

Radio tapes on a variety of topics were prepared three times per week for airing on radio stations in Dawson Creek, Fort St. John and Chetwynd.

In 1981 a new type of seminar was successfully introduced by staff members. More than 100 farmers attended "Managing Your Farm in the 80s" which featured speakers from across western Canada. Topics included foreign ownership, farm computers, banking, and coping with stress.

The dugout filling pump rental program was active again during the year, largely due to the extreme drought; a total of 26 farmers made use of the equipment. Extension staff were assisted by the Engineering Branch in operating the program.

Extension staff became more involved in inter-agency activities in 1981 . . .

Efforts were renewed to encourage the use of lime on Peace River area soils. Soil sample results with a low pH over the last 10 years were plotted on a map to show the extent of the problem, and an incentive program proposal was prepared.

Surface rights continue to be of major concern. A seminar was held and an inter-ministry referral system was initiated for exploration permits.

Under the leadership of the 4-H specialist, the long decline in 4-H enrolment was reversed. There are now 346 members in 28 clubs.

Extension staff became more involved in inter-agency activities in 1981 including resource planning, problem wildlife management, weed control, and inter-ministry approvals on a variety of land-use applications. Although these activities are not related to extension directly, they are essential in ensuring that future options for agriculture are maintained.

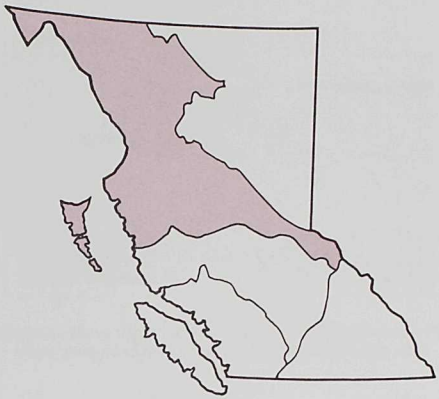
The Peace River Region is the province's major cereal producing area; grain quality in 1981 was the highest in many years.

Field Crops

Much of the extension work in the past year and most of the demonstration plot work was carried out by Field Crops Branch staff, with regional extension services staff also involved. More than 1,000 field visits and office consultations related to field crops were dealt with.

Wheat plantings expanded to 50,000 hectares but barley was still the most popular choice at 102,000 hectares, up from 72,000 in 1980. Canola plantings were further reduced in 1981 to 35,000 hectares compared to 108,000 in 1979. The continuing reduction of bee pasture is of concern to beekeepers who may wish to expand. The drought had its effect on the honey flow, producing an average yield of 46 kg per colony compared to the long-term average of 68 kg.

Central Region



The Central agricultural region of British Columbia contains approximately 17 per cent of the province's land base for agriculture. The region, because of its size and complexity, presents a challenge to the ministry in providing technical support to the farming population scattered from Quesnel to the Queen Charlotte Islands.

In addition to office consultations and meetings, regional personnel made more than 1,500 farm calls during 1981 in response to inquiries from producers. The 4-H program, also involving regional staff, worked actively with 52 clubs and 880 leaders and members.

Land-Use Planning

As in recent years, staff members were called upon during 1981 to spend increasingly more time representing agriculture in resource planning activities with other ministries. Indications are strong that this non-extension activity will increase markedly in proportion to increased demands on the land base. About 60,000 hectares will be added to the agricultural land base in the Prince George area as a result of inter-agency planning of resource use—an example of the importance of a strong agricultural voice in resource planning.

Field Crops

Staff worked with farmers in the Vanderhoof area on cereal demonstration plots to study the effects of factors such as seeding date, varietie fertilizers and seed-bed preparation.

Staff members, in conjunction with the B.C Federation of Agriculture, were involved in a soi crop-fertilizer correlation study which was de signed to develop new fertilizer recommendatior for the Cariboo-Central Interior area.

A field day attended by 125 farmers was organized . . . resulting in many farmers buying the recommended seed varieties.

In cooperation with federal officials and th Richardson Seed Company, staff worked on seed evaluation project at Engen which was de signed to evaluate five forage and six seed tria for their suitability in the Vanderhoof area. A fiel day attended by 125 farmers was organized i conjunction with the trials resulting in many farm ers buying the recommended seed varieties.

Livestock

District agriculturists and a ministry dairy spe cialist conducted a program to increase produce awareness of unchecked bovine mastitis in the herds; producer response was very positive.

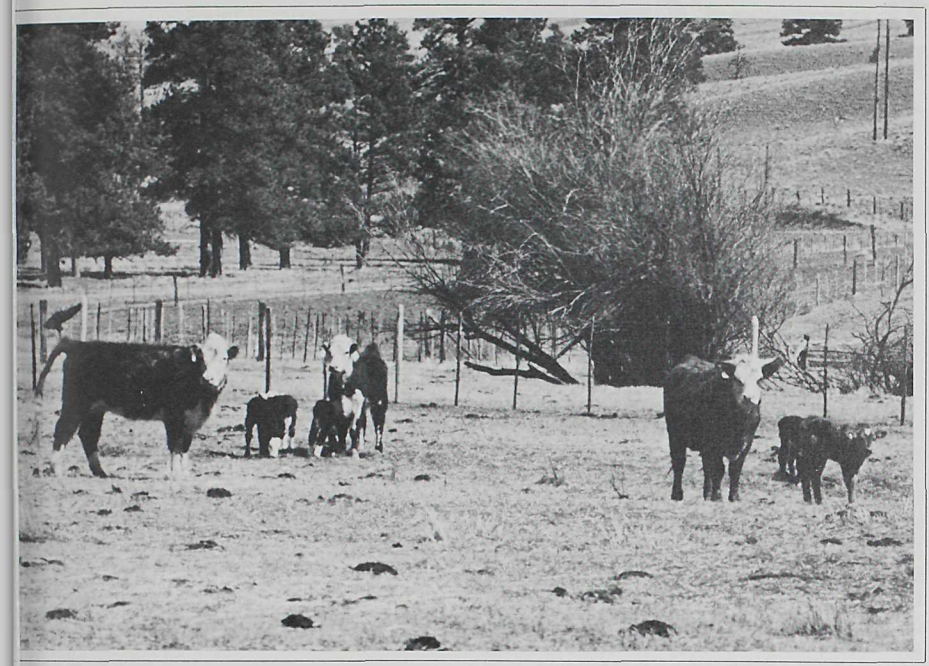
Bovaid tags containing certain chemicals wer given to farmers to observe effects when the tag were placed on livestock. The tags proved to b useful in controlling flies on livestock and ap peared to help in the control of pink eye.

Horticulture

Expansion of the horticultural industry ha continued in the Smithers and Prince Georg districts. During 1981, 100 hectares were seede to 20 different varieties of vegetables.

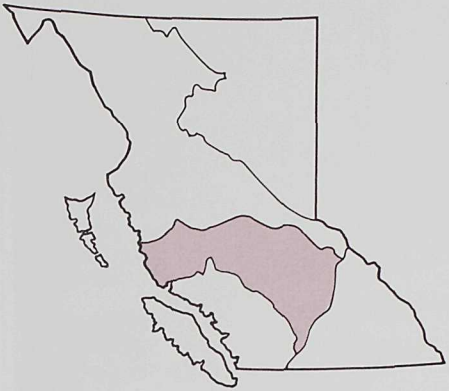
Public Awareness

Staff prepared and entered a ministry display a local fairs and exhibitions. The display, with th theme "Agriculture Produces", featured loca fruits and vegetables as well as information on th area's agricultural significance.



Staff designed numerous extension programs aimed at the region's predominant livestock industry.

Thompson-Cariboo Region



The Thompson-Cariboo region, with offices at Kamloops and Williams Lake, encompasses a large portion of the province's open rangeland. Beef cattle enterprises comprise about 90 per cent of the region's agricultural activity and represent about 40 per cent (1976 census) of the provincial beef herd. Alfalfa hay farming, corn production and fruit and vegetable enterprises, with the benefit of irrigation, contribute to the area's agriculture industry.

Field Crops

During 1981, hay crops in the Kamloops district suffered from cool, wet weather for the first cut resulting in some poor quality hay. Second and third cuts came off in good condition as weather improved. Good weather in July and August in the Williams Lake district resulted in good harvests.

Staff members conducted demonstrations and trials of new crop varieties, products and production techniques to determine their best application.

Cereal crop acreage increased significantly in the region as a result of the warm, moist weather and open fall. These crops were used for hay, silage or grain. This need to keep hay productic at a high level is encouraging the use of alterna crops in rotation resulting in increased farm interest in alternate crops.

Horticulture

Interest in horticultural crops continued to grc as shown by increased production of sweet co and potatoes in the northern part of the regic and of sweet corn, tomatoes, peppers, melor asparagus and small fruits in the south.

Livestock

Beef cattle producers experienced the secor year of declining prices and increased costs. Ar ple supplies of fodder and a slight drop in barl prices encouraged some local producers to p calves in feedlots. The open fall allowed cattle stay on range, cutting down on the feed needed the early part of the winter.

Dairy production remained very small in spi of the potential. Swine, poultry and sheep pr duction remained static, with some evidence of a increasing interest in sheep.

Extension Activities

Regional staff arranged for field days and mee ings and developed a variety of other extensic programs.

Alfalfa Management Project

In cooperation with the B.C. Cattlemen's Ass ciation, and with funding from the Feed Freig Assistance Adjustment Fund, a series of lectur were presented throughout the southern interi to over 500 producers. Plots were seeded and number of field days held. A bulletin and a set slides were produced for future extension worl

Irrigation Field Day

With the cooperation of a local ranch, equi ment dealers and manufacturers, and the mini try's Engineering Branch, a variety of irrigatic equipment was demonstrated to over 2(people.

Wetland Meadow Water Control Workshop

A water control workshop was held at the Alkali Lake Indian Reserve. This workshop explained methods of controlling water levels for improved production of natural forage on wetland meadows.

Information presented has been developed on continuing wetland development project conducted in cooperation with the Engineering Branch and Agriculture Canada.

Other Activities

A number of crop and financial management workshops were conducted by staff members who also continued to provide assistance and advice to 4-H clubs and their leaders.

Regular contact with producers was facilitated through other programs such as the Beef Record of Performance and the *Agriculture Land Development Act* inspections.

Staff members conducted demonstrations and trials of new crop varieties, products and production techniques in order to determine their best application. The following subjects were among those covered:

- Wetland Meadow Management
- Irrigated Pasture Project
- Variety trials for corn, sorghum sudangrass, alfalfa, orchardgrass, barley, etc.
- Lime trial
- Musk thistle biological control
- Fertilizer crop response

Land-Use Planning

Land use planning continued to place an increased workload on district extension staff and other field officers. Regional personnel have been active on several committees involving Crown land plans, deferred planning areas, forest reserves, regional district development of zoning bylaws, and the development of policy regarding the urban-agricultural interface. In response to resource management committee requests, staff were heavily involved in regular planning and review meetings to ensure a strong agricultural presence during any planning decisions affecting land use.

Regional staff arranged field days on fence construction, range development, irrigation, etc., to inform farmers of newly developed techniques.

Okanagan-Kootenay Region

The Okanagan-Kootenay region takes in the southeast corner of B.C. and encompasses eight district offices. The regional office is located at Summerland.

Field Crops

Programs aimed at increasing forage potential and thereby expanding the livestock industry in the East Kootenays were an important part of staff responsibilities. Seminars and field days were held to increase rancher awareness of factors in range development.

Efficient dairy-forage production was encouraged among the 140 producers who attended a competition and tour in the North Okanagan.

Field staff worked on the alfalfa management project which is part of a five-year program to increase producer understanding of sound alfalfa agronomic practices.

Some reduction in knapweed infestation was achieved particularly in the Creston district where the ministry, in cooperation with the Creston Valley Beef Grower's Association, initiated a control program.

Livestock

With the cooperation of producer organizations, two dairy cow mastitis programs and two dairy short courses were held. Field staff demonstrated the benefits of mineral nutrition in bee cattle feeding, and as a result a second, comme cial mineral mix satisfying local requirements, we made available.

Staff members conducted demonstration pro grams to evaluate the effects of early/late grazin on rangelands, to show the benefits of fertilizin and reseeding rangelands and to evaluate rang grass varieties.

Tree Fruit

Programs presented in the region to serve th tree fruit industry included seminars on nutritio and pollination, sprayer calibration workshop pruning clinics and a spring horticulture sym posium featuring apple thinning and growth reg ulator technology.

Specific needs were met by field personnel i programs such as irrigation scheduling and trickl irrigation workshops held in the water deficier areas of the South Okanagan.

One major objective of extension programs i to transfer technology to producers and agri-bus ness fieldmen. For example, a codling mot monitoring program is now seeing producers wh can interpret codling moth traps and use the info mation in their own control programs.

District horticulturists were involved with th tree fruit industry in forecasting crop maturatio and in arranging the Horticultural Forum at tended by 400 producers.

Vegetables

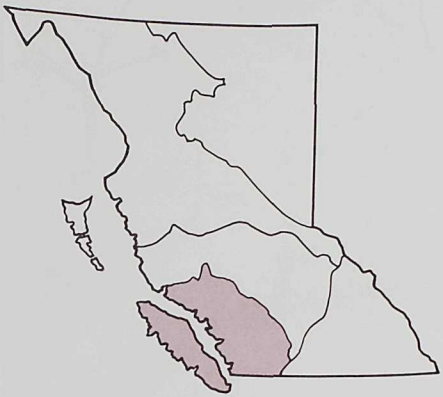
The vegetable industry which is in an expan sion stage has benefited from a comprehensiv program which included asparagus variety eva uation, production technique demonstrations identification of market opportunities, fusariur wilt surveys and asparagus aphid control.

The vegetable industry, in an expansion stage, benefited from a comprehensive program . . .

Three district offices used a Code-a-Phon service which handled several thousand call from growers; specific, timely production info mation was made available on a 24-hour basis

Pruning and other horticultural techniques are demonstrated in growers' orchards.

South Coastal Region



The ministry's reorganization and regionalization, initiated in late 1980, became fully operational in 1981. This feature dominated the region's administration work, staff working-relationships, planning processes and extension programming. Cooperative efforts and extensive dialogue among field staff, coupled with support from the ministry's executive, were responsible for the relatively smooth adjustment to the new system.

The weather played havoc with crop production; high interest rates—peaking at 22.75 per cent adversely affected farm finances, and inflation running as high as 13 per cent added further pressures on farm operators. It was a year of constraint, financial adjustment, and reduced farm incomes in the South Coastal Region.

. . . over 50 workshops, seminars, field days and short courses were organized by regional staff.

The ministry opened a new district office at Sidney on the Saanichton Research Station early in 1981. In addition, and as an integral part of the regionalization process, five commodity extension committees were appointed, and coordinators selected. These committees of the ministry are responsible for identifying producer program needs and working with others in agri-business and farm organizations; as well as referring research needs, developing extension program planning and delegating project action group and evaluating ministry programs.

The five committees, each responsible for or commodity, concentrated on developing a coh sive team framework, creating a basic unde standing of the commodities and the status of th industry, and identifying producer needs.

Extension

The wide diversity of crops and livestock, th large number of farming operations, the intensiv concentration of producers and the complex ir frastructure of agri-business presents a challeng to extension staff of the region.

A highly successful group of over 50 work shops, seminars, field days and short course were organized by region staff. Examples of som of these programs include:

- Fruit and vegetable production workshop fc KATZ farm co-op (Indian Reservation)
- a growers' short course in co-operation wit the Lower Mainland Horticultural Improve ment Association
- sprayer calibration workshops for cole cro growers
- a Fraser Valley tour for Washington Stat vegetable processors
- taxation tip seminars in Courtenay an Chilliwack
- sheep field day on Saltspring Island
- dairy manure management workshop a Duncan
- swine producers' spring short course i Abbotsford
- a dairy manure storage and handling fiel day
- corn and forage field days throughout th Fraser Valley
- blueberry growers' field day in Richmon
- carrot fertilization trial field day
- greenhouse growers' seminar
- dairy producers' short course sponsored i co-operation with the dairy educatio committee

Among the many miscellaneous extension pro jects was the establishment of a regional agri-dat board for listing all agriculture-oriented activitie in the region.

In addition to basic extension work, applied esearch and demonstration projects were an in- egral part of the ministry's regional activity; most egional extension service staff were involved vith specialist staff on various projects designed o help farmers view new or improved techniques n crop and livestock production.

Crop Conditions

Record rainfall occurred throughout the region nd along with lack of sunlight and mild tempera- ures, caused root rot, fruit rot, pest problems, ow growth, poor maturity and difficult harvest onditions. Horticulture and forage crop plant- ngs were delayed by weather in some cases until id-July. Standing water in fields destroyed lants, forcing farmers in some instances to re- lant. In other cases growth was slow and spo- dic, reducing yield and quality. Some crops ere not harvested.

The Rain Damaged Crop Assistance Program troduced by the ministry resulted in 192 ap- lications, for an approximate value of $9,650,000 in operating loans that would qualify for special interest reimbursement benefits under the *Agricultural Credit Act.*

Pea, bean, sweet corn and root crops all suffered from wet growing conditions which reduced yields to one-half of average. First plantings of many cole crops were lost due to the wet weather and subsequent production was well down. Many fields had to be replanted several times.

Late plantings matured slowly or not at all in the cool, wet fall weather; resultant diseases also caused serious losses.

Late plantings matured slowly or not at all in the cool, wet fall weather, resultant diseases also caused serious losses.

The federal government's ban, effective 1982, on potato growing due to golden nematode infestation in the Central Saanich area, caused crop disruption in that area.

Crop damage was common in early 1981 due to continual spring rains.

Mushroom production was relatively steady throughout the year. Energy costs, off-shore imports of canned mushrooms, labor, interest rates and environmental concerns about compost, continued to be of major concern to the mushroom industry. Total production for 1981 is estimated at 8 820 tonnes.

Potato acreage was down over previous years with some intended acreages not planted due to weather conditions. Late blight infected the potato crop in June—the earliest on record—and some plantings were lost. A supply of the restricted fungicide Ridomil saved the crop.

Berry producers suffered from the adverse weather conditions. Many growers reported their yields down by 25–50 per cent. Total production of the 1981 crop was only 77 per cent—7 310 tonnes—of original production estimates. Raspberries suffered from water-logged soils during the spring and summer rains; root rot was evident, yields were depressed due to poor fruit set and some fields were all but lost. The 7 985 tonne total raspberry crop in the Fraser Valley was about 80 per cent of the estimated 9 980 tonne potential crop.

A new berry processing facility was opened by the East Chilliwack Co-operative allowing top quality berries to be individually quick frozen.

Of all the horticultural commodities, mushrooms and cranberries were the only crops to make significant production gains over previous years. Except for cranberries, there was very little new land cleared for additional horticultural production.

Except for some minor pollination problems, due to poor weather and slight hail damage, growth in the cranberry bogs was near normal. The crop was slightly higher than expected, being projected at 6 600 tonnes.

The blueberry crop was down considerably; reduction was due mainly to mummy berry disease which growers were unable to control due to rain during the spray period.

Livestock Production

Livestock producers in the South Coastal Region suffered from increased cost of production, poor weather and low prices during 1981. Despite these drawbacks, the level of production remained relatively stable for swine, sheep, and veal.

Beef production activity—notably in th feedlot sector—was reduced over the year a some feedlots went out of production.

Swine production in the South Coastal regio is expected to exceed 165,000 market hogs du ing 1981.

There was little change in sheep productio during 1981. Although there seems to be a rea sonable degree of interest in sheep, there has n been an increase in the number of flocks. De mand for breeding stock remained good an there are quite a number of purebred breede throughout this region.

Dairying remained the largest agricultural industry in the region.

The veal industry showed little change durin the year. In spite of the interest in veal productio in the South Coastal Region, there were sever obstacles in the way of stable marketing situatior that must be overcome and will be addressed i the future. The veal industry has good potenti for development since much of the veal now sol in B.C. outlets is imported from Quebec while th region's dairy industry produces a large numbe of calves for veal purposes.

*Dairying remained the largest agricultural in*dustry in the region. Although the industry re mained stable, it was eroded somewhat by hig interest rates and a pricing formula that permitte prices for fluid milk to increase at a slower rat than total production cost increases. Herd size remained relatively constant with an average 65 to 75 cows per herd.

Construction of new milking parlors, barns an bunker silos continued. Dairymen who had re cently undertaken large capital expansion wer the hardest hit by the high interest charges an some were forced to sell quota and cows to re duce their debts.

While returns to producers in the egg and pou try industry remained favorable, disruption of th processing industry placed a considerable strai in that industry.

Land Use

Land use issues remain a constant concer throughout the region and the pressures on th Agriculture Land Reserve from rural develop

nent, industry, highways, etc. remain great. Considerable time was spent studying and reviewing proposals regarding the Annacis Island Highway and the east-west connection through Richmond.

Land use issues dealt with by technical planning committees, resource management committees and special task groups included: the proposed natural gas pipeline to Vancouver Island, Fraser River Estuary Study, Common Utility Corridor on the east coast of Vancouver Island, Boundary Bay Airport Reactivation, fish and wildlife conflicts, Burnaby Big Bend area, and identification of deferred planning areas in proposed provincial forests.

Specialist and Regulatory Services

Crop Protection Branch

The name of the branch was changed in 1981 to more accurately reflect the function of providing information on current and ecologically sound methods of insect, plant disease and vertebrate pest management in agricultural crops.

General Pest Conditions

Pest and disease control on crops in the South Coastal and southern interior regions was dramatically affected by the exceptionally cool, wet weather throughout spring and early summer.

Vegetable Crops—Adverse weather conditions delayed or prevented the seeding of vegetable crops, resulting in poor growth and making it impossible to apply the necessary pesticide sprays on time. Early and severe outbreaks of potato blight would have destroyed the crop had it not been for Ridomil sprays and drier weather in late July.

Growers are extremely concerned over the European asparagus aphid which was found in the Okanagan and as far east as Grand Forks. Another recently introduced pest, the lettuce aphid was found in the Cloverdale area. Projects are being initiated by the branch to develop an integrated pest management program.

Migratory waterfowl, primarily mallard, pintail and widgeon ducks, caused extensive damage to cole crops in the Fraser Delta area. Branch staff participated in an inter-agency study concluding that pesticides caused no waterfowl deaths on agricultural land during the October 1980 to March 1981 study period.

Tree Fruits—Abnormally wet weather resulted in inadequate pollination, poor growth and an increase in fungal diseases of fruit trees. Defoliation, caused by fungal diseases, was severe in the South Coastal region. The most serious outbreak of fireblight since 1971 occurred in several Bartlett pear orchards in the Okanagan.

Crop Protection staff monitored ornamental greenhouse crops for leaf miners.

Mild winter temperatures and light snow cover in the Okanagan caused an early emergence and activity of orchard insect pests resulting in mistiming of many insecticidal sprays.

Migratory flocks of grosbeaks and finches were estimated to have caused more economic damage to tree fruits than robins and starlings.

Small Fruits—Spray programs at blossoming and dry September weather reduced botrytis bunch rot of grapes in the Okanagan. Survey results indicated that grape phylloxera is slowly spreading in the Okanagan Valley. Growers have been advised by branch staff to avoid infested land, to use only clean planting stock and to clean off machinery that has been used on infested fields.

Abnormally wet weather resulted in inadequate pollination, poor growth and an increase in fungal diseases of fruit trees . . . fruit and root rots were major problems in small fruit crops this past year.

Fruit and root rots were major problems in small fruit crops this past year. Growers were concerned because Captan, a fungicide used for fruit rot control, was under threat of suspension by the federal government. No replacement fungicide for Captan is available as yet.

Plastic netting, yellow streamers and distress call tapes have been devised and implemented by branch staff members to control bird damage in grape and berry crops.

Field Crops—European alfalfa varieties, resistant to Verticillium wilt, performed well in field trails set up by Agriculture Canada in co-operation with branch staff members.

A survey of 97 alfalfa fields showed that 11 per cent were infested with the alfalfa stem nematode. No infestations were discovered in the Kootenay, Yellowhead or Peace River areas.

As part of an effort to revive the alfalfa seed industry in B.C. an alfalfa-seed insect survey was conducted by branch staff. The ultimate goal is to establish an integrated pest management program for that crop.

During the year, a number of abnormal crop pest and disease situations occurred requiring close monitoring by branch staff. These include:

- Severe wet weather in Creston caused serious loss of cereals as a result of waterlogging, root rot and leaf rust.
- Larvae of a recently introduced potential cereal pest, the Essex skipper, were collected at several locations in the Shuswap area.
- A leafmining shore fly caused severe damage to several late seeded barley fields in Creston.
- Blackbirds and starlings caused severe damage to corn crops in the central interior and the lower Fraser Valley.
- Forage crops in the East Kootenays and the Creston Valley were seriously damaged by elk.

In all cases, staff attempted to deal with the problem by recommending immediate or future corrective measures in conjunction with other branches.

Greenhouse Vegetable and Ornamentals—In 1981, a survey conducted by staff showed that powdery mildew was present in 13 out of 16 greenhouses.

Staff members distributed biological control agents for mites and whiteflies to greenhouse cucumber and tomato growers. Growers were trained in the proper use of these biological agents and compatible chemical spray programs. A number of chemicals were tested for their effect on the biological control agents and their use in an integrated pest management program.

Leafminer is rapidly becoming a major pest in greenhouses particularly on flower crops.

Livestock Insects—Although face fly and horn fly numbers were low throughout the province, branch staff continued to work on developing more effective controls for nuisance flies, which included the evaluation of commercial fly baits.

Advice on the control of sheep keds, hog lice, cattle grubs, face and barnflies, stable flies, ticks, black flies, mink lice, chicken mites and lice, was extended to livestock producers.

Mosquitoes—Mosquitoes occurred in below average numbers in the Fraser Valley and in average numbers in the rest of the province. There were no confirmed cases of human or horse encephalitis or other mosquito-vectored diseases.

A newly developed insecticidal bacteria was found by branch members to be effective against British Columbia mosquito species.

Extension

Staff members gave numerous lectures, training courses and field demonstrations for farmers, nursery operators, students and home gardeners on modern pest control techniques, sprayer cal-

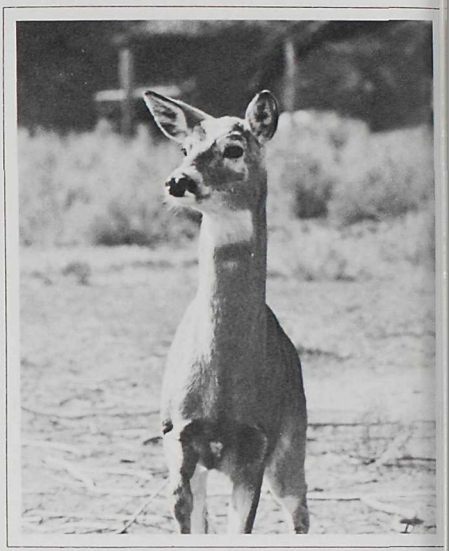
ibration and the safe use of pesticides. A special training course on similar topics, providing 50 hours of instruction, was organized for retail nursery employees in the Fraser Valley.

Branch staff prepared extension bulletins, growers newsletters and pest control notes for use throughout the province.

Diagnostic and Advisory Services

Cloverdale, Victoria and Summerland branch offices answered over 5,000 inquiries from home gardeners. Hundreds of additional contacts with commercial growers and subsequent field calls were made by extension staff. In this way, staff members effectively monitored pest outbreaks in agricultural crops in British Columbia.

Another service provided by branch staff at Cloverdale, was a hot-water seed treatment to help growers control seed-borne pathogens of vegetable crops. This service may be expanded in response to grower demands.



Branch staff conducted deer repellent trials to minimize damage in orchards.

Regulatory

Regulatory actions were taken to prevent the introduction and spread of harmful diseases and insects in British Columbia.

The 1981 survey for little cherry disease in the Okanagan was carried out by branch staff in cooperation with the B.C. Fruit Growers Association. They reported 86 infected trees compared to 116 the previous year. Spray programs against the mealybug vector and tree removal programs developed by branch staff members appear to be deterring the spread of little cherry disease. A clean-up of infected cherry trees in urban areas of the Okanagan is making headway under staff supervision.

The removal of pear-trellis-rust-infected junipers in residential areas over the past seven years has allowed the certification of several nurseries thus allowing them to ship junipers into other areas.

Regulations requiring inspection and certification of nursery stock for European pine shoot moth were rescinded in June, 1981. As a result, no nursery inspections were carried out by branch staff as in the past.

Research Activities

Field trials and demonstrations were performed by staff members to evaluate insect, disease and vertebrate control methods. Recommendations in the ministry's production guide publications are based in part on the results of these field trials. In 1981 the Fraser Valley carrot growers and the crop protection staff were involved in projects to investigate the cause of cavity spot and develop control measures. Field trials will be repeated in 1982 because cavity spot did not develop this past season.

The ultimate goal is to establish an integrated pest management program . . .

Branch staff were also actively involved in testing several fungicides to determine their effectiveness in controlling diseases such as onion blast, powdery mildew of cucumbers and apples, brown rot of cherry, grape powdery mildew, and others.

The branch, in cooperation with Agriculture Canada, demonstrated that strawberry plants of poor quality are being imported from the United States. Appropriate steps are being taken to assure growers of better quality plants in the future.

Strawberry fields were surveyed by staff members for two-spotted mite and its predator. The results provided information on the timing of control sprays.

Staff members investigated biological control of horn flies. Indigenous and imported parasites were released but were not recovered at the end of the experiment. Monitoring will continue in 1982.

Various toxic baits suited for use in integrated pest management programs were tested to control flies in poultry barns. Based on the results of this investigation, recommendations can be made to farmers regarding the most effective materials for fly control.

Dairy Branch

The goal of the dairy branch is to ensure that the consuming public is supplied with fresh, wholesome milk and to promote efficient and profitable production and processing of milk and milk products.

Milk Production

Milk production in the province increased by .5 per cent to 471.7 million litres, in spite of the fact there were 11 fewer farms in production at the end of the year. The provincial dairy herd decreased by 2.6 per cent to 111,000 dairy cows and heifers.

Fluid milk retail sales in milk board areas of production increased 2.4 per cent to 302 million litres while butter production was down 5.8 per cent at 2 196 tonnes. Cheddar cheese production was up 4.3 per cent to 2 488 tonnes. Ice cream production remained the same as last year at 20 436 kilolitres.

Farm cash receipts from the sale of dairy products were estimated at $194 million. The price paid to the producer for milk used in fluid retail sales increased by $3.60/hL to $50.28/hL. Using the basis of 3.6 kilograms of butterfat per hectolitre (100 litres) of milk, a butterfat differential of 40 cents for each point (0.10 kg) change, up or down, in butterfat content was used to calculate the producer's final price.

The nationally set target price paid to producers for their industrial milk was $38.06/hL for the new dairy production year which begins August 1st each year. This price included the federal subsidy of $6.03/hL for industrial milk as paid to Canadian dairy producers.

Five Year Production Fluid Utilization Summary for Milk Board Areas

Year	Millions of Litres			Per Cent of Production	Per Cent of Quota
	Milk Production	Quota Milk	Fluid Sales		
1977	398.2	307.1	261.4	65.6	85.1
1978	399.8	314.3	272.5	68.1	86.7
1979	422.2	329.8	284.9	67.5	86.4
1980	443.9	344.5	294.8	66.4	85.5
1981 (est.)	455.4	357.7	302.1	66.3	84.4

A newly purchased somatic cell counter, installed at the branch's dairy laboratory, proved very popular among growers as a means of identifying animals with sub-clinical mastitis.

Milk Quality

The first priority of branch field staff pertains to regulatory duties including the annual inspection of all farm premises, the inspection of dairy plants and dairy product depots and the inspection and approval of milking and milk handling equipment.

A significant change was made in the classification of finished products for the purpose of establishing safe, microbiological standards.

In the past year, 1,580 official farm inspections were made as well as 1,606 inspections related to equipment, quality problems and other matters.

Considerable effort went towards updating the regulations pursuant to the *Milk Industry Act* which had not been revised since 1968. Farm premises standards were revised early in the yea and by year end a total revision had been com pleted. A significant change was made in th classification of finished products for the purpos of establishing safe, microbiological standards. A major benefit is that the new classification syster includes all existing dairy products as well a those yet to be developed.

Farm milk samples are analyzed regularly at th central laboratory for total plate count, the pres ence of inhibitors, extraneous water, as well a somatic cell count. There was a reduction in th amount of levies during the year, indicating a improvement in farm milk, the results of a promp application of corrective measures. The numbe of composition analyses totalled 388,218 i 1981, an increase of 20.6 per cent. Efforts t improve milk quality by reducing the incidence c inhibitor contamination met with considerabl success. Almost every tanker load of farm milk i now tested daily. This screening is being done b receiving dairies and as a result, the number c inhibitor violations has been reduced.

All complaints regarding the sale of raw mil were investigated by branch staff.

Mastitis Control

A total of 9,019 cows in 150 herds wer checked in the mastitis control program, an 5,087 milk samples were submitted to the vet erinary laboratory for diagnostic analysis. Pro ducer education was advanced by the acquisitio and promotion of a comprehensive slide presen tation developed by the National Mastitis Council

A Coulter Somatic Cell Counter was pur chased and installed in the dairy laboratory. Thi instrument has the capability to screen milk sam ples and identify individual animals with sub clinical mastitis. A program to provide herd man agement information to dairymen whose herd are enrolled on central tested milk recording pro grams was being organized.

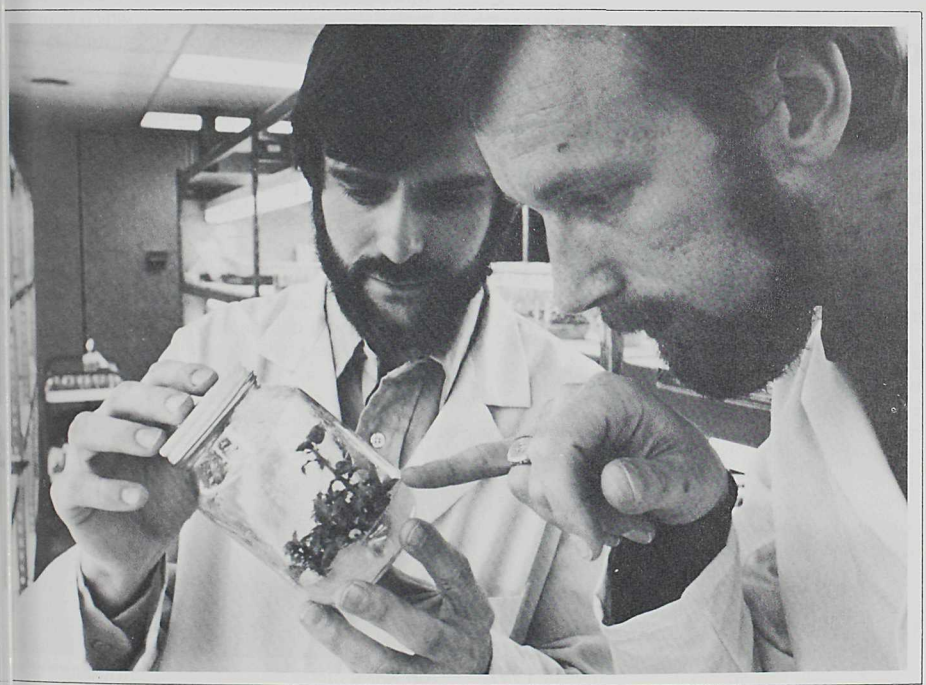
D.A.T.E.

(Demonstration of Agricultural Technology and Economics)

The D.A.T.E. (Demonstration of Agricultural Technology and Economics) program continued in 1981 to fund projects aimed at demonstrating new advances in agricultural technology.

Among the programs that merit special note were:

- Trials on improved range demonstrated that by seeding rangeland the forage yield can be increased seven times, while seeding and fertilizing range increased production by 24 times. Cattle performed satisfactorily on the range and a direct hay saving was possible.
- One hundred virus-free grape plants each of 20 varieties were propagated by the tissue culture method to provide stock for a mother block for the grape industry.
- Work on the establishment of horticultural recommendations for the Stikine Valley in northwestern B.C. was begun. Selected varieties of potatoes, onions, corn and heat-loving crops such as squash and pumpkin thrived in the valley.
- An investigation to determine the cause of the high mortality rate among the imported certified strawberry plants revealed that digging and planting dates, as well as plant cleanliness and handling were significant factors affecting plant survival.
- An evaluation of factors contributing to the occurrence of cavity spot in carrots was undertaken. Trials will continue so that control recommendations can be developed.
- Successful cauliflower variety trials were completed and guidelines on production techniques were sent to commercial growers.



Virus-free grape plants were propagated by the tissue culture method to provide mother stock.

Engineering Branch

The Engineering Branch provides engineering design and advisory service to farmers and ranchers in the province. The advisory service covers most aspects of on-farm engineering needs: drainage, irrigation, farm structures, mechanization, waste management and land and range development.

Engineering offices are now located in most major agricultural regions of the province, including:

- Abbotsford—Fraser Valley
- Victoria—Vancouver Island
- Summerland—Okanagan/Kootenay
- Kamloops—Kamloops/Cariboo
- Dawson Creek—Peace River and Central Interior

Advisory services are provided through direct producer consultation, short courses, field days, engineering plans, publications and press releases.

Drainage

Although advisory services remained a priority, there was increased involvement in implementation of regional water management schemes funded by ARDSA. Branch staff aided implementation of these projects by providing liaison between farm groups and ARDSA.

One hundred and six drainage project inquiries, involving 3,000 acres were handled during 1981. Recommended improvements to this land involve expenditures of $800,000.

Wetland meadow development, primarily in the Cariboo and central interior regions, received increased emphasis. This work involves putting a line of equipment together that will cover the full range of development work—brush removal, ditching, water control, land breaking and reseeding.

New farmland drainage technology will be published during 1982 in a "Drainage Design Manual" in preparation at year-end.

Irrigation

Despite the wet spring and summer of 1981, demands for irrigation continued to be high. Two hundred and thirty-one irrigation requests, involving an estimated potential expenditure of $3 million were dealt with during the year.

High energy costs and water shortages in some areas of the province have prompted branch staf to emphasize energy and waste efficiency. A pump efficiency testing program was initiatec with the co-operation of B.C. Hydro to encour age farmers to maximize the performance anc efficiency of their irrigation systems. Interest ir trickle irrigation continued among orchardists and small fruit growers. Branch staff were alsc involved in planning for effluent irrigation systems in Knutsford and Kamloops.

Farm Structures

The farm structures advisory service continued to be one of the most popular branch programs with several hundred enquiries handled. The estimated value of farm buildings for which planning assistance was provided, amounted to $11 million.

To meet this demand for information in 1981, technology was surveyed across North America, engineering notes updated, and full use made of the branch's stock plans. Plans are developed in the form of working drawings and cover a wide range of farm structures and accessory equipment—beef, dairy, swine, poultry, fruit and vegetables, and a series on special structures. The branch continually upgrades these plans by developing new ones or revising the older drawings into a more attractive and informative format.

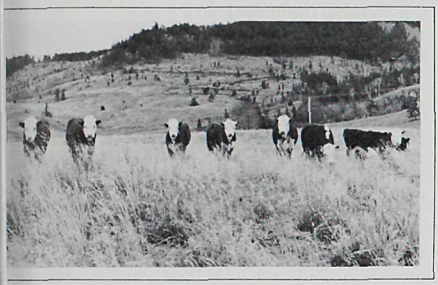
Most farm building activity took place in the dairy sector in the Fraser Valley with very little new construction occurring in the somewhat depressed swine industry. Several new feedlots and backgrounding facilities were built in the interior, partially meeting the cattlemen's objective of finishing more beef cattle in the province.

Waste Management

The waste management advisory service provides farmers with up-to-date technical advice on waste management systems, including collection, storage, handling and disposal of waste water, manure and dead animals.

New dairy manure management guidelines for and application were presented to ministry staff, agri-business and producers. Interest in their use is strong and a greater information effort will be made in 1982.

The branch, through research projects, field demonstrations and published extension material, continued to direct its efforts to develop manure-handling systems that are environmentally safe and will reduce nuisances. Emphasis in 1981 was placed on odour control in swine manure management systems.



Re-seeded range and pasture can show dramatic yield increases in just two years.

Mechanization and Agricultural Land Development

The mechanization advisory service covers a broad range of items, including general farmstead mechanization, forage handling equipment, fruit and vegetable production equipment, tillage methods, and cereal grain handling systems.

Staff placed emphasis on supporting the minimum tillage work in the Peace River Region, native wetland development equipment in the Cariboo, farm safety, and field sprayer extension programs.

Testing and improvements to the range-seeding equipment continued. As a result of a very productive seeding program in 1981, a total of 8 080 hectares of range and community pasture have been seeded since the start of the program in 1976.

Since 1976, over 8,000 hectares of range and community pasture have been seeded by a heavy-duty seeder designed by the Engineering Branch.

Soils Branch

The Soils Branch develops and implements projects and programs which ensure the protection, maintenance, development, and effective use of the agricultural soils resource in B.C. Branch staff activities in 1981 included: advising growers, agri-business, industry, and other government agencies on all aspects of soils; demonstrating soil management techniques to growers, and investigating soil and water related problems; operating the provincial Soil, Feed, and Tissue Testing Laboratory and providing technical services to the Provincial Agricultural Land Commission.

Advisory Services

Branch staff, located in Cloverdale, Kelowna and Prince George, advised the agricultural industry and other agencies on aspects of soil and water management. They estimated available water storage capacity and maximum irrigation rates on 120 routine soil samples and on 80 samples from proposed effluent irrigation sites.

Staff also conducted 32 land drainage surveys and prepared farm drainage plans for 1 000 hectares located in four of the five agricultural regions of B.C. Drain installation increased from 500 000 metres in 1980 to 550 000 metres in 1981. A study of drainage feasibility in the lower Fraser Valley indicated that costs averaged $940 per hectare. The provincial drainage specialist concluded that, when viewed over the life of a drainage system, drainage forms a relatively small portion of the costs of production and should be regarded as an essential management input.

Branch specialists discovered a serious soil erosion problem in upland areas of the Fraser Valley. A bulletin outlining soil erosion processes, affected soils, and conservation practices was prepared.

The branch initiated a provincial soil test/plant yield correlation program in response to the main recommendation of a soil fertility workshop held in 1981. Soil fertility trials will be initiated throughout the province to upgrade recommendations issued by the Soil, Feed, and Tissue Testing Lab.

Branch specialists prepared bulletins and met with farmers to correct serious soil erosion problems, particularly in areas of the Fraser Valley.

Branch personnel prepared a folio on spray irrigation projects detailing ministry involvement, problems, and plans relative to 12 on-going or proposed projects. They also completed manure management guidelines for dairy manure applied to corn and grassland. The guidelines provide information on effects of manure management on quality, quantity required for crop production, and fertilizer required to make up the difference between nutrients supplied by manure and that required by the crop.

Demonstration and Investigation

The Soils Branch initiated or participated in projects to demonstrate aspects of soil and water management and to investigate soil and water related problems. In the Cariboo area, staff determined the response of mixed tame grass—native sedge forage—to added nitrogen, phosphorous and potassium. Native sedge species did not respond to fertilizer, however, the tame grass portion of the mixed stand increased where fertilization was high.

Staff initiated a D.A.T.E. project to determine suitability of using sewage effluent to irrigate a golf course at Osoyoos. Initial results indicate that the effluent is suitable for irrigation.

As a check on accuracy, staff carried out a number of projects to evaluate the recommendations issued by the soils lab in Kelowna. At Okanagan Falls, alfalfa yields were not significantly increased by phosphorous or potassium additions in excess of the recommendations issued by the lab. In coastal B.C., soils with a high level of plant nutrients were studied as to their need for additional fertilizer. The provincial lab predictions of no response to added fertilizer were verified by these trials. Further extension work is required to demonstrate that fertilizer applications can be reduced when soil test nutrient levels are high.

At Boundary Bay Airport in Delta, staff initiated a project to determine the effects of water management on water table status and yield of a number of crops. Results are expected to provide practical answers to many water management problems in the Fraser Valley.

Soils staff investigated cadmium uptake by lettuce and radishes grown on sewage sludge. Uptake was substantial which brings into question the use of sludge for production of agricultural crops.

Staff assisted Ministry of Health officials to determine the agricultural significance of enhanced uranium in surface soils of some wetlands in the Okanagan and concluded that the levels involved are not a health hazard.

At a wetland meadow in the Cariboo area, staff members completed a project to determine the effectiveness of a drainage system in controlling the water table. A wide drain spacing of 60 metres lowered the water table by 0.5 metres, and in the spring the water table in drained areas began to fall 21 days sooner than in undrained areas. These results show that it is feasible to control the water table at low cost ($250 per hectare). Studies of the effect of drainage on crop yield will continue.

The branch initiated a provincial soil test/plant yield correlation program . . .

Soil, Feed, and Tissue Testing Laboratory

The soil laboratory received 16,800 samples in 1981. Sixty-five per cent were from growers requesting fertilizer and lime recommendations and 35 per cent were in support of demonstration and applied research projects, related to soil fertility and plant nutrition, conducted by B.C.M.A.F., Agriculture Canada, B.C. Forest Service, and Ministry of Environment. Sample "turn around" time ranged from less than two weeks to four weeks.

The feed and plant tissue laboratory received 6,218 samples in 1981, an increase of 20 per cent from 1980. Forty per cent of samples were from growers and producers and 60 per cent in support of project and diagnostic work related to soil fertility, plant nutrition, and animal nutrition.

Two laboratory staff, H.H Chuah and Dan Flegel, received recognition under the provincial Suggestion Awards Program for developing a new technique for determining soil sulphur levels. The new method is more than three times faster than the previous method.

The laboratory has implemented two new analytical services; selenium content of feed stuffs and micronutrient levels in soils.

Technical Services to the Provincial Agricultural Land Commission

Staff provided technical services to the Provincial Agricultural Land Commission on soils, agricultural capability, land use, and related matters. As a result of applications to the commission for exclusion from or non-agricultural use within the Agricultural Land Reserve, staff carried out 16 on-site inspections.

Agricultural capability reviews were conducted in six areas where the available soil capability information was inadequate or where the commission had received requests for inclusion of lands into the Agricultural Land Reserve. Branch specialists prepared updated capability reports, maps, and recommendations for each area.

The commission accepted the branch-de veloped methodology for assessing forage land in the Bulkley-Nechako Regional District; base maps for the area were prepared.

Branch staff prepared guidelines for turf man agement and for issuing turf management per mits. Commission staff will use these as the mech anism for ensuring that turf farms are operated in a manner that will not lower long term productivity.

The branch assisted local governments, re gional districts and the Provincial Agricultura Land Commission with administration of the *Soi Conservation Act*. Eighteen on-site inspections were carried out and reports submitted relative to soil removal from, or placement of, fill on land within the Agricultural Land Reserve. Reports contained recommendations on whether or not to allow the application and, if permitted, details or acceptable soil removal and filling procedures and methods of site reclamation.

Veterinary Branch

The Veterinary Branch includes field operations and administration, the veterinary laboratory and the livestock brands division. Duties are carried out under the *Livestock Disease Control Act*, the *Meat Inspection Act*, the *Fur Farm Act*, the *Livestock Public Sale Act*, the *Livestock Brand Act* and the *Pharmacists Act*.

The branch administers the *Cattle Horn Act*, the *Livestock Lien Act*, the *Livestock Industry Development Act*, the *Veterinary Laboratory Act* and the pound district regulations of the *Livestock Act*.

The branch initiates and administers programs to control the spread of disease, offers a diagnostic service to veterinarians and livestock owners and provides information on the treatment and prevention of disease. Branch staff regulate the distribution of drugs and biological products used in veterinary medicine through "lay" outlets. They monitor the sale and distribution of meat and meat products in the designated areas and licence—under the *Livestock Brand Act*—all slaughterhouses and abattoirs, and provide a brand inspection service.

Meat Inspection

One plant closed and was removed from in spection while a new plant was added to the Federal-Provincial domestic meat inspection system. There are now three plants on Vancouver Island and four plants in the Fraser Valley, two of which kill and process poultry.

Inspection fees were raised to $6.35 for regular hours in 1981 from $5 in 1980 whereas the $8.20 per hour charge for premium hours remained the same. This resulted in a 35 per cent increase of revenue to $59,700 from $43,500.

Animal Health

There were no major outbreaks of animal disease in the province during the past year.

Hemophilus pneumonia in swine, diagnosed in the province for the first time in 1979 has not recurred; however, the usual intestinal and respiratory diseases were still present. A Certified Swine Herd Plan was initiated and it is hoped that this will provide the hog growers with improved breeding stock from disease-free, well-managed premises.

Trace mineral deficiencies are still evident in all species of animals although the industry is making good use of the branch's laboratory to diagnose these problems. For the most part, adequate use of available supplementary diets is sufficient to counteract deficiencies.

The branch took part in numerous presentations on disease control for livestock owners and students . . .

An outbreak of sarcoptic mange in the upper Cache Creek area was diagnosed in January. As this is a "named" disease under the *Agriculture Canada Contagious Disease and Protection Act*, diagnosis, quarantine and supervision of treatment, using the B.C. Cattlemen's Association spray-dip chute, was carried out. Ministry staff at Dawson Creek and Fort St. John helped Federal officials and Alberta Agriculture treat all animals before they were turned out to summer pasture. Subsequent checking at the Dawson Creek sales yard revealed no new cases.

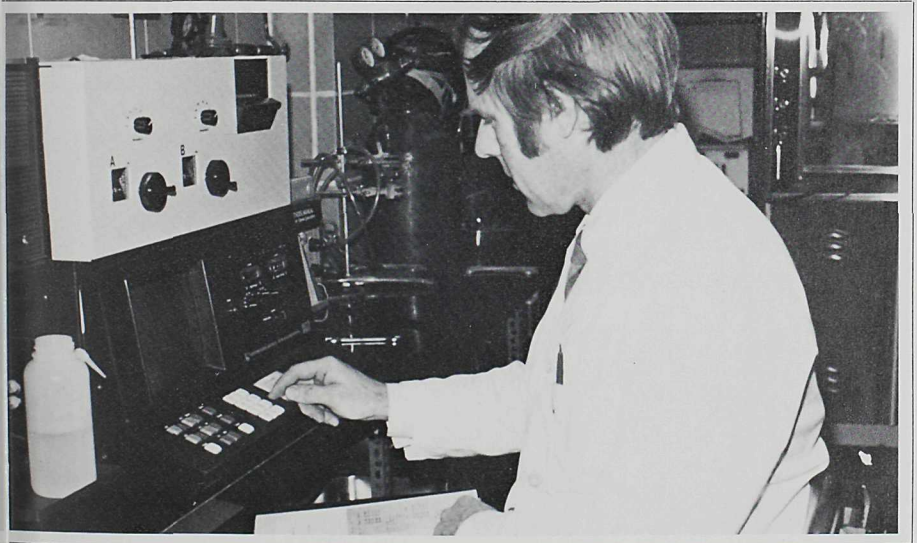
A mastitis bulletin and several disease information sheets were prepared and distributed. Veterinary and brand demonstrations were presented to groups of ranchers in the interior. The branch took part in numerous presentations on the subject of disease control for livestock owners, and students at Fraser Valley College, and University of British Columbia.

Branch staff made numerous visits to mink ranches but no major disease outbreaks were reported. There was a reduction in the number of animals on ranches and the number of ranches licensed.

There was a slight reduction in the number of licenses issued under the veterinary drug and medicated feed regulations. Staff members made more than 250 visits to veterinary drug outlets. These visits appear to be obtaining desired results, as out-of-date or unauthorized products found in stock, have been considerably reduced.

Veterinary Laboratory

The diagnostic workload and preventative medicine projects became more production-animal-oriented due to a new fee schedule introduced on April 1. The thrust is to accept herd and flock samples at a set fee. This has resulted in a marked increase in populations at risk represented by the submissions (i.e.: 64 per cent in-



Veterinary laboratory specialists use sophisticated equipment such as this atomic absorption spectrophotometer to diagnose the city or deficiency of trace minerals and heavy metals in blood or animal tissue. During 1981, the Veterinary Laboratory analyzed r 75,000 individual specimens.

crease in production animals and a five per cent increase in poultry). Small companion animal submissions were reduced by 17 per cent.

A highlight of the preventative medicine program was the erradication of hemorrhagic enteritis in 80,000 turkeys. This was accomplished by using a vaccine produced by the veterinary laboratory staff.

The ministry matched $16,070 donated to the Veterinary Infectious Disease Organization by several provincial livestock and poultry associations.

Livestock Brands Division

The new *Livestock Brand Act* and its regula tions and the new *Livestock Act* and its regula tions were proclaimed in February.

Since the B.C. Cattlemen's Associatio strongly opposed an increase in brand inspectio fees to $1.10—based on 1980 expenditures— the Minister ordered an independent review of th level of service being provided to the livestoc industry. The report was completed and wa being reviewed by the B.C. Cattlemen's Associa tion and ministry staff at year-end.

Youth Development Branch

4-H, farm vacations and the International Agricultural Exchange program are the three areas administered by the Youth Development Branch.

4-H

The 4-H program is a personal growth program for young people. Membership is open to persons from 9 to 19 years of age with 4-H clubs formed around one of 24 different project areas. Adults from the local communities provide leadership for 4-H clubs in co-operation with regional 4-H specialists.

4-H members have the opportunity to acquir skills in several areas:

- technical skills related to the managemen and care of their project
- social skills as a result of the interaction tha occurs with others
- communication and leadership skills as a re sult of the public speaking and demonstration program.

During 1981, more than 3,700 young people participated in 258 clubs with 882 volunteer leaders.

Youth Development Branch Program Participation Statistics

	1981	1980	1979	1978	1977
4-H Programs—member	3748	3435	3620	3576	3943
—clubs	258	243	254	262	267
—leaders	882	824	825	776	819
Farm Vacations—No. of guests	500	529	623	500	400
—vacation days	2500	2645	3175	2480	2125
I.A.E.A.—trainees to B.C.	52	36	33	40	43
—trainees from B.C.	5	16	11	11	12

Provincial 4-H Club Week is the major senior 4-H event held each June. Forty-three members were selected at the 1981 club week to participate in provincial, national and international travel and seminar programs. Members participated in national conferences, interprovincial exchanges, international exchanges as well as the National 4-H Conference in Washington, D.C. Through these programs, 4-H members in British Columbia gained insight into subjects such as energy use in the food system, Canadian government, life in foreign countries, and rural life in other provinces or in the U.S.

Progress was made in developing a 4-H program on Indian reservations.

Progress was made in developing a 4-H program on Indian reservations. Western Indian Agricultural Corporation staff, in co-operation with the Youth Development Branch staff, started 12 native Indian 4-H clubs.

The British Columbia 4-H Foundation fund reached just under $90,000. The interest revenue from the foundation goes toward funding of Foundation One, a provincial seminar for 13 and 14-year-old 4-H members.

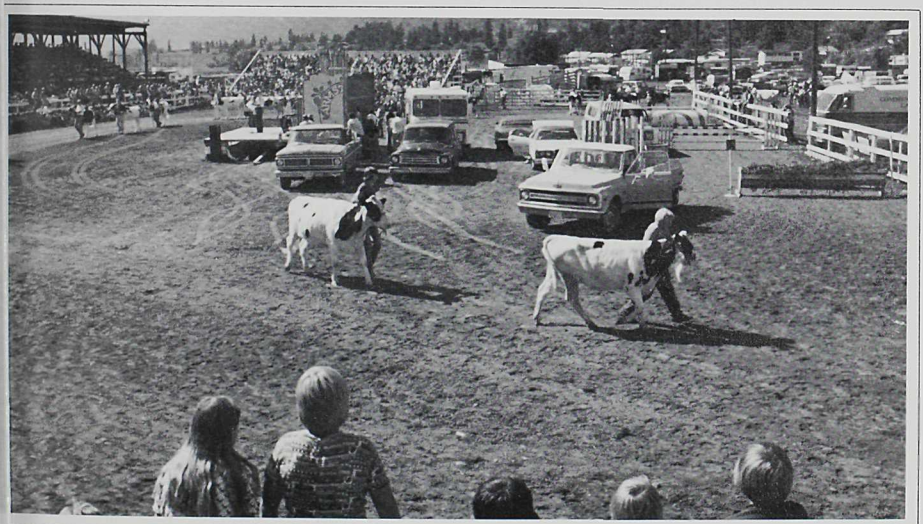
Farm Vacation Program

During the year, more than 500 people enjoyed holidays in rural British Columbia. During the past several years, the participating farm hosts have been mainly hobby or part-time operations as opposed to full-time commercial farmers. The rural vacation option is essentially a tourism activity and arrangements were made with the Ministry of Tourism to take over the program effective 1982.

International Agricultural Exchange Association Program

The Youth Development Branch acts as British Columbia's coordinator for the international youth program. The International Agricultural Exchange program gives rural young people the opportunity to travel to other countries and to work for a specified period on farms in their host country.

The main objective of the I.A.E.A. program is to provide the participants with training in the agriculture of another country. Participants live as trainees with their host families. In 1981, British Columbia hosted an orientation seminar in Kamloops for trainees coming into the province. Fifty-two trainees from western Europe, Australia and New Zealand, were hosted in B.C.



4-H achievement days are just one of many yearly highlights for the 3,700 young people in B.C.'s 4-H clubs.

Production Services

Apiculture Branch

The Apiculture Branch provides specialist service and advice to honey producers, processing and marketing firms and organizations as well as to fruit growers and seed growers concerned with pollination programs. It undertakes microscopic analysis of bee diseases as well as quality determination of honey and other apiarian products.

Crop Review

In spite of rising costs of supplies, there was a substantial increase in the number of hives in 1981. The total honey crop amounted to 2 174 tonnes, an increase of 403 tonnes over 1980. The number of active beekeepers increased by 103 for a total of 5,529.

Total value of the honey crop was $4,585,112. Wholesale prices for honey ranged from $1.43 to $1.48/kg, while honey sold at the farmgate brought $2.42/kg. The value of related products amounted to $216,147 for beeswax and $150,000 each for pollen and pollination rental.

Market potential for fireweed honey which sold at a price of $3.30 to $4.40/kg continued to be good.

The supply of package bees and queens was plentiful although prices continued to escalate.

Branch Programs

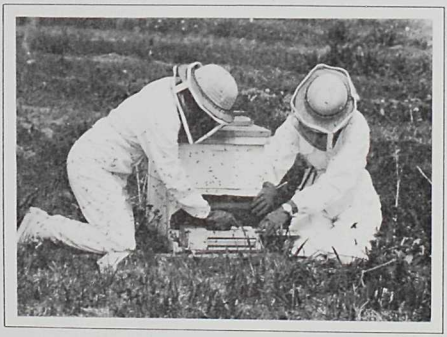
Extension and Applied Research—Losses due to bear predation dropped to 186 hives in 1981 from 300 the year before. The value of honey lost was $27,766, a decrease of $6,854 from 1980. To compensate for losses due t bears, producers were once again provided wit financial assistance under the "Beeyard Bear Pro tection Incentive Program". Grants helped pro ducers finance construction of bear-proof electr fences and other protective devices.

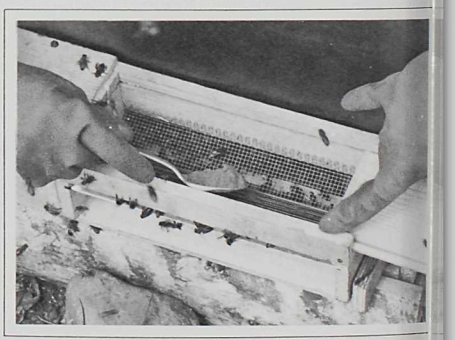
A stock improvement project continued to produce honey bee stock that would adapt to Canadian conditions . . .

A significant increase in apple yields was note in a demonstration project aimed at showing th value of honeybees to agriculture. Using po lenizer bouquets and eight hives of bees, equip ped with beehive inserts, hand-collected polle was placed in the inserts and distributed by th bees through the orchard bloom. The maximur yield of 40 bins in 1980 was increased to 18 bins.

A honeybee stock improvement project begu in 1978 continued with a program to produc honeybee stock that would adapt to Canadia conditions, provide increased honey productio and demonstrate improved wintering.

A total of 206 test and support colonies, 1 breeder queen colonies, 210 nuclei colonies an 30 Carniolan colonies were established for hol ing breeders, testing and selecting stock and ma





Beekeepers place hand-collected pollen in beehive inserts for the bees to distribute throughout the orchards.

ng queens. The program, a co-operative effort with the B.C. Honey Producers' Association, was nitiated as a DATE project and continues with ARDSA assistance.

Three alfalfa seed-producing projects were established at Alexandria, Hanceville and Armstrong using leafcutter bees, *Megachile rotundata*, for pollination.

Apiculture staff was also involved in a project or overwintering of honeybee queens for commercial use; in the cultivation and testing of a oney plant, *Phacelia tanacetifolia*, in plots hroughout the province; in pesticide applicator's courses and in seminar and lab sessions at Simon Fraser University.

Regulation—The incidence of American Foulbrood disease increased from 2.66 per cent in 1980 to 3.67 per cent of 14,324 colonies inspected during 1981.

Contingency plans have been prepared in case exotic mites or other pests or diseases of the honeybee not currently found in Canada should be introduced into the country. Neither the African Brazilian hybrid bee, or the mites, *Acarapis woodi* and *Varroa jacobsoni* are confirmed as being present in Canada or the Unites States at this time.

Farmland Resources Branch

This branch completed its second year of operation serving as a clearing-house in the ministry or a variety of land-use planning and resource anagement issues. The major emphasis connued to be review of legislation, policy, project itiatives of other agencies, and industrial, enrgy, or transportation, project proposals.

Land Use Issues

Oil and Gas Exploration

Farmers in the Peace River Region expressed oncern regarding oil and natural gas exploration. n response, the Provincial Agricultural Land ommission proposed to amend the General rder regulating such land use. Coincidently, the rovince of Alberta carried out a comprehensive eview of surface rights. Its report, published in ovember 1981, will provide valuable reference an inter-ministry committee reviewing a proosed Surface Right Act for this Province.

arm and Stream

Branch staff were successful in developing new dministrative arrangements whereby farmers ill be able to legally drain their fields or divert reams and creeks. Unfortunately, during late 980 and early 1981, several farmers were harged for violations under the *Fisheries Act* when they undertook field drainage projects. A recent amendment to the *Water Act*, delegating responsibility for approvals to the regional manager of Water Resources, should greatly streamline the application process. By the end of the year, several projects received approval indicating that, with proper pre-planning, agricultural operations can co-exist with fishery resources.

Environmental Impact Assessment

The branch reviewed numerous proposals for their impact on agriculture. These included proposals regarding: six metal mines, nine coal mines, four transmission lines, one natural gas pipeline, one highway, one railway, and three liquified natural gas/petrochemcial projects. These reviews outlined the ministry's position, alternate locations or routes, and suggestions on methods to minimize the project's impact on operations of producers.

Well documented inputs from ministry staff and local producer groups and institutes ensured that the needs of agriculture were clearly identified.

During 1981, B.C. Hydro released environmental impact statements for the proposed dam/generation project at Site "C" on the Peace River and the Hat Creek Thermal Plant. Under provisions of the *Public Utilities Act*, public hearings were held regarding Site "C". The branch was responsible for providing details on the amount of agricultural land that would be lost to this project.

Given that Hat Creek would be the first major thermal plant in the province, assessment of its impact required careful study. The branch has been coordinating preliminary review by staff of the Field Crops, Livestock, Soils and Engineering Branches.

Deferred Area Planning

In late 1980 difficulties developed among government ministries in establishing provincial forests and making suitable Crown land available for agricultural development, settlement and recreational use. Several areas of the province were identified and the deferred area planning program was set up. Of some 40 deferred area plans, 21 included lands suitable for agricultural development.

One example of the deferred area planning process was the Prince George Special Area which represented a major step in the allocation of a large block of Crown land among competing demands from forestry, wildlife, agriculture and recreation. The plan was prepared by regional staff of all agencies and included representation by several public interest groups. Well-documented inputs from ministry staff and local producer groups and institutes ensured that the needs of agriculture were clearly identified. The plan, as approved by the Environment and Land Use Committee in December, will see 65 000 hectares of land available for disposition to agricultural uses.

Range Tenures

Staff represented the ministry on an interagency committee that developed administrative procedures to reinstitute grazing leases. Prior to 1981 the policy was to phase out all former leases under the *Land Act*—approximately 1,800 leases including 275 000 hectares—for replacement by licences and permits issued under the *Range Act*. Strong representation by the B.C. Cattlemen's Association resulted in a change to that policy and development of a proposal to allow ranchers the right to purchase portions of leased land.

Planning Legislation

During the year, the provincial government ar nounced its intention to prepare comprehensiv legislation regarding land-use planning and de velopment. A draft Land Use Act was table requiring municipal governments to prepar land-use bylaws respecting intensive agricultura operations (i.e.: mushroom raising, poultr farms, livestock). The ministry's green zone pro gram would now have a statutory framework.

Green Zone Program

The most important consideration for 198 was inclusion of a section in the proposed Lan Use Act defining the scope and content of loc bylaws regulating intensive agricultural opera tions. Under the proposal, local government ma not prohibit such farm operations but only regu late their siting and distance separation from othe uses.

A survey for resident attitudes was conducte in several Fraser Valley neighbourhoods locate near existing beef feedlots, swine barns and pou try farms. The survey clearly demonstrated tha odors, noise and other negative factors diminis with distance and that most people are content t live near a farm in a rural setting.

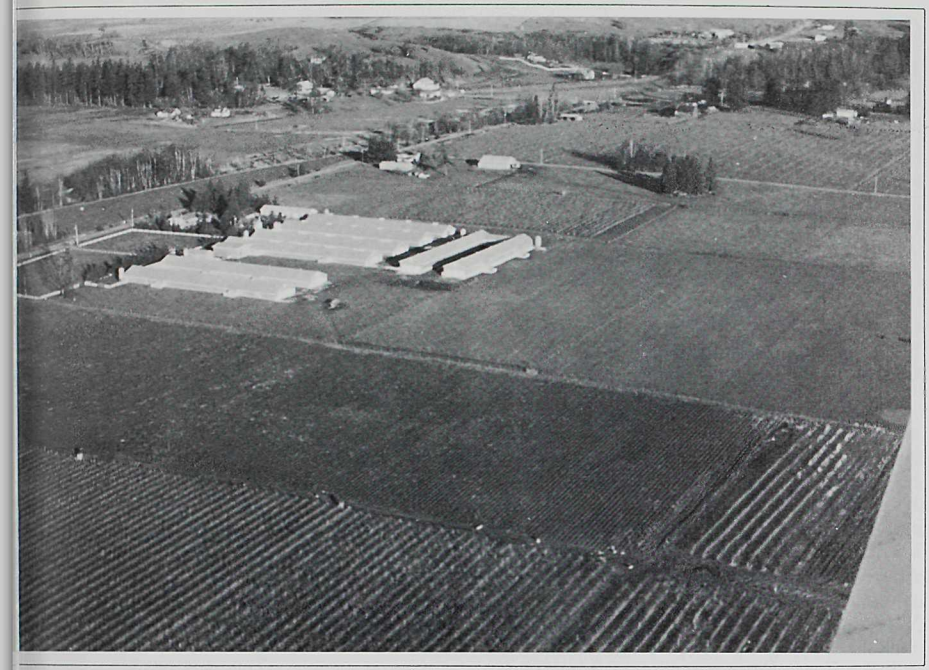
Agricultural Land Reserve

Fine Tuning Program

The agricultural land reserve fine tuning pro gram continued through its second year as a co operative venture among the Provincial Agri cultural Land Commission, Ministry of Agricul ture and Food, and the Environmental Ministry' Terrestrial Studies Branch. Work began on a Wes Chilcotin climate study, a soil moisture study i the Duncan area and a hydrology study for th east coast of Vancouver Island. Reviews of th Saltair-Chemanius and Powell River areas re sulted in the inclusion of 674 hectares in th reserve and the exclusion of 1,609 hectares.

Local Government Applications and Private Appeals

Under the provisions of the *Agricultural Lan Commission Act*, the Cabinet decides upon a applications by local government to amen boundaries of the Agricultural Land Reserve. Fur ther, private citizens may apply to the ministry fo leave to appeal decisions of the land commissio regarding exclusion of land. The branch is re sponsible for organizing and compiling all suc applications for review by the Minister or Cabinet



e branch reviews proposals for land use to determine the projects' impact on agricultural production throughout the province.

roblem Wildlife

During past years producers have been report- 3 increased problems from losses caused by ldlife (i.e.: cattle-wolf, orchard-deer, forage-elk, ops-waterfowl). Ministry staff asked Ministry of Environment staff to respond to reports of damage.

There is growing pressure that producers should be able to consider claims for damages where animal control measures fail. Staff have reviewed compensation programs in place in other provinces and have outlined a suitable framework for B.C.

ield Crops Branch

The Field Crops Branch is involved in applied search and extension activities designed to as- t farmers and ranchers in field crop production d management, range management and weed ntrol. The branch also administers the *Weed ontrol Act.*

1981 will be remembered by coastal farmers as e of the worst ever for field crop production. An unusually wet, late spring delayed planting, and persistent rains caused widespread damage to crops. In the interior, conditions were slightly better. Range condition throughout the interior greatly improved as a result of above average rainfall. The Peace River region experienced summer drought which caused a reduction in yield of all crops. Harvesting in the Peace was completed by the end of September.

Cereal and Oilseed Production

Total production was down in all major cereal and oilseed crops. Acreage devoted to wheat and feed grains increased while the acreage of canola (rapeseed) declined.

Estimated 1981 acreage and yields were as follows:

Crop	Acres	Hectares	Yield (Bu./Acre)
Wheat	135,000	54 700	30.7
Oats	78,000	31 600	42.7
Barley	283,000	114 600	34.9
Canola (rapeseed)	88,000	35 600	12.5

Variety tests conducted in the Peace River region in co-operation with the Beaverlodge, Alberta Research Station of Agriculture Canada have led to the licensing of an early maturing barley variety, OTAL. This variety is similar in maturity to Gateway 63 but is higher yielding. In the Fraser Valley co-operative testing with the Agassiz Research Station has resulted in the regional licensing of high yielding feed wheats Opal, Vernon and Dundas. In addition to these trials, tests were conducted at 10 other locations.

In the Peace River area, three fields of barley, two of wheat and one of canola were seeded in the spring of 1981 comparing zero tillage with conventional tillage. Two plot areas of winter wheat were established with the zero till method, one at Fort Nelson and one at Dawson Creek. Under conditions experienced in 1981, barley performed better under zero till than the other crops.

Zero till trials showed that barley performed better under zero till than other crops. Although needing more study, zero till is a promising technique to reduce unnecessary moisture loss and soil compaction during the seeding process.

Forage Crop Production

Total provincial production was estimated 1,897,500 tons of hay equivalent, slightly l than 1980 production. The reduction was d mainly to drought conditions in the Peace Ri region. Imports of alfalfa from Washington for t first nine months were 82,919 tons and we expected to be about equal to the 1980 total 108,565 tons.

A total of 199 users pastured 13,354 head cattle on 12 B.C. community pastures situated the Peace River and Central B.C. regions. T ARDSA pasture demonstration project was co tined. This year, seeded pastures supported co and calves for 140 days with an average daily ga of 0.45 lbs. for the cows and 2.14 lbs. for t calves. Species evaluation, climatology studi and brush control continued.

Another major project was the fertilizer corre tion study in Central B.C. and the Chilcotin carried out in co-operation with the Soils Bran and the B.C. Federation of Agriculture. Comple reports will be available at the end of the 19 season.

Staff conducted Verticillium Wilt resistant falfa variety demonstrations at 10 locations in t southern interior. This work has led to a licensi application for the variety VERTUS.

Orchardgrass and Perennial Ryegrass varieti were evaluated at two locations in the Fras Valley. These trials will be conducted for o more year after which a decision will be made to which varieties should be licensed.

At Redstone in the Chilcotin, 10 varieties irrigated alfalfa seeded with Climax timothy ha been evaluated over a three-year period. T highest yielding mixture produced an average 5 tons per acre annually.

Other studies with forage crops, involving fer ity trials and variety trials, were carried out in different locations.

Silage Corn Production

In coastal areas corn planting was serious delayed and growth was slow resulting in a l dry matter crop. At two locations where corn tri have been conducted for the past three years, d matter yields have dropped by more than 50 p cent. In the interior most fields reached acce able levels of maturity.

The acreage planted in 1981 increased to estimated 26,000 acres with an average gre

weight of 16.45 tons per acre. In co-operation with regional extension staff, corn hybrid trials were planted at 27 different locations.

Forage Seed Production

Total acreage devoted to forage seeds was estimated at 46,000 acres of which 44,000 were located in the Peace River region. According to the Canadian Seed Growers Association, there were 11,273 acres devoted to pedigreed forage seed. The major species was Creeping Red Fescue followed by Timothy, Alsike Clover, Red Clover, Alfalfa and Bromegrass.

The Field Crops Branch coordinated the distribution of foundation forage seeds in British Columbia for the Canadian Forage Seed Project.

Considerable interest is developing in the production of alfalfa seed utilizing leafcutter bees as pollinators. At Dawson Creek, the hot, dry weather was conducive to good bee activity. Although drought and severe winter injury had caused a reduction in bloom, trials conducted by the branch produced 300 pounds of seed per acre. Similar results were obtained in trials conducted at Kelowna. Results at Hanceville were especially encouraging.

Forage seed plots established under the B.C. Seed Evaluation Project funded jointly by the B.C. Ministry of Agriculture and Food, Agriculture Canada—New Crop Development Fund and the seed trade continued to be monitored in 1981.

These plots have attracted considerable interest and have already resulted in some new seed growers in areas such as Vanderhoof, McBride and Creston.

Using leafcutter bees as pollinators, alfalfa seed trials conducted by the branch resulted in 300 pounds of seed per acre—a marked yield increase over traditional methods.

A bee hive insert showing the leafcutter bee cells.

Range Development

High summer precipitation throughout the major range areas, reseeding of deteriorated ranges and proper stock management have all helped to bring about improved range conditions on Crown range.

The three range specialists on staff were directly involved with coordinated resource management planning. In the Cariboo Region, 18 plans were under active development. In Thompson-Okanagan, eight plans were started bringing the total to 48.

Staff assisted the Engineering Branch in the effective utilization of two range disc-seeder-packer units in operation.

All seedings were monitored under ARDSA Project 271008. Observations in varieties of rangeland grasses seeded under this project show that Crested Wheatgrass is one of the highest producing grasses on all sites.

The Semlin Ranch project near Cache Creek has produced some extraordinary results. Average annual forage production from 1978 to 1981 inclusive was as follows:

Native Range	68 lbs./acre
Unfertilized Crested Wheatgrass	499 lbs./acre
Fertilized Crested Wheatgrass	1608 lbs./acre

At Dog Creek and Alkali Lake, Nordan Crested Wheatgrass and Rangelander Alfalfa showed good early growth.

Potatoes

The total potato acreage increased to approximately 8,200 acres as compared to 7,500 in 1980. Good prices for the 1980 crop resulted in significant increases in the southern interior areas.

The provincial average acreage per farm was 34.7 acres. The largest grower had 315 acres.

Yields in 1981 were down significantly due to weather conditions. B.C. potatoes accounted for 50.9 per cent of the total market sales in the province.

Weed Control

Grants to regional districts and municipalities involved in weed control activities were continued. In 1981, ministry grants of $370,000 resulted in $900,000 of expenditures on weed control by the various agencies.

A proposal to accelerate all activities related to knapweed control was approved by Cabinet in April, 1981. The four main projects addressed in the $250,000 special budget were publicity and advertising, equipment and materials, professional services and weed control grants.

Publicity and advertising included brochures, bumper stickers, range signs, knapweed alert posters, information kits, film distribution, radio and television interviews.

Biological weed control programs involving 10 bio-control agents were carried out . . .

Funds for equipment and materials were used to purchase sprayers and materials for loan to individual ranchers.

Professional services included a grant for Biological Control Research, Allelopathy Studies and a grant to B.C. Research for a satellite-based remote sensing program for more accurate mapping of infestation. Grants totalling $104,000 were also paid to livestock associations willing to undertake control programs within their stock boundaries.

Biological weed control programs involving 10 bio-control agents were carried out in co-operation with Agriculture Canada.

Weed control projects in such crops as cereals, corn, potatoes, beans, peas, cranberries, blueberries, Christmas trees, pasture, alfalfa, turf, onion, cucumbers, hops and strawberries were conducted at more than 50 sites.

General Extension Activities

Staff members were active in many ministry regional extension programs including field days, seminars, meetings and tours. They also served on many provincial and national committees such as the B.C. Range Committee, B.C. Corn Committee, B.C. Forage Crops Advisory Council, Canada Expert Committee on Weeds, Canadian Seed Growers Association and the B.C. Pesticide Committee.

Staff members were involved with other agencies and ministries in various programs including pesticide applicators courses and advisory weed control committees.

Horticulture Branch

The Horticulture Branch is concerned with both the art and the science of horticulture in its broadest sense. It provides specialist services in the production of fruits, vegetables, berries, nursery and greenhouse stock and grapes. Horticulturists and other staff members not only provide producers and ministry regional staff with specialist services but promote and develop all aspects of horticulture in the province. As well as providing leadership in the culture of crops, branch staff prepare production guides for publication, participate in applied research and demonstration projects, and provide crop reports, estimates and statistics. An urban horticulturist was added to the staff during the year.

Staff members were hard pressed to deal with a complexity of problems experienced by producers during the year many of which resulted from dull, rainy weather conditions. Greenhouse and nursery crops suffered from the poor light conditions, apples did not size normally, grapes in a number of vineyards, failed to reach the sugar standard and berry crops were below estimates in production. Vegetable growers had one of the poorest years on record.

Tree Fruits

More apples were harvested during the year than in 1980 but the smaller sizes, due to lack of warm weather following blossom, resulted in a smaller crop—estimated at 412,194,000 lbs.

A heavy fruit set put a demand on growers to chemical thin and then to hand thin, and a shortage of experienced labor resulted in many orchards being inadequately thinned. Spartan and Red Delicious were hardest hit by this problem.

The branch is giving special attention to research in fruit quality through nutrition and pruning.

The main pest and disease problems experienced by growers were apple scab, leafroller, powdery mildew, leafhoppers, and scale. Hail damage was a factor in the Summerland, Penticton and Kootenay areas.

Average crops of peaches, pears, cherries and prunes were produced with associated problems. Apricots were down to half the volume of the 1980 crop, but 1982 looks better with young plantings coming into production.

The branch is giving special attention to research in fruit quality through nutrition and pruning. Orchard replant problems are also being carefully considered.

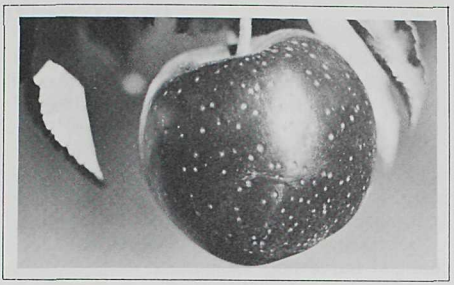
Projects aimed at determining the extent of the nematode problem in tree fruit nurseries and orchards were established. They include chemical control in nursery stock and orchard fumigation of replant orchards. Data collected will help formulate future recommendations for controls where nematodes are indentified as being critical.

Weed control trials in tree fruit nurseries using herbicide combinations were carried out successfully in co-operation with the weed specialist at the Summerland Research Stattion.

Special attention and research time was devoted to Spartan apples as they continued to suffer declining grades and poor color, nutrition and growing conditions.

Staff members conducted numerous pruning trials and training demonstrations to educate growers in these techniques.

Branch members initiated a project to determine the potential for growing processing apples. A committee studied the market, varieties suitable for processing, areas suitable for production and special markets such as cider and wine. It was found that limited opportunities exist for more processing apples.



Although more apples were harvested during 1981, they were smaller in size due to lack of warm weather in the spring, resulting in a smaller crop than the previous year.

Grapes

Weather conditions affected winery grapes and fresh market grape production. Yields in most vineyards were lower than anticipated, in some cases 50 per cent lower than last year. Fresh market grapes such as Patricia and Campbell Early were late to develop sufficient color and sugar content. Several producers were forced off this market due to poor bunch appearance and diseased fruit. The quality of shipments was generally less than satisfactory. The winery market had a good beginning with an early settlement of grape prices. Contributing to this was the accuracy of the cost of production study completed by the branch grape specialist and an economist from the Economics Branch.

Some of the research areas involving the grape specialist during the year included: a climate and soil atlas for grapes, testing of German varieties (the Becker project), grape variety trials, and wine quality evaluations and cultural trials.

Quality of early maturing varieties was generally good to excellent while late maturing varieties such as De Chaunac, Rougeon, Verdelet and Okanagan Riesling developed problems.

Berry Crops

The unusually heavy rainfall had a major impact on the volume of berries harvested and the costs incurred to produce them.

Strawberry plantings overwintered well in all areas. Spring growth and flowering were earlier than normal, but the heavy rains greatly hampered routine field activities such as cultivation,

fertilization and spraying. As a result, weed control was very difficult. The 1981 production was just over 16 million pounds with 91 per cent of the total being produced in the Fraser Valley. The grower price from processors was 52.5 cents per pound in 1981 compared to 47 cents in 1980.

Raspberry production in British Columbia totalled 18 million pounds, of which 17.6 million pounds originated in the Fraser Valley. More than 16.4 million pounds were processed.

Several new developments in the field of mechanical harvesting took place with 35 new raspberry harvesters in operation in the Fraser Valley making a total of 95 harvesters operating on 1,000 acres.

The estimated weighted average grower price from the processors was 70 to 72 cents per pound compared with 39 cents in 1980. The farm gate value of the provincial crop is estimated at $12.8 million.

The production of black currents, blackberries, loganberries and other berries has declined sharply over the past two decades, however, a reversal of the trend was evident. During the past few years, prices have improved and several new plantings of these crops have been set out in both the Fraser Valley and on Vancouver Island.

The estimated farm gate value of filberts was $267,000 compared to $434,000 the previous year. Growers received 85 cents per pound.

Vegetables

Wet weather between March and July caused vegetable crops to suffer. Acreage was down, crops matured late and unevenly, the volume was low, and with it the continuity that holds buyers to a source of supply.

Horticulture branch staff worked on programs geared to extend the length of the selling season by means of earlier cropping and longer storage. They worked to improve quality, weed control and disease control. Staff members conducted variety trials and tested fertilizer treatments.

Considerable branch work was aimed at improving carrot quality. This involved soil and tissue analyses of material from disease-infected

Staff conducted innovative trials to determine the overwintering ability of certain varieties of cauliflower which could extend the growing season and availability of this popular vegetable.

elds, using data from other areas with similar roblems and testing varieties for resistance. A inistry specialist chaired a vegetable storage ommittee which studied storage problems of arrots.

The asparagus variety adaptation trial at gassiz was in its third year and was considered to e sufficiently well established to allow a five eek harvest. Top yielding varieties were Limurgia, Lucullus, Schwet Meist and Rutger's eacon—all harvested later in the season.

A test of 14 varieties of broccoli was carried out nd the variety Emperor out performed the andard commercial variety, Premium Crop.

Staff members obtained much information on ie maturity date of cauliflower using five different eding and harvesting times. Co-operative work continuing with Agriculture Canada at Agassiz n the storage of vegetables, especially cabbage id carrots.

reenhouse Crops

Tomato production declined during 1981 and ore hybrid varieties were grown. A comparison production costs and dollar return on these rieties was initiated into the testing program of e branch.

Management has improved with each succese year of cropping cucumbers in sawdust, but wdery mildew continued to be the main threat that crop. Branch specialists were in the process evaluating cultural and biological controls for e problem.

More growers are using supplementary umination for greenhouse ornamentals and ereby improving quality and production. An creased number of producers specialized in ol-season crops in an effort to minimize energy nsumption; however, production in the later nths of 1981 was reduced because of poor mand.

During the year, staff members focused more ention on contact with groups of growers. The ower Notes newsletter also continued to reive excellent response from growers. Specialists ld meetings for growers to discuss the branch's mato variety trials. A survey indicated that over 0 growers, cropping some 170 acres, are operng greenhouses in British Columbia.

A pre-arranged tour of Holland and England ve the greenhouse specialist an opportunity to serve first-hand the products of their research greenhouse crops which could benefit the instry in B.C.

Nursery Stock

Ornamental nursery stock production continued to increase, both on the coast and in the southern interior of B.C. The estimated value in 1981 was $28million at the farm gate with much of the production sold out-of-province.

In 1981, branch staff conducted a total of 15 trials using ornamental nursery stock at various locations. These included herbicide and fungicide trials, fertilizer and top-dressing trials, and propagation testing.

A display booth was prepared and manned for the First Annual Western Canada Horticultural Trade Show in July 1981.

The tree-fruit specialist administered the Tree Fruit Certification program in 1981 and performed all the rootstock and variety indentifications while other staff members assisted in assessments and color coding. Three nurseries participating in the certification program produced a total of 337,981 trees, up 97,219 from 1980. Apple trees made up 59 per cent of this total.

Urban Horticulture

The urban horticultural specialist position was established to help ministry staff respond to the needs of urban clientele. To this end, a new newsletter, *Urban Gardener*, was developed.

The urban horticulturist made plans for the launching of the Master Gardener program in the province. The program recruits local experienced gardeners to take extensive free training in gardening. After passing an examination, certified Master Gardeners volunteer to assist people in the community with their gardening problems.

The specialist completed variety evaluations of bedding plants for the All-American Selection trials in co-operation with the Department of Plant Science, University of British Columbia.

Allotment Gardens

The allotment garden program continued to be popular among urban dwellers as a means of growing their own produce and enjoying the recreational and social benefits of gardening. About 420 plots were used in the Victoria area and 375 in Burnaby. During the year, plans were finalized to turn over the administration of this community-oriented program to the site committees effective January 1, 1982. The ministry will continue to provide advice to plot users as the need arises.

Livestock Branch

The goal of the Livestock Branch is to improve efficiency of livestock production, to administer programs that identify animals of superior genetic value, to identify and publicize improved feeding and management practices, to maintain a corps of specialized commodity advisors and to develop and administer legislation related to activities of the branch.

Beef

Average prices for beef cattle fell below those of 1980 and 1979 by an estimated 16 per cent and 25 per cent respectively, and approximated 1978 levels. This, coupled with continuing increases in most input costs, plus interest costs, caused cattlemen to re-consider options to enable them to remain in business.

The total 1981 kill of cattle of B.C. origin at approved plants was 73,658 head. This was up 11.9 per cent over 1980, and considerably exceeded the national increase of 4.7 per cent fo 1981. Most of the B.C. grown cattle were slaugh tered in the province.

. . . "extension information packages" . . . prepared by the beef technical committee . . . had been put forward to regional livestock committees for approval.

The beef cattle industry responded to the 198 ARDSA-funded "Strategic Plan for Intensifyin the Beef Cattle Industry in British Columbia", b formation of the Beef Industry Council, t achieve the goals stated in the report. The branc responded to the need to develop "extensio information packages" by forming a Beef Techni cal Committee. This committee is made up c branch directors whose staff assisted in their area

Average prices for beef cattle during 1981 were about 16 per cent lower than the previous year combined with continuing increases in most production costs.

of expertise. By October the committee had put forward 56 "packages" to regional livestock committees for approval.

The branch and Information Services explored ways of using the Knowledge Network to reach producers.

The Beef Feeding and Management Guide was updated for publication.

The branch, in co-operation with the B.C. Cattlemen's Association installed a computer at Kamloops to provide cattlemen with herd analysis reports on a continuing basis.

Two projects funded from the Cattle Horn Fund were being supervised by the branch and Information Services. The first involved a film project with the Kamloops Research Station while the other was a study of the advantage of feeding implanted bulls to finish.

Plans were underway for an information booth to improve the public image of the Tranquille Bull Test Station. Central testing of bulls there, is now highly accepted by breeders, with space continually oversubscribed.

Swine

Hogs of B.C. origin slaughtered at approved plants totalled 338,579, up 29.7 per cent as compared to 1980. Canadian slaughter for 1981 was down by 0.8 per cent.

The Canadian weighted average price for 100 ndex hogs was 71.3 cents per cwt. compared to 50.5 cents per cwt. for 1980. The Hog Income Insurance Program played a vital role in stabiliz- ng returns to B.C. producers whose indemnities amounted to more than 19 cents per pound in early spring and to above four cents in the fall.

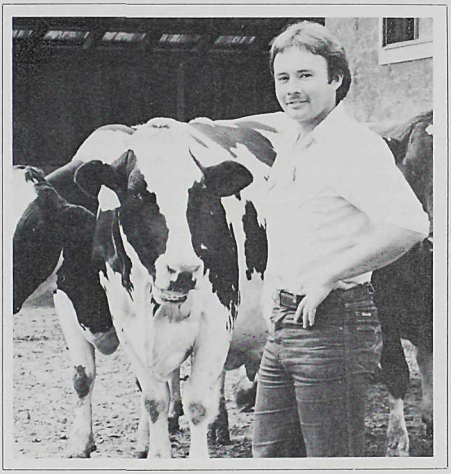
Colony Farm, after eight years of continuous esting, demonstrated what can be done in reduc- ng backfat and days required to achieve 90 kg iveweight. In 1973, average backfat thickness of he Colony gilt herd was 22.4 mm and age to 90 kg was 194 days. In 1981, these were 17.8 mm and 158 days respectively. Breed selection based on record of performance data, rather than management changes, was effective in making this change. Such characteristics are genetic and demonstrate that a more productive herd was developed in the eight years.

Charges for the R.O.P. (record of performance) Program were initiated at an expected 25 per cent of costs during the year and will be increased to 50 per cent of costs in 1982. Breeder enrolment was 15 at year-end, down three as compared to 1980.

The Hog Quality Program continues to be popular. The program administered by the ministry swine specialist has been computerized to reduce staff administration time. The winner of the competition marketed 938 animals, of which 90 per cent indexed 105 or better.

Dairy Cattle

Enrolment on the Dairy Herd Improvement program stood at 534—more than half the milk producers in B.C. The dairy cattle specialist assisted the administrator of the Dairy Herd Improvement Program in designing upgrading programs for staff associated with the D.H.I. services. The specialist continued to assist staff and producers across B.C., in providing up-to-date expertise in dairy cattle management.



The dairy cattle specialist worked directly with producers across the province to provide up-to-date expertise in dairy cattle management.

Sheep

Sheep and lambs of B.C. origin slaughtered at approved plants during the year totalled 11,059, up 52 per cent over 1980, but average prices for both slaughter and breeding stock were lower for most of the year as compared to 1980.

The branch continued to assist the industry in the development of education programs and services to producers. This will be enhanced by the Sheep and Wool Commission and the B.C. Sheep Producers Co-operative jointly appointing a full-time secretary-manager.

Initial branch efforts to assist the sheep industry in establishing a ram test station were reduced when the B.C. Purebred Sheep Breeders advised they were not prepared to support the idea at this time.

Dogs and predators continued to be a problem restricting the development of the sheep industry in many regions of the province. A few regional districts are making an improved effort to develop and administer dog control programs.

To assist the control process, the ministry in co-operation with the Ministry of Municipal Affairs, prepared a brochure clarifying the necessary legislation for dog control.

The long-term results of these efforts will be beneficial to the sheep and cattle industries.

Veal

British Columbia veal slaughtered at approved plants totalled 14,195 head, up 19.8 per cent over 1980. Most of this slaughter took place in the lower mainland region. The dairy livestock specialist will be assisting the Lower Mainland Regional Livestock Committee in developing a regional program for the commodity.

Horses

The British Columbia Horse Council was given a grant of $5,000 to assist in developing educational programs for the horse industry. In this endeavour they are working closely with the Youth Development Branch of the ministry.

Goats

During 1981 the Canadian Goat Society requested and received a fee schedule for D.H.I.D. supervised milk sampling on each test day. However, they also applied to the Canadian Milk Recording Board for official approval of a partially supervised milk recording program which, if approved, could lead to a request for partial D.H.I.D. supervision.

Legislation

During the year, all branch responsibility in administering regulations under the Beef Grading Regulations of the *Agricultural Produce Grading Act*, was transferred to the Marketing Branch. The Livestock Branch now administers the *Livestock Act* (Bill 50) and Regulations proclaimed in February 1981, replacing the *Animals Act* and the *Livestock Act* (RS Chapter 240 1979). With respect to the Act, the branch administers the section dealing with livestock districts, bull control areas and artificial insemination of domestic animals.

Branch administration of the *Livestock Protection Act* should be enhanced by a jointly authored policy bulletin produced in co-operation with the Ministry of Municipal Affairs. The branch assisted the executive director of production services in developing the ministry position to the Ministry of Environment in proposed amendments to the *Wildlife Act*.

Other Extension Activities

All staff, but particularly the beef cattle specialist and nutritionist, were actively involved in financial management training workshops developed under ARDSA and have represented the branch director on National Record of Performance Advisory and Technical Committees relevant to their subject specialties.

Poultry Branch

The Poultry Branch provides a specialist extension service to all segments of the poultry, egg and rabbit industries in the province. Staff members help producers solve production problems and assist in the development of modern and efficient production units. The branch provides advice on government programs,new techniques and conducts and disseminates information on research

applicable to poultry operations. It acts as a liaison between producers, marketing boards, national agencies and other industry associations. The staff works closely with other branches of the ministry and other government agencies.

Branch specialists in the production of poultry and rabbits are located at the Poultry Test Station in Abbotsford. The fields of specialty include chicken broiler and hatching egg production, egg production, turkey, rabbit, waterfowl and game bird production as well as poultry health.

In addition to conducting the various tests and projects at the test station the specialists on staff conducted numerous visits to hatcheries, producers, processing plants and other segments of the poultry industry of the province. Branch staff conducted 809 farm visits, attended 262 industry organization meetings and particpated in 59 seminars and other specialist conferences.

. . . specialists on staff conducted numerous visits to hatcheries, producers, processing plants and other segments of the poultry industry . . .

Problems in the processing industry dominated activites in the poultry and rabbit sectors. The province's second largest broiler processing and hatching plant announced plans to close early in 1982. The largest turkey processing plant in B.C. changed hands because of financial difficulties. It was taken over by the turkey producers in the fall and has been a financially marginal operation since.

The only rabbit processing plant in B.C. experienced financial difficulties and at year's end the Rabbit Producers' Association was attempting to purchase the plant and keep it in operation.

The ministry proposed to the industry a comprehensive poultry health program that would be jointly funded by the Provincial Government and the industry. At year end, no decision had been made on its implementation.

Poultry Test Station

The branch maintains a modern poultry farm at Abbotsford, for the purpose of conducting experimental and demonstration projects for the production of broilers, layers, turkeys and rabbits.

The poultry specialist at the branch's poultry test station in Abbotsford examines egg quality in a project to study the effect of change in the hours of light for laying birds.

The following is a list of the projects carried out at the test station during 1981:

1. A test using rabbits to determine the quality of hay that was causing problems to cattle feeders in the Peace River District.
2. A test to see if any detrimental effects could be observed in rabbits from consuming wild Impatiens plants.
3. Study of the effect of varied energy levels in broiler diets on health and performance of broiler chickens.
4. A comparison of the performance of an American manufactured broiler feed versus a Canadian feed and their impact on the incidence of "sudden death syndrome".
5. The effect of change in the hours of light when laying birds reach 42 weeks of age.
6. Studies to determine the possibility of decreased egg production resulting from feed problems on commercial farms.
7. A study on forced moulting of laying hens.

The Turkey Industry

The turkey industry in British Columbia was in a depressed state in 1981—not only were there heavy carryovers of turkey on January 1st, but also the turkey processing industry was in a state of uncertainty for much of the year.

Production marketed in 1981 was some 900 000 kg less than in 1980. Birds placed on farms included 720,000 head of broiler turkeys in 1981 as compared to 730,000 head in 1980, and 767,000 head of heavies in 1981 compared to 894,000 in 1980.

The average weighted price for turkey broilers was 65¢ lb. (29¢ kg), for hens 66¢ lb. (30¢ kg), for toms 66¢ lb. (30¢ kg). The price increased by 6.25 cents per pound (2.8¢ kg) on toms to producers for the year. At the same time the retail price was $1.29 per pound (59¢ kg) at the beginning of the year and $1.30 per pound (59¢ kg) at year's end.

Turkey grades will be studied by the poultry branch in 1982.

Waterfowl and Rabbits

The waterfowl industry became a reality in 1981 with the opening of a waterfowl processing plant, and the establishment of two commercial duck farms. The rabbit industry had a difficult year with the producer having to curtail his production as well as contend with a reduction in price from 80 cents per pound live weight to 65. Rabbit imports from China also had their effect on the B.C. industry.

Broiler Industry

Chicken meat production in British Columbia was up 10 per cent over 1980 and was slightly higher than the record production of 39.9 million kilograms eviscerated weight in 1979.

There were 2 835 000 kg of roasters produced, an increase of 29 per cent over the previous year and there were 37 260 000 kg of broilers produced, an increase of 10 per cent. British Columbia overproduced its 1981 quota allocation of 39 million kg.

Year-end holdings of broilers were excessive at 1.4 million kilograms compared to only 384 000 kg in January, 1981. Roaster storage was 94 000 kg compared to 45 000 kg a year earlier.

Preliminary reports on 1981 broiler chicken sales at 36.4 million kilograms show an increase of 5.6 per cent over sales of 34 million kilograms for 1980. Roasting chicken sales in 1981 at 2.79 million kilograms showed an increase of 27 per cent over sales of 2.2 million kilograms in 1980.

Egg Production

British Columbia's allocation of the national egg production quota is 12 per cent of the total number of layers in the country. There was a quota reduction of 3.5 per cent which went into effect November 1, 1981, however, the ministry supported efforts of the British Columbia Egg Marketing Agency to obtain an increase in the quota. B.C.'s fresh egg marketings were some 300,000 dozen short of requirements in 1981 with the result that eggs were imported.

The prices per dozen at the farm gate at the end of the year were: extra large $1.02, large $1.02, medium 94 cents, small 51 cents.

Poultry Health

A serious outbreak of viral arthritis occurred in broiler chickens during the spring and early summer of the year. Birds, at a younger age than usual, were being seriously affected with the condition and a program of vaccination of breeder flocks and commercial flocks was recommended and instigated in co-operation with the Veterinary Branch. By the end of the year the condition appeared under control.

Of particular significance was the continuing problem of Staphylococcus infection, particularly concerning the broiler breeder industry. This organism is routinely cultured from leg lesions and has caused considerable financial loss to the industry, notwithstanding treatment.

Assistant Deputy Minister Economics and Marketing

Marketing Branch

The Marketing Branch researches and analyzes market situations and opportunities for agricultural products. These opportunities are encouraged through market development and commodity promotion.

The branch regulates the agriculture product markets through the *Agricultural Produce Grading Act* and the *Natural Products Marketing Act* and undertakes national and international liaison on marketing and market access situations. Extension services are provided to the food processing, retailing, and hotel, restaurant and institutional sectors of the industry through market development activities.

The marketing of agricultural products during 1981 had some particular bright spots. These included good raspberry and cranberry prices, strengthening apple and soft fruit prices, potato returns higher than had been seen for some time, strengthened pork prices over 1980 and moderately stable market patterns for the regulated poultry and dairy products with the exception of turkeys. Beef continued to experience poor market returns with few expectations for change in 1982.

Retail food prices continued to move up during 1981, but had a much slower growth rate than had been experienced in either of the previous two years. Increased use of the market research and analysis publication, B.C. Food Markets, which reports these changes on a monthly basis, has been made by the British Columbia media in reporting the reasons for price increases.

Branch staff worked on market analysis of asparagus and field tomatoes.

Federal-provincial market development activities were reviewed in early June at a major national conference held in Victoria. Emanating from that were discussion papers on federal-provincial coordination for market information systems and development. Feedback was given to the federal government on its proposed CANAGREX agriculture export marketing corporation. At the federal-provincial meeting in Victoria, a decision was made to produce a four-western-province Export Trade Show for Safeway officials from around the world. Some 48 British Columbia food firms made presentatior at the show which took place in September 198 This is the first time that the western provinc have co-operated in such a major undertakin the potential export trade generated by this a tivity should benefit a number of British Colun bia food processing firms and their primary-proc uct suppliers.

The branch provided significant assistance t incoming trade delegations from Australia an Japan. Prospects appear bright for increase sales of fruit and vegetable products to both these countries as a result.

Market Research and Analysis

The market research and analysis unit unde took a heavy program in 1981 resulting in th production on a regular basis of: *The Fresh Fru and Vegetable Report*, the *Agrimarket Reporte* reporting input and output prices for selecte items and *B.C. Food Markets* reporting retail foo prices.

The *B.C. Vegetable Marketing Guide* was up dated for 1981 along with the *Food and Beverag Directory*. A weekly report was distributed detail ing prices and movement of all produce item pertinent to B.C. markets. This information wa updated on a daily basis and placed on a 24 hou telephone recorder for use by the various market ing agencies and individual producers within th province. This service, in effect from May throug to November, averaged 30 calls per day from a areas of the province.

A major program of the unit is the monitoring c import commodity prices for possible applicatio of surtax. This monitoring indicated early in th year that surtax should be applied against U.S tomatoes entering the B.C. market. Though th pricing situation corrected itself before actio could be taken it did allow for testing of the systen and the coordination with federal officials.

The Research and Analysis Unit carried out number of extension programs in co-operatio with field staff. Particular market opportunity ana lyses for certain commodities were developec and presented at three meetings in northern B.C. a vegetable producers' meeting in the soutl Okanagan, and at Vancouver Island producers meetings.

As part of its regular public awareness campaign, the branch conducted over 200 food demonstrations at retail outlets.

Branch staff worked on market analyses of ıparagus and field tomatoes. Detailed analyses potentials involved in the processed peas, ɛans and corn markets were provided to both ocessors and producers prior to negotiations for e 1981 price.

The unit completed an overview of the interna- ıal raspberry production and marketing situa- ın. The information has proved to be extremely ıportant in delineating the opportunities for this owing industry.

A *Cattle Marketing Guide* was completed for ıblication and work began on a major review of e characteristics of the hotel, restaurant and stitutional food markets in British Columbia.

The United States Department of Agriculture ld a series of trade policy hearings in 1981 cusing primarily on complaints of unfair compe- ion from Canadian raspberry and blueberry oducers and processors. The branch monitored ese hearings, provided information for U.S. of- ials and intervenors with the result that trade nctions were not imposed.

The unit undertook detailed analyses of market opportunities for various individuals wishing to enter an agricultural enterprise, and provided marketing management expertise for their endeavours. In addition, the unit answered some 2,000 enquiries for market information and analysis from all sectors of agriculture, food processing, financial, consulting, educational and government institutions throughout the country.

Market Development

The Marketing Branch continued a program with the B.C. Ferries corporation and the B.C. Purchasing Commission in testing of foodstuffs for use in the ferry cafeterias. This program was combined with promotion of various B.C. products, when in season, to provide product exposure to travellers.

The market for B.C. produced rabbits was given a major boost during the year with the printing of a brochure of rabbit recipes, a shared

advertising program with the rabbit producers and a number of instore demonstrations utilizing the product.

The branch worked closely with B.C. food producers and processors in producing brochures and developing trade show displays for local and foreign markets. A major display by the B.C. Seed Potato Growers Association at a northwest U.S. trade show during 1981, is an example.

The branch also placed a display featuring many B.C. commodities and processed products in the B.C. Restaurant Association Trade Show. This display was a major new approach to the restaurant industry which now takes close to 40 per cent of the consumer food dollar.

Food demonstrations included preparation of all types of B.C. home grown food products.

The B.C. Food Festival was inaugurated as a consumer display in Vancouver's Robson Square as a joint project by the Ministry of Industry and Small Business Development and the Ministry of Agriculture and Food.

Home Economics

The branch home economist continued to pr duce the Quarterly Recipe Books, produced 2 recipe information sheets for distribution throug retailers, wrote monthly press releases featurin B.C. food products, and answered hundreds consumer enquiries on food preparation, safet and nutrition.

A major program was the dissemination school information packages on B.C. food pro ucts and their use to home economic teache throughout the province.

The home economist worked with the B.C Ministry of Health and the B.C. Nutrition Coun in preparing information on B.C. products durin Nutrition Week. Major articles were prepared f Western Living and Vancouver Calendar Mag zine on preparation and use of British Columb food products. A metric booklet to educate co sumers using metric measures in recipes wa completed.

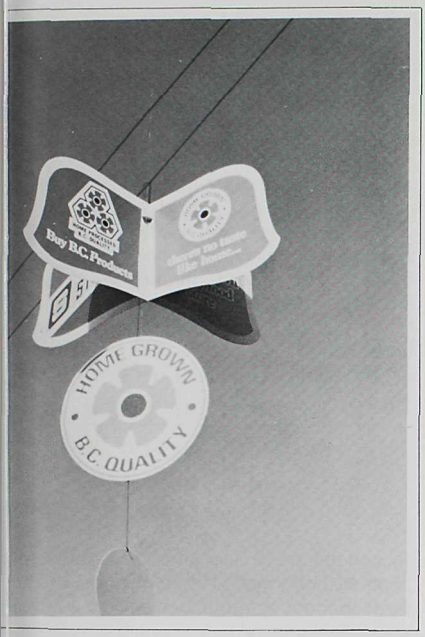
Food Promotion

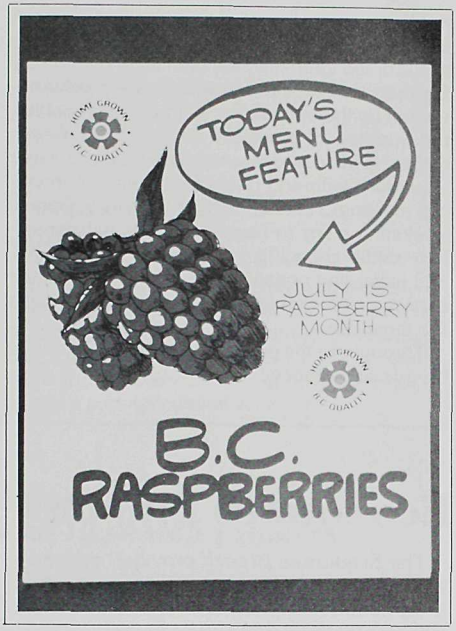
The Food Promotion Program in 1981 ce tered around the "Taste the Seasons" theme wi four seasonal posters distributed to retail stor and schools. About 300,000 Quarterly Recip and Home Gardening booklets, were distribute

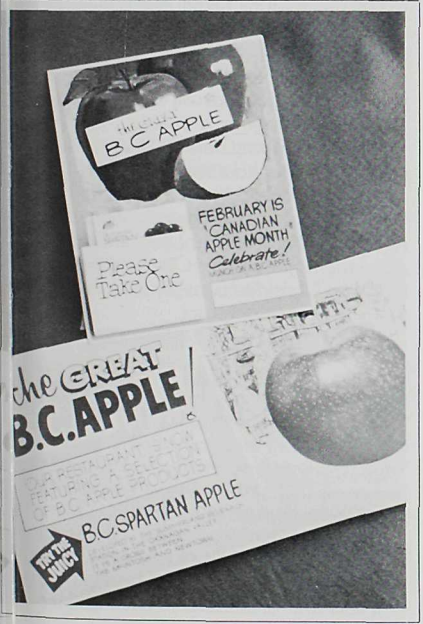
The B.C. Food Festival was inaugurated as consumer display in Vancouver's Robson Squa in co-operation with the Ministry of Industry ar Small Business. It was considered an overwhelm ing success with over 30,000 visitors to the sho

The retail instore food demonstration progra was expanded in 1981 with some 210 food dem onstrations carried out to assist 22 companies commodity groups. The mushroom industry i stituted a program of weekly food demonstratio as a direct result of this program.

The branch assisted with the inception of App Month which was February 1981. The promotio campaign carried out by the industry in conjun tion with the Fresh For Flavour Foundation pr duced major benefits during a normally tou marketing period of the year. Food product te ing continued for a wide range of products ar companies.







A variety of instore promotional display cards are used to create public awareness of specialty commodities or featured B.C. products.

Market Regulation

Under the *Agricultural Produce Grading Act*, the branch ensures effective enforcement of grading regulations through 120 inspectors supplied by the federal Departments of Agriculture and Consumer and Corporate Affairs. As well, the branch determines the short term changes which may be required in order to meet particular commodity marketing circumstances such as those required for rain-damaged cherries or slightly substandard apples.

Marketing problems and their effect on the poultry processors dominated the attention of government in relation to the turkey industry throughout 1981. Pricing and marketing problems contributed to a major buildup in frozen turkey inventory. After substantial financial problems at the processing level, a majority of B.C. turkey producers purchased control of the Pan Ready processing plant and now operate it as a co-operative turkey processing facility.

The review, assessment and communication of British Columbia's poultry industry needs and the status of the three national marketing plans (Egg, Chicken and Turkey) required considerable attention by the branch. For all three commodities, the question of provincial quota allocation with respect to increased provincial needs was a major issue dealt with and discussed in federal-provincial meetings. The inability of the three national marketing plans to respond to national population shifts, changing per capita consumptions, and increasing transportation costs was of major concern and caused considerable stress within the three plans.

Throughout the year several of the commodity boards experienced internal operational difficulties which required ministry and B.C. Market ing Board assistance in resolving. Recurring prob lems of this nature have resulted in initiative being taken by the branch, the B.C. Marketin Board and the Council of Marketing Boards t plan an educational seminar for 1982 which wi assist in educating commodity board director and managers on the principles of marketing pla administration.

The Marketing Branch undertook a number c analyses on regulated marketing problems for us by the ministry, the B.C. Marketing Board and th industry during the year. Particular emphasis i being placed on the poultry industry with branch publication of a monthly report on chang ing conditions.

Economics Branch

The Economics Branch provides leadership and support services to farm managers, agri-business, commodity and farm organizations and guidance to ministry and other government agencies in the following areas:

- farm business management
- production economics
- resource economics
- agricultural statistics
- data processing
- special projects

The branch prepares booklets and factsheets on farm management topics, conducts economic studies and surveys, provides farm business education in the form of courses and workshops, provides leadership in the delivery of farm planning techniques and offers client counselling in these program areas.

Farm Business Management

The primary purpose of this program is to improve the business management skills and practices of farm managers in the province.

During 1981 this was accomplished through a full range of activities including:

Preparation and Publication of Resource Material Factsheets

Two factsheets were published each month to present economic, financial and legislative information to farm families and field staff. Tools, cor cepts and information to assist in maximizing ne farm income through better decision-makin skills were stressed.

Major Publications

The publications *Taxation and the B.C. Farme* and Farm Business Partnerships in B.C. wer reviewed and updated. However, due to majc changes in the November 12, 1981 Federal Buc get, further updating will be required prior t publication.

Sources of Farm Credit in B.C. and a referenc manual on *Liquidation and Bankruptcy* wer published.

Other publications in preparation were *Privat Aspects of Agricultural Leases, Sample Leas Agreements for Various Commodities* and *Estat Planning Considerations for B.C. Farmers.*

Farm Financial Management Training Project

The second year of this ARDSA-funded pr gram was completed in 1981. The proje provides a training program to update the finar cial management skills of farmers. Courses we offered on a commodity basis to farmer ranchers and orchardists at each of three level

ie Introductory Course covered basic concepts d tools involved in compiling, analyzing and corporating financial statements into the plan- ng process. A one-day tax planning session was o offered. The Intermediate Level Course of- ed more advanced concepts, including finance d debt management, paper handling, machin- y costs, marketing strategies, production for ofit, business organization and estate planning.

. . the Economics Branch upplies the British Columbia griculture and food industry with levant, timely and accurate data n the size and nature of the dustry. This information is ssential for good decision- aking . . .

le Advanced Course was designed to cover re specific topics in-depth, such as economics cattle feeding, business analysis, record-keep- i and business organization strategies. Due to t enthusiastic response to the specific in-depth e of course the topic offerings are being ex- nded for 1982/83.

The three levels of workshops, using a case sdy approach, offered a progressive learning oortunity to farmers. With group sizes of 12 to 2, good interaction was achieved and post- urse follow-up encouraged. Approximately 40 urses were held throughout the province with 0 farmers participating. (Table I and II).

rm Business Challenges

he "Farm Business Challenges of the 80's" ference held in Vancouver during January 31 attracted 225 participants including com- rcial farmers, consultants and advisors, agri- iness representatives and staff from other ncies. Prominent 'leaders' in the area of busi- s management, from both Canada and the ted States, identified and discussed the chal- ges facing farm business managers in the 30's.

The Economics Branch involved other ministry representatives, B.C. Federation of Agriculture, University of British Columbia and agri-business representatives in the organization of this successful conference.

Workshops and Short Courses

In addition to acting in an advisory capacity to farmers, staff and other individuals, the regional farm economists and farm business management technicians assisted in planning courses, workshops and seminars related to farm business management and agricultural economics.

Information, Survey and Research Projects

In an attempt to establish benchmark information from which program needs may be identified and developed, three regional farm economists within the branch led the following projects:

Labor Management Survey—172 farmer interviews and subsequent analysis relating to wage rates, fringe benefits, training practices and other employer-employee arrangements were completed.

Lease Survey—A preliminary analysis and comparison was completed in 1981 regarding rental rates and arrangements and ownership costs for various types of agricultural assets.

Farm Business Practices Survey—270 farmers were surveyed by area and commodity to provide benchmark data concerning managerial expertise. Preliminary analysis has been completed.

A number of background papers were prepared for the branch and ministry, including "Farm Management Requirements, Needs and Expectations Over the Next Decade" and the development of a program strategy for the ministry following the privatization of Canfarm.

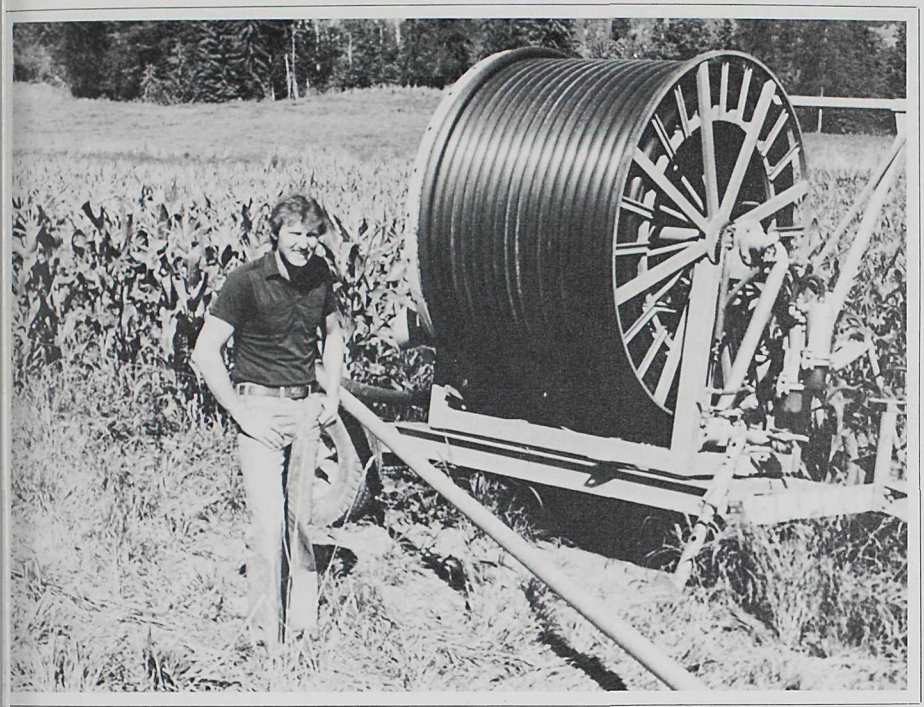
As part of the ongoing challenge to utilize new technology, several micro-computers and appropriate software packages were tested in order to determine their application to farm business management decision-making and advisory work. A library of software is being compiled and systems have been demonstrated to farmers, staff and agri-business groups.

Table I Workshop Numbers, 1978/79 to 1981/82, by Levels

Course	78/79	79/80	80/81	81/82
I	7	18	24	19
II	0	3	10	7
III	0	0	0	15

Table II Workshop and Student Numbers, 1981/82, by Commodity and Course Level

Commodity and Type	Number of Workshops	Number of Students
Cattle—		
I	4	52
II	2	30
III—feeding	6	84
—business analysis	6	79
Orchard—		
I	2	24
II	2	30
III	1	24
Dairy—		
I	1	10
II	2	30
III	1	22
Swine—		
II	1	14
III	1	11
Grain—I	5	81
Beekeeping—I	2	38
Vegetable—I	3	31
Nursery—I	1	6
Mixed Farm—I	1	16
TOTAL	41	582



In addition to workshops, seminars and short courses, farm management specialists deal directly with farmers to evaluate the cost effectiveness of irrigation systems and other similar crop production equipment.

Production Economics

The production economics program carries out ost and return studies for specific commodities r agricultural processes, develops and maintains data bank for economic co-efficients and factor osts and assists other branches within the minis- y in carrying out production economic analysis n selected demonstrations or research.

Program highlights included:

Consensus Data Studies—This inexpensive ıethod of researching production costs was uti- ed to obtain and publish 10 reports covering the llowing commodities: grain crops, alfalfa hay nd silage, grapes, field tomatoes, potatoes, veet corn, lettuce, cabbage, peppers and veal.

Agriculture Input Cost Study—Input costs and ailability of 46 items were surveyed monthly in three reporting regions within the province. Requests for specific time series data show an increase as the data bank expands.

Other specific studies included:

- A range-forest fertilization project in the interior to determine and demonstrate the feasibility of fertilizing native range.
- Hay production data in the interior related to timothy clover hay production and large round bale harvesting systems.
- A fertilizer crop correlation study continued, with joint funding from the Feed Freight Assistance Adjustment Fund Agreement.
- A zero till demonstration project, funded by ARDSA, continued. The Economics Branch assisted with the establishment of this ongoing demonstration and provided an economic analysis of the system.

Resource Economics

The resource economics program is designed to provide leadership and support to ministry staff involved with questions relating to resource allocation and use; to provide a methodological back-up to assist those carrying out benefit-cost analysis and to serve on various related task forces.

In 1981, the branch converted one of its positions to a resource economist in order to provide a focal point for leadership in this subject area.

Program highlights included:

- A preliminary analysis was completed on the proposed drainage system in the Pitt Meadows area. A second report was initiated during 1981 to examine the disadvantages occurring from a drainage system failure.
- A preliminary cost-benefit study was initiated to determine the feasibility of the proposed drainage system in the Hatzic Prairie area. This study was undertaken prior to an engineering study of the area required for an ARDSA-funded improvement project.
- Branch staff reviewed and advised the Agricultural Economics Department of the University of British Columbia regarding a preliminary land use study of the McMurdo Benches. This study, contrasting the return to land devoted to agricultural and forestry production, is expected to have an important impact on long-range land-use decisions in the Kootenays.
  Branch staff was involved in the determination of the agricultural potential in the Slocan Valley area. The project group determined that considerable agricultural potential exists and that a land-base be ensured to enable such development to occur.

Agriculture Statistics

The statistics unit of the Economics Branch supplies the British Columbia agriculture and food industry with relevant, timely and accurate data on the size and nature of the industry. This information is essential for good decision making and policy formulation (see Table III).

Table III Key B.C. Economic Indicators—Agriculture and Food

	1980	1981	Percentage of Change 1980–81
Human Population	2,645,500	2,714,400	+ 2.6
Food Processing	$2.4 bil.	$2.7 bil.	+12.5
Number of Farms	20,800	20,800	–
Cultivated Farmland	2.03 mil. ac.	2.05 mil. ac.	+ 1.0
Farm Expenses	$613.7 mil.	$764.2 mil.	+24.5
Farm Cash Receipts	$746.1 mil.	$884.7 mil.	+18.6
Milk Sales by Volume	463.0 mil. L.	476.0 mil. L.	+ 2.8
Poultry Sales	104.4 mil. lbs.	112.8 mil. lbs.	+ 8.0
Egg Production	62.5 mil. doz.	62.5 mil. doz.	–
Apple Production	463.5 mil. lbs.	412.0 mil. lbs.	–11.1
Vegetable Receipts	$53.9 mil.	$64.3 mil.	+19.3
Floriculture and Nursery	$40.7 mil.	$46.6 mil.	+14.5
Honey Production	3.9 mil. lbs.	4.6 mil. lbs.	+17.9
Cattle Numbers	749,500 head	773,000 head	+ 3.1
Pig Numbers	220,000 head	245,000 head	+11.4
Sheep Numbers	60,000 head	62,000 head	+ 3.3
Wheat Production	170 000 tonnes	125 000 tonnes	–26.5
Barley Production	220 000 tonnes	209 000 tonnes	– 5.0

Close liaison was maintained with Statistics anada and improved during the year through ıe use of MAILBOX, a computer-based method f sending and receiving correspondence. This ystem permits the rapid transmission of short ıessages at reasonable cost and was introduced) agricultural statisticians in Canada at the re-uest of British Columbia.

During 1981, the following factsheets and re-orts were produced:

- Agriculture Statistics Factsheets
- Crop Report
- Agri-Stats Factsheets
- Production and Consumption of Red Meats in B.C.

A number of special projects were conducted uring the year. These included assisting Statistics anada in an experiment to use satellite imagery) estimate canola acreages in the Peace River istrict and a report on the size and importance of ıe horse industry in B.C.

)ata-Processing

The Economics Branch provided expertise in e development of computer programs for the inistry and manages the ministry's data-pro-ssing budget and activities.

The total number of projects increased from 20 in 1980 to 35 in 1981. Highlights included expansion of terminal equipment at regional and district offices, introduction of the MAILBOX message switching system, and expansion of word-processing capabilities. Data-processing was used in the following programs: Dairy herd improvement analysis program, feed analysis program, hog marketing system, animal pathology project (there was a total of 8,380 submissions processed in 1981 which resulted in 23,804 reports), brands registration project (there was a total of 7,323 brand owners in 1981 and a total of 1,689 new certificates issued).

Special Projects

Staff of the branch provided input into many inter-agency committees and project groups including: the Feed Freight Assistance Adjustment Fund Agreement, Beef Industry Technical Committee, Expert Committee on Farm Management Services, B.C. Farm Business Management Advisory Committee and the Social Science Lead Committee.

Assistant Deputy Minister Financial Assistance Programs

ARDA Branch

Administration

The Agriculture and Rural Development Subsidiary Agreement (ARDSA) is managed and administered by the ARDA Branch. This federal-provincial program provides joint funding of up to $60 million from the federal Department of Regional Economic Expansion (DREE) and the B.C. Ministry of Agriculture and Food, committed in a five-year period which began August 1, 1977 and ends July 31, 1982.

The ARDSA program's over-all objectives are to increase the quality and quantity of British Columbia's food production and to create new employment opportunities in the agriculture and food industry.

ARDSA funds are directed into four key areas:

During 1981, ARDSA assistance of $7,260,827 was committed to 37 new projects . . . These projects represent new land development . . .

Part I—Research, planning, training and market promotion to help identify and develop new opportunities for the province's agricultural and food-oriented industries.

Part II—Coordinated resource manag ment—with the co-operation of other resou users—develops the grazing potential of Cro rangelands which are best suited for livestock

Part III—Primary resource developme funds for irrigation and drainage projects wh increase the agricultural productivity of la resources.

Part IV—Support service and community velopment funds assist secondary food p cessors and the agricultural support servi needed to improve rural economic stability and create jobs.

Installation of water supply and drainage systems for a cultural use, is one of a wide variety of project types funded the ARDSA program.

August 1, 1977 to December 31, 1981		Number of Projects	Total Project Cost	ARDSA Contribution
			$	$
Part I	Research, planning, training and market promotion	57	5,534,288	4,794,357
Part II	Coordinated Resource Development Management (Range Improvement)	87	14,531,817	13,075,377
Part III	Primary Resource Development (Drainage and Irrigation)	32	13,556,925	10,086,617
Part IV	Support Services and Community Development	142	66,000,354	15,866,881
Total		318	99,623,384	43,823,232

rogram Evaluation

The ARDSA program, now in its fifth year of eration in the province, was being subjected to igorous evaluation during 1981. The main pur- se of the evaluation is to establish a measure of benefits accrued to date from the projects ried out and to determine which types of pro- ts are returning the greatest benefits for the estments made.

This information will be available, coupled with eview of agriculture's goals and objectives, in termining the future direction for an ARDSA- e program in British Columbia and in directing most effective investments for the remainder the existing agreement.

ew Development, New pproaches, New Jobs

During 1981, ARDSA assistance of 260,827 was committed to 37 new projects. e ARDSA program from its inception has com- ted $43,823,232 to assist 318 approved pro- ts. These projects represent new land develop- nt through drainage, irrigation, and range provements, as well as new job creation and ny new approaches to problems in the B.C. d industry.

art I—Research, Planning, aining and Market romotion

Five projects were approved in 1981, for which RDSA contributed $354,512, bringing the total rt I ARDSA commitment to $4,794,356 for 57 jects. At year-end, a total of 23 projects were derway.

Two applied research and demonstration projects were approved. The B.C. Honey Producers' Association in conjunction with the Apiculture Branch, undertook a three-year project to select and produce an improved honeybee stock. Another project in queen and package bee production was also initiated.

The B.C. Seed Potato Growers' Association will demonstrate techniques of virus-free seed potato production to producers in the Pemberton and Cariboo seed potato control areas. This work involves the production of virus free mother plants and the propagation of stem cuttings, as well as support to growers in greenhouse operation and management.

Part II— Coordinated Resource Management Planning

ARDSA provided funds for $2.7 million of development work in 68 coordinated resource management plans and community pasture projects. The financial committment involved approximately $2 million on works scheduled for 1981/82, $500,000 on overdue works, and $200,000 on new projects.

Construction problems in the first year of the agreement caused ARDSA to begin 1981 with a $2.4 million backlog of uncompleted work, in addition to the $2 million of scheduled projects. Cash flow constraints permitted funding for only two new projects, at a cost of $350,000. Work was concentrated on overdue construction and resulted in completion of 20 projects, and reduced the backlog of work to about $1.9 million which will be funded over the next two years.

Proposals for new projects amounting to $5.9 million were received during the year, and will be considered for funding for the duration of the agreement.

n ARDSA funded diking project protects agricultural land ne Pemberton Valley Diking District and in the Mount Cie Indian Reservation.

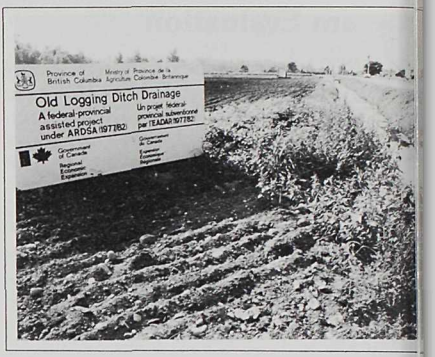
Staff members study proposals for land use under ARDSA's co-ordinated resource management planning program and consider the needs of present and potential users of the land.

Part III—Primary Resource Development

Main emphasis was placed on construction of previously approved projects, although six new projects were approved for a gross value of approximately $5 million of which ARDSA will fund 75 per cent. There were two drainage projects and one combination drainage irrigation project in the Fraser Valley, irrigation projects at Ashcroft and Vernon, and a diking project on the Similkameen River.

In addition to new construction projects, Part III helped fund feasibility studies for other potential projects at a cost to ARDSA of about $200,000. These could result in construction projects worth $5 million if approved.

Late 1980, and early 1981, was a time of escalating construction costs and Part III had to accept cost overruns on 11 projects totalling of $667,000 gross, $500,000 net. These expenditures and commitments bring Part III's shareable commitment to approximately $11 million.



An efficient drainage outlet system protects farmland in Surrey from the ravages of spring flooding.

Part IV—Support Services and Community Development

During the year, 19 projects with an estimated cost of $12.5 million were granted assistance of $1.67 million. Projects assisted included abattoirs, tree fruit and berry cooperatives, a jam factory, a lysozyme extraction plant and rural electrification projects.

ARDSA funds helped fund the freezer storage units (in background of picture) at Trans Pacific Fish Ltd. in Ucluelet, Vancouver Island. Workers strip the roe from herring to quick-freeze the fish with the new equipment.

Agricultural Credit Branch

The Agricultural Credit Branch has approved financial assistance to farmers under provisions of the *Agricultural Credit Act* and the *Agricultural Land Development Act* throughout 1981 in the following forms:

a) Provincial government guarantees to chartered banks or credit unions as supplement support security to loans made to farmers.

b) Reimbursement of a portion of the lo interest costs paid by farmers in 1980 loans from approved lenders to effectiv reduce the cost of farm loans.

c) Incentives in the form of additional reimb sement of interest paid on farm loans encourage farmers to participate in spec production programs in the province.

ain-damaged crop program for e South Coastal Region . . . was stablished to assist growers who ffered losses . . . as a result of cord rainfalls . . .

) The establishment of a Rain Damaged Crop Program for growers in the South Coastal Region who suffered severe losses as a result of record rainfalls in the spring of 1981.
) Direct loans to a maximum of $25,000 to finance the cost of work and materials relative to land development throughout the province.

uaranteed Loan rogram

n 1981, chartered banks and credit unions of province received provincial government rantees as support security on 36 farm loans. ese guarantees totalled $4,859,807. Farm optors involved in aquaculture and mariculture erprises were eligible for this form of assistance the first time in 1981. Since the inception of program in 1974, there have been 338 guarees placed, totalling $33,801,128.

One claim was made by a lender and approved der the guarantee covenant in 1981 for a total 50,000. To date 11 claims have been made der the program since 1974, totalling 6,355.

rtial Interest imbursement Program

he branch processed and approved 6,350 lications for partial reimbursement of loan inst costs incurred by farm operators in 1980. s resulted in benefits of $12,399,092.

he program reduced interest costs in 1980 to effective interest rate of approximately 12.36 cent or 2 per cent below the bank average ne lending rate for the year. An additional roved lender was added in 1981—the West- Indian Agricultural Corporation Limited. er approved lenders in the program are chard banks, credit unions, the Farm Credit Corporation, the Federal Business Development Bank and the Director of the Veterans' Land Act.

A total of $62,607,532 has been distributed to farm operators of British Columbia since the inception of this program in 1974.

Special Programs

Grapevine Assistance Program 1978–79

This program was initiated in 1979 to assist farm operators in re-establishing grapevines destroyed, or severely damaged, by frost in the winter of 1978–79. Financial assistance took the form of a reduction of loan interest costs to 4 per cent for the calendar years 1980–1982 based on eligible loans of $1,000 per acre per year.

Eleven farm operators participated in the program in 1981 receiving benefits of $16,900 relative to 1980 interest costs. Through this program, 216 acres of grapevines are being re-established. Ten participants remain in the program and expect reimbursement benefits for 1981 amounting to $58,000.

Over 200 acres of grapevines were re-established as a result of the special grapevine assistance program which was designed to help farmers re-establish vines lost by frost damage during the harsh winter of 1978-79.

Asparagus Production Incentive Program

This program to stimulate an increase in the production of asparagus in British Columbia was launched in 1980. Financial assistance took the form of reimbursement of all, or a portion of, the interest costs paid by the farmer over a four year crop establishment period. There are eight farm operators enrolled representing new asparagus

production on 255 acres. Eligible loans are based on $400 per acre. Reimbursement benefits paid in 1981 amounted to $3,213 and are expected to increase to $14,000 in 1982.

Rain-Damaged Crop Program—South Coastal Region

The program announced on August 28, 1981 was established to assist growers who suffered losses on eligible crops as a result of record rainfalls in the South Coastal Region. Eligible crops included vegetables and annually seeded forage crops not insurable under the Crop Insurance Program.

Financial assistance will be reimbursement of loan interest ranging from 25–50 per cent of the chartered bank average prime rate on those loans contracted for operating purposes. The eligible bank loans are based on 1981 crop acreages that could not be planted or harvested, or acreages on which non-insurable crops yielded less than 60 per cent.

To date, 118 farm operators are registered the program involving approximately $5.5 n lion in operating loans.

Agricultural Land Development Act (A.L.D.A.)

Major changes in this program in 1981 cluded increased funding of approximately million, an increase in the maximum loan limit $25,000 per farm operator from $15,000, a the adoption of an interest rate on loans whi equates to one-half of the chartered bank avera prime lending rate.

There were 613 contracts issued through t program in 1981 for a total value of $5,642,0 The program is to assist farmers by way of din loans in meeting the cost of work and materi relative to land development. ALDA continues be a poular program with loan requests far ceeding the available funding. This resulted in t closing of applications this year on May 31, 19 when the program became fully committed.

Crop Insurance Branch

The function of the Crop Insurance Branch is to administer the *B.C. Insurance for Crops Act.* Within the context of this Act, the objectives of the branch are:

1. To reduce the fluctuations in net income of individual producers who suffer crop losses due to weather and other uncontrollable factors.
2. To maintain an effective system for administration of crop insurance programs for selected commodities.
3. To reduce the need for ad hoc assistance programs in crop loss situations.

The crop insurance program involves the participation of the farmer, the provincial government and the federal government.

The farmer and the federal government each contribute 50 per cent of the total cost of the premium involved, while the provincial government contributes the cost of administering the program.

The six groups of crops covered by existing crop insurance plans include: berries, forage, grain, grapes, tree fruits and vegetables.

Weather

The winter was generally mild, with lower th average rain and snowfall. There was no sign cant damage to grape vines or fruit trees, l there was some local killing of forage stands in Cariboo.

There were abnormally heavy and frequ rain showers in the Fraser Valley during the spr and early summer. This caused losses to str berry and raspberry plantings when norma suitable soils became water-logged. The "set the blueberry crop was also adversely affected the wet conditions.

The crop insurance program involves the participation of the farmer, the provincial governmer and the federal government.

n the Okanagan, the weather during cherry king was unfavourable resulting in widespread nsplitting. Heavy and repeated hailstorms re-ted in the Summerland-Naramata areas, with ttered storms further south and in Creston, o caused crop damage and loss.

While the southeast of the province was un-lly wet, the Peace River area was extremely between spring cultivation and mid-August.

Recorded rainfall in the Peace River Region was 68 per cent of the 1980 level. Severe hail-storms were reported in the South Peace on July 27th and August 27th. These two storms ac-counted for most of the damage.

Good weather in the fall allowed most of the harvesting to be completed without delay.

tatus of Crop Insurance Fund at March 31, 1981

	March 31/81	March 31/80
	$	$
Due from Government of Canada	—	190,668.75
nterest on Fund	(219,001.45)*	—
Grain Program	(1,222,830.54)	(784,774.05)
Tree Fruit Program	(2,510,201.26)	(2,182,064.56)
Berry Program	(610,607.92)	(416,864.41)
Grape Program	147,640.87	330,972.20
Forage Program	97,722.65	20,406.44
Vegetable Program	(78,599.06)	(131,329.72)
Crop Insurance Fund Balance	$4,395,876.71	$2,972,985.35

racket denotes credit.

Ne: This statement shows the actual status of the Crop Insurance Fund as of March 31, 1981 by fiscal year and on a cumulative basis. The above figures will not necessarily agree with those of the individual program which are by crop year, since the time periods do not correspond.

ummary of Loss Experience

	Per Cent Loss to Premium 1980	Cumulative
oss experience for all programs	68.46	89.93
rain Program	39.87	101.57
ree Fruit Program	78.26	81.66
erry Program	25.10	92.00
rape Program	33.02	117.36
orage Program	189.28	146.14
egetable Program	171.22	60.95

Administration

	April 1, 1980 to March 31, 1981	April 1, 1979 to March 31, 1980
Provincial Administrative Costs	$555,445	$515,239
Federal Government Premium Contribution	1,782,023	1,652,464
Administration Cost to Federal Contribution	31.17%	31.18%
Administration Costs to Total Coverage	1.35%	1.30%
Administration Costs to Total Claims	23.20%	15.03%

Farm Income Insurance Branch

The Farm Income Insurance Branch administers the income insurance program comprised of a number of commodity plans which protect producers against income loss due to low market returns or rapid changes in farm input costs. The plans are based on the insurance concept and require that sufficient premiums be submitted to cover the indemnities paid over the long term. Premiums are shared between the participant and the Provincial Government. Producer participation is voluntary.

Plans for 12 commodities were implemented in the period 1973 to 1977, most for a term of five years. All of the 12 original plans have now expired and new, ongoing plans have been implemented for nine commodities.

The total cost for all plans in the 1981 calendar year was $21,853,993. This consisted of $15,943,514 of government premiums and a further $5,910,479 paid from reserve funds established under the plan.

The sheep plan provided coverage . . . for 130 producers while the blueberry plan provided coverage for 129 producers and the greenhouse vegetable plan covered 90 producers.

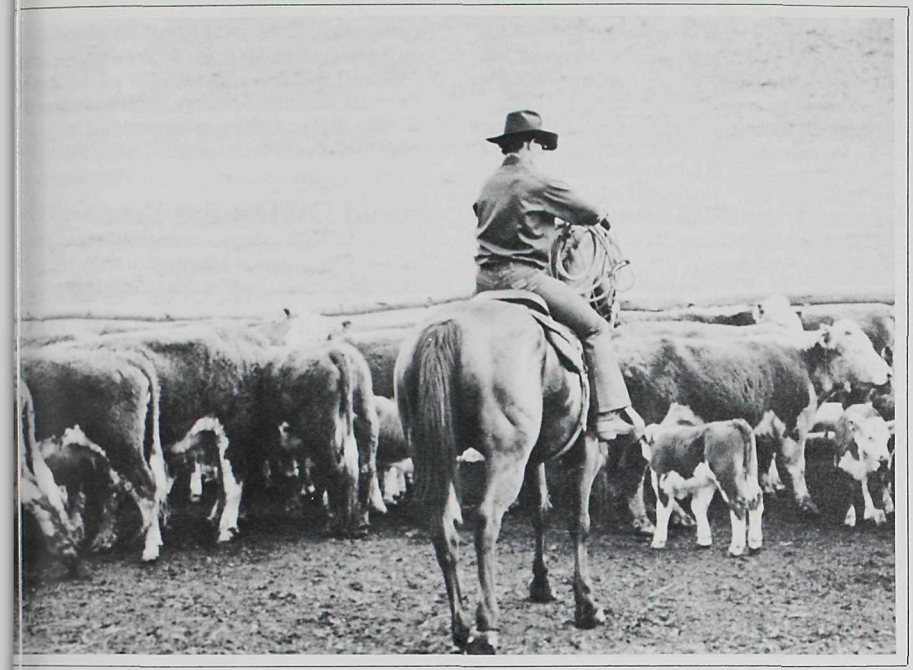
Three new plans were established in 1981 u
der the terms and policy of the new farm inco
insurance agreements for a "second generatio
of plans—greenhouse vegetables, (tomato, l
glish cucumbers and white spine cucumbe
blueberry, and sheep plans. The other plans
for beef, tree fruits, swine, strawberries for p
cessing, vegetables for processing (peas, bea
and corn) and broiler hatching eggs.

The sheep plan provided coverage effect
January 1, 1980 for 130 producers while
blueberry plan provided coverage for 129 p
ducers and the greenhouse vegetable plan c
ered 90 producers. Work is continuing on
development of second generation plans for
potato and raspberry commodity groups.

To the end of the calendar year, there w
4,105 participants registered in nine new pla
The enrolment included:

Beef	1,55
Blueberry	12
Broiler Hatching Egg	4
Greenhouse	9
Potatoes	pendin
Processing Strawberries	7
Processing Vegetables	4
Raspberries	pendin
Sheep	13
Swine	25
Tree Fruit	1,78

The farm income insurance program provi
a significant level of protection to producers fr
low market returns or rapidly increasing in
costs beyond the individual participant's cont



As a result of low returns, beef producers benefited significantly from the farm income insurance program during 1981. Over 1,500 beef producers were enrolled.

arm Products inance Branch

he Farm Products Finance Branch is responsi- ofor a broad financial assistance program un- dthe *Farm Product Industry Act*. It provides the gcultural and food processing industry with os, loan guarantees, grants and financial ad- viry services.

nancial Assistance

ctivity increased significantly during 1981 wi 61 organizations requesting financial assis- ta e, a 35 per cent increase over 1980. Financial e minations were undertaken on 37 proposals re lting in approval of assistance totalling approximately $2.4 million for 10 organizations. Higher interest rates, raw material and labor costs caused serious financial problems for agricultural firms.

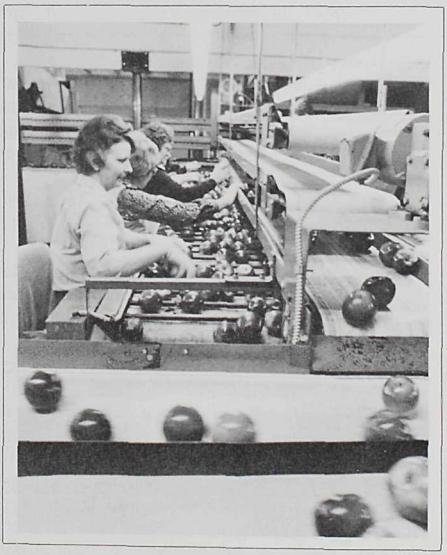
Four guarantees totalling $3.6 million were terminated. One for the British Columbia Development Corporation/South Peace Dehy-Products Ltd. operation, in the amount of $500,000 was paid up. The three others were cancelled at the request of the organizations concerned because their financial circumstances had improved. Those organizations were: 1) Tree Fresh CA Storage Ltd., Kelowna, $2,000,000, guarantee approved in 1975; 2) Keremeos Growers' Co-oper-

ative Association, Keremeos, $780,000, guarantee approved in 1975; 3) Top Shelf Feeds Inc., Duncan, $300,000, guarantee approved in 1975. These guarantees were required because the organizations could not arrange bank loans on reasonable terms due to lack of proven successful financial performance or adequate s curity being available.

A total of $2,377,535 was provided in dire financial assistance during 1981 with a total $6,384,793 in assistance outstanding at the e of the year.

Direct Financial Assistance Approved During the Year

	Guarantees	Loans	Grants	Total
	$	$	$	$
Pan Ready Poultry (1980) Ltd.	1,000,000	—	—	1,000,00
British Columbia Dev. Corp.	500,000	—	—	500,000
S.O.D.I.C.A.	500,000	—	—	500,000
Rabbit Producers' Assn. of B.C.	—	150,000	—	150,000
B.C. Fruit Growers' Test Orchard	—	—	113,785	113,785
Kootenay Dehydrators Ltd.	—	—	91,250	91,250
Royal City Foods	—	—	9,700	9,700
B.C. Cattlemen's Association	—	—	4,800	4,800
B.C. Strawberry Growers' Assn.	—	—	4,000	4,000
Sun Dew Foods Ltd.	—	—	4,000	4,000
TOTAL	2,000,000	150,000	227,535	2,377,53



Under the farm products finance program, numerous food processing firms are given financial help and advice.

Branch activites of a particular interest includ the following programs:

Pan Ready Poultry (1980) Ltd.

Branch staff met with the Bank of Montreal, t B.C. Turkey Marketing Board and the fede Agricultural Products Board with the result t successful re-financing allowed the plant, wh had gone into receivership, to re-open. A guara tee of $1,000,000 was provided to the bank operating funds provided to the company.

The Creston Valley Dairymen's Association, concerned over the future of the dairy industry, requested a study be undertake in their area. The branch retaine a consultant for an in-depth investigation . . .

ıco Poultry Cargill Ltd.

ıtaff was actively involved in efforts by the ıltry industry to keep this plant open since it cessed a substantial portion of the B.C. broiler :ken, turkey and spent fowl production. The ıt unfortunately closed later in the year caus- financial difficulties for the poultry industry.

ıth Peace Dehy-Products Ltd.

ministry has been involved in the settlement his company's financial affairs and was re- ed to pay $500,000 to the British Columbia velopment Corporation, representing one half losses incurred in providing financing to the ıpany.

ecial Studies

he Creston Valley Dairymen's Association, cerned over the future of the dairy industry, requested a study be undertaken in their area. The branch retained a consultant for an in-depth investigation and a report will be evaluated early in 1982.

The branch retained a consulting industrial engineer to investigate the economics of using wood waste as an alternative fuel to natural gas in drying alfalfa at dehydration plants. The study was undertaken because increased fuel costs threatened the operation of Kootenay Dehydrators Ltd. in Creston.

Eight other investigations were also financed.

Product Development

Staff members held discussions with members of the British Columbia Research Council with the intention of developing a basis for sharing costs and criteria for a program of new product development.

roperty anagement Branch

he Property Management Branch manages ırms and agricultural properties administered he government.

ase Program

terest of tenants in purchasing leased proper- edeclined when interest rates climbed to high ıs.

ecause of the great variation occurring in rperty values during the year, it was necessary arry out an extensive number of land ap- ısals to maintain current information for re- ing rental rates, and for the sale of property. ıe total number of properties involved in the ram increased to 130 from 129. Although e ral properties have been sold, eight new farm ı were added when 300 acres of the Langley ıs property, which had been held on a yearly basis, were made available. Revenue from sale of properties amounted to $1,411,107. enue for rentals and sale of improvements increased to $477,922, reflecting the result of the 26 rental reviews and numerous improvement evaluations which occurred during the year. During this same period 12 new leases were established.

The British Columbia Beef Cattle Test Station 1980-81 test period accommodated 161 privately-owned bulls . . .

Development of special project properties continued throughout the year. Arrangements were made to turn over 126 hectares of non-agricultural land and the lodge on the Minnekhada property to the Greater Vancouver Regional District for the establishment of a public nature park.

The Spray Irrigation Advisory Committee associated with the Vernon effluent program on Prop-

erty No. 49 set up various field crop trials to determine appropriate crops suited to effluent irrigation.

The branch co-operated with regional staff and the lessee of Property No. 48 at Armstrong to establish, on behalf of the North Okanagan Farmers' Institute, a research plot area to study regional field crop varieties. Arrangements were made with Cloverdale Lettuce Co-operative, tenant on Property No. 6, to allow construction by Western Greenhouse Growers Co-operative of a new storage and distribution facility on the property. A farm produce market was built by the tenant on Property No. 47 in Saanich on Vancouver Island.

During the year, 18 major appraisals were completed which included detailed projects on land and improvement values at Colony and Tranquille Farms.

The branch, at the request of the Agricultural Land Commission, undertook major land planning surveys and reports, including: The Bowen Island Study, the Big Bend Area Report, Imperial Development Lands in Delta, Boundary Bay Airport Land Study, and the Kamloops A.L.R. Fine-Tuning Study.

A farm produce market was built by the tenant on branch-administered land in Saanich.

Farm Operations Program

Excessive rainfall during the spring and early summer caused many cropping and management difficulties.

East Kootenay Ranches

A total of 2,818 animal-unit-months (A.U.M.) were provided during the 1981 grazing season to cattle directed to the ranches by the Grazing Division of the Ministry of Forests. In addition, 2 A.U.M.s of surplus pasture were sold on the ope market.

An additional 19 hectares on the Steepl Ranch were reworked and seeded to an irrigate pasture-seed mixture and 34 hectares at the Poi Vee Bar Ranch were seeded to a dry land gra species.

Research and demonstration projects unde way at the Steeples Ranch in 1981 included: Forage variety trials and seeding rates; 2) Thi year of the cattle weighing project; 3) A he health program for cattle; 4) Demonstration of th effect on cattle weight from the use of the grow hormone, synavex.

The annual field day, which was well attende took place July 30.

Institution Farms

Production levels have been maintained on th institution farms during the year despite dif culties caused by the weather.

The demand for breeding stock from the ar mal production units remained constant althou the drop in the market price of swine caused downward demand trend.

The swine herds at both farms were enrolled the B.C. Certified Swine Herd Health progra established by the Veterinary Branch.

The management committees were active examining project proposals of a research ar demonstration nature. Significant additions to a tive projects included: 1) Seed potato certificatio disease detection in co-operation with Agricultu Canada and the Field Crops Branch; 2) B.C Institute of Technology student practicum pr gram; 3) Irrigated pasture management trials co-operation with Thompson-Cariboo region staff and; 4) Assessment of the BPAC-P swi vaccine in co-operation with the Veterina Branch.

Other projects that received approval in prin ple from the committees were: 1) Sheep pastu management trials—South Coastal regional sta 2) Dairy cattle breeding efficiency project—Un versity of British Columbia; 3) Use of Tranqui livestock by Cariboo College for the Anim Health Technology course.

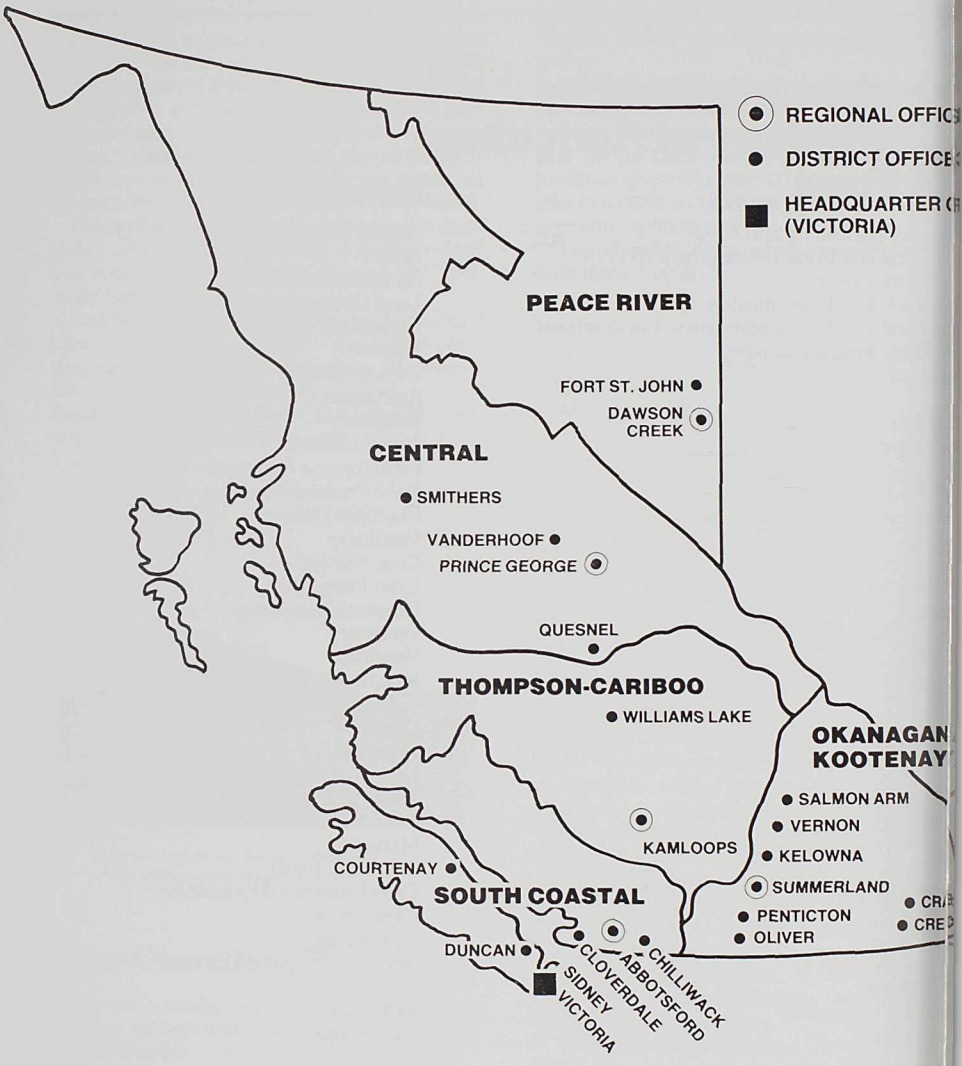
The British Columbia Beef Cattle Test Statio 1980–81 test period accommodated 161 p vately-owned bulls achieving a station avera gain of 3.17 pounds per day.

A major review of all farm operations was co ducted. This process included a report from a outside consultant followed by the establishme

ı ministry farms review committee. The final ɔmmendations, which concerned the opera- ıs of Colony and Tranquille Farms, along with the East Kootenay Ranches, was to result in an orientation of activities to more directly address the ministry's goals and objectives.

cts Administered by .C. Ministry of Agriculture nd Food

	Responsibility
istry of Agriculture and Food	Deputy Minister
cultural and Rural Development (B.C.)	ARDA
cultural Credit	Agricultural Credit
cultural Land Commission	Land Commission
cultural Land Development	Agricultural Credit
cultural Produce Grading	Marketing
ologists	Deputy Minister
	Apiculture
le Horn	Veterinary
n Distress Assistance	Deputy Minister
n Income Insurance	Farm Income Insurance
n Product Industry	Farm Products Finance
ners' and Women's Institutes	Executive Officer
Farm	Veterinary
isshopper Control	Crop Protection
rance for Crops	Crop Insurance
stock	Livestock/Veterinary
stock Brand	Veterinary
stock Disease Control	Veterinary
stock Industry	Veterinary
stock Lien	Veterinary
stock Protection	Livestock
stock Public Sale	Veterinary
garine	Dairy
t Inspection	Veterinary
i Industry	Dairy/Milk Board
ral Products Marketing (B.C.)	Marketing
macists	Veterinary (part)
t Protection	Crop Protection/Horticulture
l Grower	Field Crops
l Potato	Field Crops
Conservation	Soils
inarians	Veterinary
inary Laboratory	Veterinary
d Control	Field Crops


REGIONAL OFFIC
DISTRICT OFFICE
HEADQUARTER (
(VICTORIA)
PEACE RIVER
FORT ST. JOHN
DAWSON CREEK
CENTRAL
SMITHERS
VANDERHOOF
PRINCE GEORGE
QUESNEL
THOMPSON-CARIBOO
WILLIAMS LAKE
OKANAGAN
KOOTENAY
SALMON ARM
VERNON
KELOWNA
SUMMERLAND
PENTICTON
OLIVER
KAMLOOPS
COURTENAY
SOUTH COASTAL
DUNCAN
CLOVERDALE
ABBOTSFORD
CHILLIWACK
SIDNEY
VICTORIA

ffices of the ritish Columbia Ministry of griculture and Food

AD OFFICE: Victoria—808 Douglas Street, Nootka Court,
ling Address: Parliament Buildings, Victoria, V8W 2Z7, Phone: 387-5121

strict Offices

otsford:	205, 33780 Laurel Street, V2S 1X4, 859-5281 Engineering Branch, 33832 South Fraser Way, V2S 2C5, 853-6451 Poultry Test Station, 32916 Marshall Road, V2S 1K2, 853-3671 Veterinary Lab, (Box 100), V2S 4N8, 853-1161
naby:	Dairy Lab, 3705 Willingdon Avenue V5G 3H3, 434-3326
lliwack:	5, 8635 Young Road South V2P 4P3, 795-9471
verdale:	17720—57th Avenue, Surrey V3S 4P9, 576-2911
rtenay:	209, 420 Cumberland Road V9N 5M6, 338-7465
nbrook:	202, 135—10th Avenue South V1C 2N1, 489-3521
nton:	456 Northwest Boulevard V0B 1G0, 428-5371
rson Creek:	1201—103rd Avenue V1G 4J2, 782-5931
ican:	238 Government Street V9L 1A5, 746-6183
St. John:	201, 9711—100th Avenue V1J 1Y2, 787-1111
ıloops:	162 Oriole Road V2C 4N7, 374-3614
ewna:	1873 Spall Road V1Y 4R2, 860-3588
ıgley:	210, 20316—56th Avenue V3A 3Y7, 530-5381
ıer:	Courthouse, (Box 940), V0H 1T0, 498-2420
ıicton:	477 Martin Street V2A 5L2, 493-2749
ıe George:	Experimental Farm (RR 8), RMD7, V2N 4M6, 963-9685
tsnel:	208, 350 Barlow Avenue V2J 2C1, 992-5591
ıon Arm:	Samara Building (Box 639), V0E 2T0, 832-2088
key:	Building 20, Saanichton Research Station, 8801 East Saanich Road V8L 1H3, 656-0941
nhers:	Government Building, Bag 5000, V0J 2N0, 847-4411
merland:	Research Station (Box 198), V0H 1Z0, 494-0401
ley:	Food Information Services, Marketing Branch, 10344 East Whalley Ring Road V3T 4H4, 584-7691
alerhoof:	Church Avenue (Box 987), V0J 3A0, 567-2111
eon:	4607—23rd Street V1T 4K7, 545-1387
ıms Lake:	540 Borland Street V2G 1R8, 392-6261

Queen's Printer for British Columbia ©
Victoria, 1982

Published by Authority of
the Minister of Agriculture and Food
Victoria, British Columbia

ISBNO-7719-8624-6