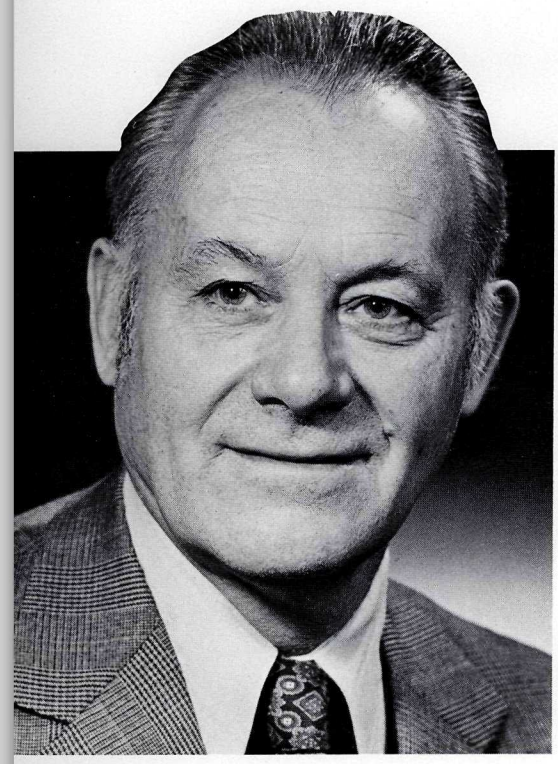

To Colonel the Honourable
HENRY P. BELL-IRVING, D.S.O., O.B.E., E.D.
Lieutenant-Governor of the Province
of British Columbia

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit for your consideration the Annual Report of the Ministry of Agriculture for the year 1978.

Cyril M. Shelford
Minister of Agriculture

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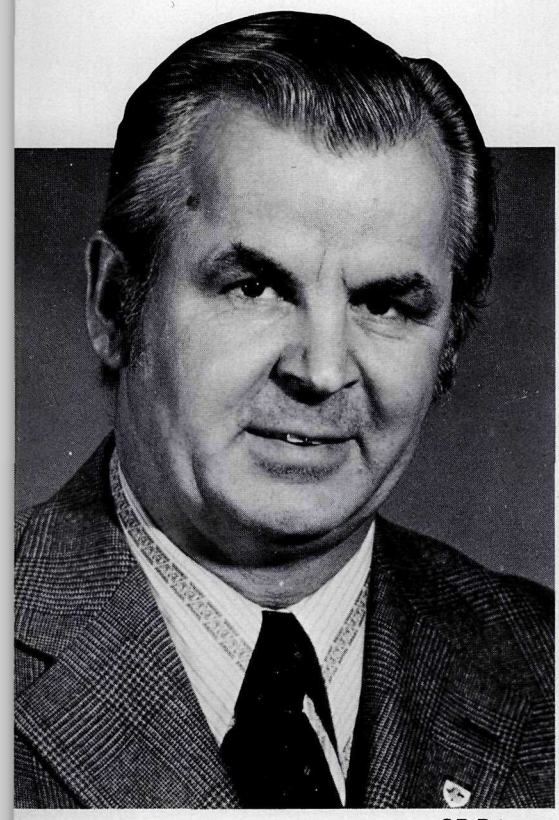


S.B. Peterson

Report of the Deputy Minister of Agriculture

To the Honourable Cyril Shelford
Minister of Agriculture

Sir:

I am pleased to present the 1978 Annual Report of the British Columbia Ministry of Agriculture. The report summarizes activities of your Ministry for the 12 months ending December 31, 1978.

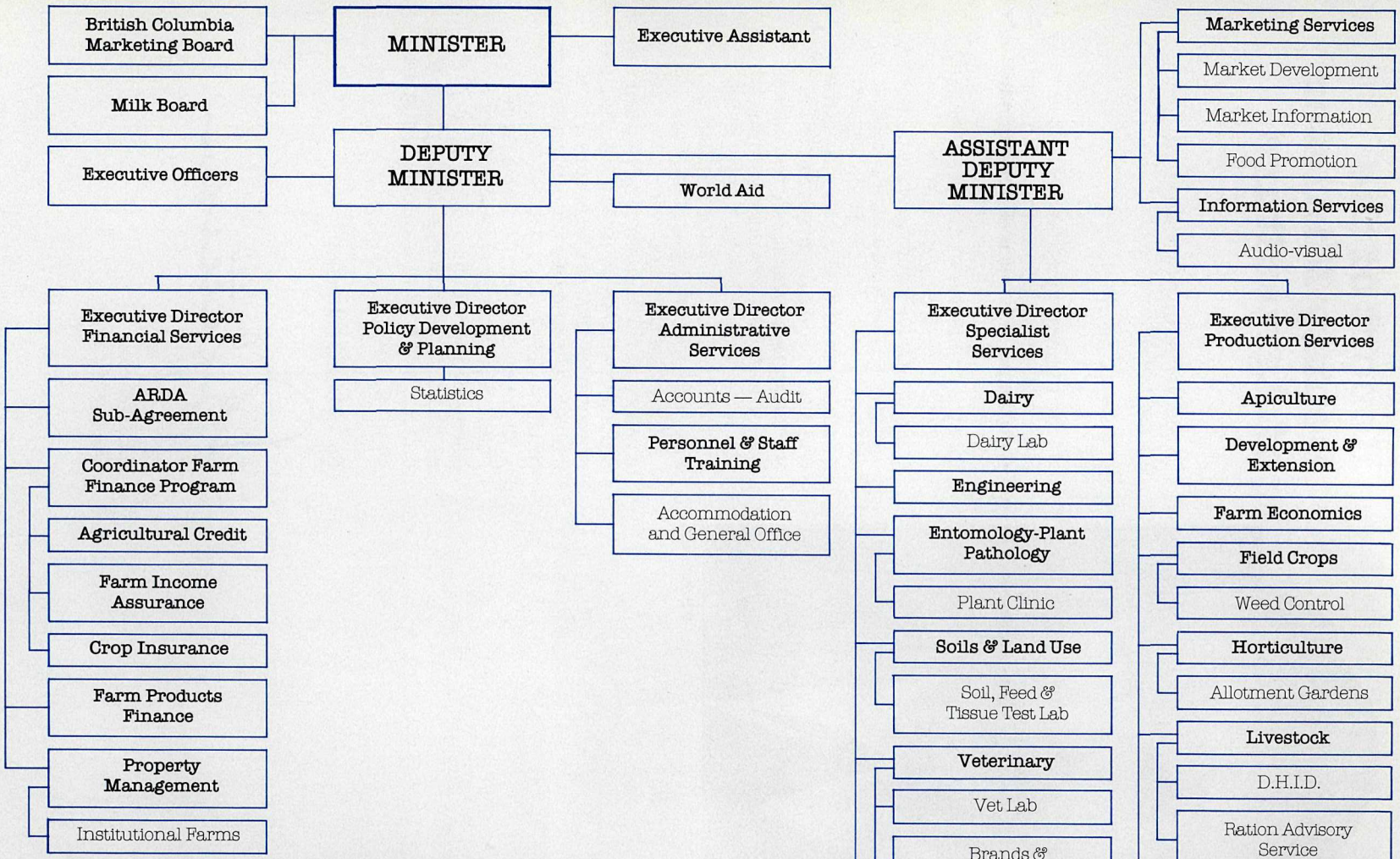
During the year, your staff and executive actively pursued new markets and carried out programs which, to some extent, reflected on the previous year's groundwork such as the signing of the $86 million ARDSA agreement. Much of the planning previously carried out has been transposed to concrete projects which will have very noticeable impact in the foreseeable future. The year could be marked as one of implementation.

Many new programs were introduced to advance the awareness of B.C. agriculture among the urban public, convey the latest research to farmers and ensure a more stable food market for the consumer and producer alike.

In general, British Columbia farmers benefited from a reasonably stable food and agriculture industry. The Ministry of Agriculture played a significant role to that end and will continue to do so during the coming year.

Respectfully submitted,

S.B. Peterson
Deputy Minister



British Columbia Ministry of Agriculture

Ministry Executive and Branch Heads 1978

Minister ..... **Hon. Cyril M. Shelford**
(appointed Dec. 4/78 to succeed Hon. James J. Hewitt)
Deputy Minister ..... **S.B. Peterson**
Assistant Deputy Minister ..... **E.M. King**

Director, Administrative Services ..... **J.F. Newman**
Director, Financial Services ..... **I.C. Carne**
Director, Policy Development and Planning ..... **C.J.N. Gibbs**
Director, Production Services ..... **R.L. Wilkinson**
Director, Specialist Services ..... **R.J. Miller**

Agricultural and Rural Development ..... J.R. Steele
Agriculture Credit ..... M.K. Thompson
Apiculture ..... J. Corner
Crop Insurance ..... P. Humphry-Baker
Dairy ..... D.J. Blair
Development and Extension ..... M.G. Oswell
Engineering ..... T.A. Windt
Entomology-Plant Pathology ..... H.J. O'Reilly
Executive Officer ..... P.H. Pettyfer
Farm Economics ..... B.A. Hackett
Farm Finance Programs ..... J.E. Hall (Coordinator)
Farm Income Assurance ..... W.F. Morton
Farm Products Finance ..... J.B. Phillips
Field Crops ..... J.V. Zacharias
Horticulture ..... A.C. Carter
Information Services ..... R.A. Sera
Livestock ..... J.A. Pelter
Marketing Services ..... D.A. Rugg
Poultry ..... C.W. Wood (retired Oct. 31/78)
Property Management ..... B.R. Richardson
Soils ..... A. Schori (resigned Sept. 1/78)
Veterinary ..... Dr. A. Kidd (retired Mar. 18/78)
Youth Development ..... D.E. Freed

Distribution of Farm Cash Receipts - 1978 *

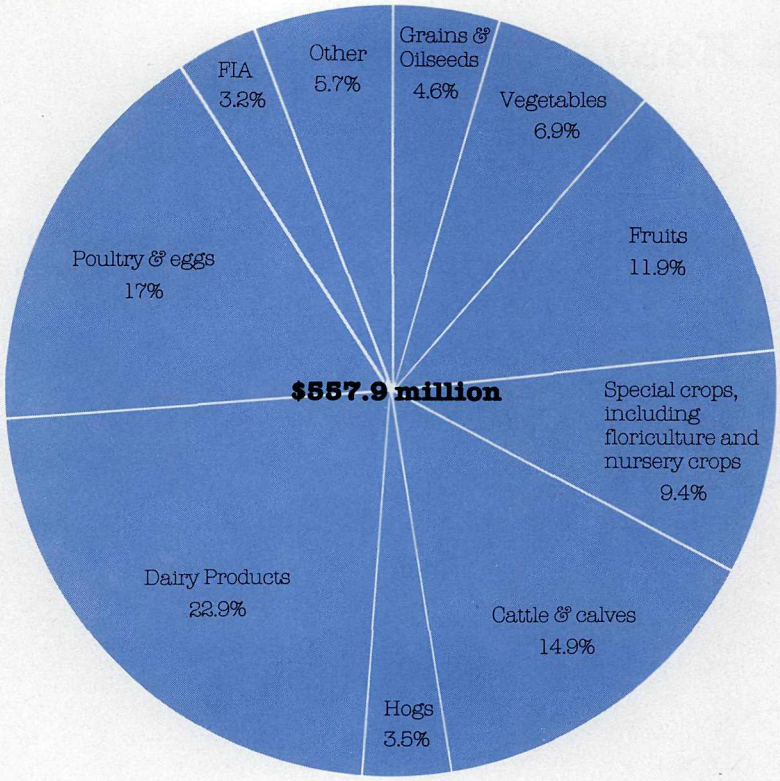


Table I

	$ mil.	per cent
Grains and oilseeds	25.8	4.6
Vegetables	38.6	6.9
Fruits	66.5	11.9
Special crops, including floriculture and nursery crops	52.4	9.4
Cattle and calves	83.4	14.9
Hogs	19.4	3.5
Dairy products	127.5	22.9
Poultry and eggs	94.9	17.0
FIA (Farm Income Assurance)	17.5	3.2
Other Cash Receipts	31.9	5.7
	557.9	100.0

*Source: Statistics Canada

1978 Agricultural Review

Farm Cash Receipts

Financially, many British Columbia farmers experienced a good year in 1978. Farm cash receipts from crop and livestock sales totalled $525.5 million, an increase of 16 per cent over 1977. Other cash receipts, including supplementary, deficiency and stabilization payments, totalled $32.4 million, down by 33.5 per cent from the 1977 level. This resulted in a net increase of 11.2 per cent in 1978 total cash receipts from the previous crop year.

Increased total cash receipts were due to higher returns from crops and livestock. Receipts from rapeseed increased dramatically while returns from grain crops decreased slightly. Vegetable returns declined but fruit and special crop returns rose modestly. All items under livestock and livestock products showed increased returns, most significantly hogs, cattle and calves, and sheep and lambs. For specific data, refer to Table II.

As shown on the preceeding graph, dairy products, horticulture crops, poultry and eggs, and cattle and calves were the largest sectors in terms of farm cash receipts during 1978.

Farm Operating Expenses

Total farm operating expenses and depreciation charges in British Columbia increased by 8.7 per cent to $486[1] million in 1978. Significant increases of 15 per cent occurred for building depreciation and 14.1 per cent for machinery expenses. As well, interest on financial indebtedness rose by 17.3 per cent. However, the B.C. partial interest reimbursement program paid B.C. farmers $4,385,301 during 1978 to alleviate interest charges on farm loans. There were minor increases of two per cent for feed and 3.6 per cent for other crop expenses.

For further details, see Table IV.

Farm Net Income

Total farm net income rose by 12.9 per cent to $205 million in 1978.

Total cash receipts and income in kind (value of products consumed on the farm) increased by 11.2 per cent and 8.4 per cent respectively. At the same time, farm operating expenses and depreciation charges increased by 8.7 per cent. Although realized net income went up by 15.5 per cent, it was offset by a decline in the value of farm inventory.

For further details, see Table V.

Food Processing

The estimated value of agricultural commodities marketed by British Columbia food and beverage manufacturing firms in 1978 came to $1,712 million. This was an increase of 12 per cent over the $1,527 million value for 1977.

As at July 1978 there were 461 firms processing foods and beverages in British Columbia. See Table III.

Retail Food Prices

B.C. retail food prices increased by 11.7 per cent in 1978. Significant price increases occurred for beef, pork and fruit.

Although food prices increased, a survey of eight major Canadian cities showed that Vancouver residents had an overall higher gross disposable income after food costs.[2] Calculations from Statistics Canada data show that in 1977, on the average, Canadians spent only 15 per cent of their personal disposable income on food, less than almost any country in the world.

---

[1] Estimate from Canadian Agricultural Outlook Conference 1978.

[2] Statistics Canada

Table II Farm Cash Receipts, 1977-1978, British Columbia

	— thousands of dollars —		
	1977	1978 Preliminary	% Change 1978/1977
Wheat	4 570	4 230	- 7.4
Oats	2 778	1 814	- 34.7
Barley	15 003	11 397	- 24.0
Western Grain Stabilization Payments	-	1 100	-
Rapeseed	3 638	7 300	+ 100.7
Potatoes	12 419	12 500	+ 0.7
Fruits	52 150	66 468	+ 27.5
Vegetables	26 986	26 162	- 3.1
Floriculture & Nursery	28 000	31 500	+ 12.5
Other Crops	21 216	20 894	- 1.5
Total Crops	166 760	183 365	+ 10.0
Cattle & Calves	59 583	83 464	+ 40.1
Hogs	12 983	19 368	+ 49.2
Sheep & Lambs	791	876	+ 10.7
Dairy Products	117 890	127 465	+ 8.1
Poultry	46 965	54 989	+ 17.1
Eggs	38 544	39 898	+ 3.5
Other Livestock & Products	9 572	16 104	+ 68.2
Total Livestock & Products	286 328	342 164	+ 19.5
Forest Products	4 051	5 899	+ 45.6
Farm Income Assurance Program	32 664	17 519	- 46.4
Dairy Supplementary Payments	8 411	6 825	- 18.9
Deficiency Payments	3 624	2 176	- 39.9
Total Cash Receipts	501 838	557 948	+ 11.2

Source: Statistics Canada January 1979.

Table III Number of Food and Beverage Industries British Columbia - 1978

Slaughtering & Meat Processing	80	Biscuit & Confectionary Manufacturers	10
Poultry Processors	17	Bakeries	32
Fish Products Industry	111	Sugar & Honey Processors	12
Fruit & Vegetable Canners, Preservers, Frozen Fruit & Vegetable Processors	59	Miscellaneous Food Processors	38
Dairy Products Industry	28	Soft Drink Manufacturers	19
Flour & Breakfast Cereal Processors	7	Distilleries	5
Feed Industry	31	Breweries	7
		Wineries	5
		Total	461

TABLE IV
British Columbia Farm Operating Expenses

	— thousands of dollars —		
	1977	1978 Preliminary	% Change 1978/1977
Taxes	18 476	20 000	+ 8.2
Gross Farm Rent	9 228	9 500	+ 3.8
Wages to Farm Labour	66 606	70 800	+ 6.3
Interest on Indeptedness	54 806	64 300	+ 17.3
Total Machinery Expenses	42 422	48 400	+ 14.1
Fertilizer & Lime	14 657	16 100	+ 9.8
Other Crop Expenses	16 564	17 200	+ 3.8
Feed	91 730	93 500	+ 1.9
Other Livestock Expenses	5 142	5 500	+ 7.0
Repairs to Buildings	10 256	11 200	+ 9.2
Electricity & Telephone	9 710	10 800	+ 11.2
Miscellaneous	25 957	26 700	+ 2.9
Total Operating Expenses	365 554	394 000	+ 7.8
Depreciation on Buildings	44 870	51 600	+ 15.0
Depreciation on Machinery	36 639	40 200	+ 9.7
Total Operating Expenses & Depreciation Charges	447 063	486 000	+ 8.7

Source: Statistics Canada

January 1979

TABLE V
British Columbia Farm Income Summary

	— thousands of dollars —		
	1977	1978 Preliminary	% Change 1978/1977
Total Cash Receipts	501 838	557 948	+ 11.2
Income-In-Kind	122 648	133 000	+ 8.4
Realized Gross Income	624 486	690 948	+ 10.6
Less: Operating and Depreciation Charges	447 063	486 000	+ 8.7
Realized Net Income	177 423	204 948	+ 15.5
Value of Inventory Change	4 125	-24	- 100.6
Total Net Income	181 548	204 924	+ 12.9

January 1979

Executive Officer

The Executive Officer is responsible for the consolidation of legislative matters within the ministry.

In 1978, 70 Orders-in-Council were processed relating to 17 Acts. During the 1978 session of the Legislative Assembly, the following agricultural legislation was enacted:

Bill 24 - Natural Products Marketing (British Columbia) Amendment Act. This amendment was necessitated by a judgement of the Supreme Court of Canada that declared invalid section 2(2) of the Federal Agricultural Products Marketing Act. The amendment also permits a federal agency to trade within the province and validates the collection of levies already made.

Bill 40 - Miscellaneous Statutes Amendment Act, 1978. This Act made minor amendments to a number of others including three Acts under the jurisdiction of the Ministry of Agriculture. They are:

Agrologists Act.

The amendment provides authority for the membership fee to be set by by-laws.

Farmers' and Women's Institutes Act.

The amendment provides flexibility to the constitution of the Provincial Board of Directors, and recognizes that the provincial convention is no longer held every two years.

Farm Products Industry Improvement Act.

This amendment allows for payment of certain professional services needed to examine proposals or review operations of an agricultural enterprise. It also alters the conditions required for certain types of loans.

The Executive Officer served as secretary to the British Columbia Agricultural Aid to Developing Countries Advisory Committee. During the fiscal year 1977/78, the committee recommended support for 46 projects in 28 countries sponsored by 25 charitable organizations. A similar number of projects will have been supported by the end of the 1978/79 fiscal year.

The Executive Officer was responsible for the administration of the ministry's policy of financial assistance to many agricultural associations. Under this policy, grants were given for prize money, judges' expenses and capital improvements to fair and exhibition grounds. Financial assistance was also given towards the operating expenses of the Provincial Women's Institutes, District Farmers' Institutes, and other associations. As Superintendent of Farmers' Institutes, the Executive Officer provided liaison services between institute members and the ministry and organized the annual meeting of the Farmers' Institute Advisory Board.

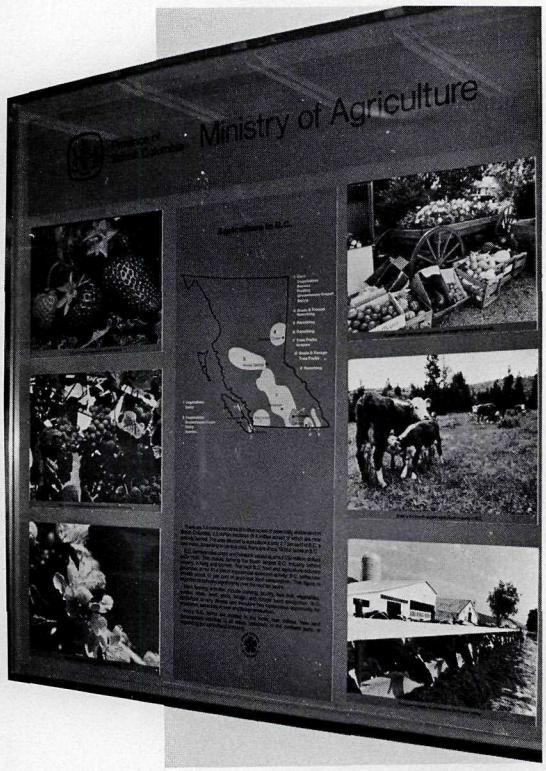
Additional duties of the Executive Officer included that of secretary at monthly senior staff meetings and secretary to the B.C. Agricultural Services Coordinating Committee. Through the direction of six lead committees, BCASCC maintains a watch on agricultural developments in the province and encourages research to overcome problems of importance to the agricultural industry.

Assistant Deputy Minister

Information Services

The Information Branch acts primarily as the communications arm of the ministry. During 1978, it was actively involved in the preparation of technical publications, advertisements, news releases, audio-visual productions, displays and public relations activities.

Branch staff increased activities in public relations during 1978. Although projects such as technical publications, feature articles, factsheets and other information pieces designed for farmers were given less direct attention, they continued to play a significant part in overall branch responsibilities.



Photographic display cases were installed on main-route ferry runs between the Mainland and Vancouver Island.

Press Releases

During 1978, a total of 85 press releases were prepared and issued to a mailing list of about 1,500 recipients. These included media, government offices, industry and private individuals across Canada. Out of the total, 17 were joint federal-provincial releases describing projects approved under the ARDSA program.

News releases described new ministry policies, progress on existing programs, new appointments, and other agricultural issues affecting the general public.

Publications

Technical publications continued to form a major effort within the branch during 1978.

A total of 80 publications were revised, reprinted or submitted as new manuscripts for production. Publications covered all aspects of agriculture in B.C. focussing primarily on specific cultural or management practices. The annual crop production guides were the largest individual project within the publications division.

A colourful publication was produced jointly by the Ministry of Tourism and Small Business Development and the Ministry of Agriculture, entitled "This is British Columbia - Recipes Through the Years". This publication was designed as a coffee table book sold by retailers and included colour

photos of B.C. scenery related to agriculture as well as unique ethnic food recipes developed by the ministry's Marketing Branch home economists.

A glossy illustrated publication entitled "Progress Report '78" was produced and mailed to the B.C. Federation of Agriculture membership list. The publication highlighted major accomplishments and activities of the ministry up to mid-1978.

The branch also produced the ministry's annual report.

Advertisements

Throughout the year the Information Branch placed technical advertisements in agricultural publications, newspapers and specialty catalogues. The advertisements are designed primarily for the farming audience to create awareness of specific ministry services, seminars, programs or events. Advertisements dealt with 22 individual topics ranging from cultural practices to informing farmers of the ministry's financial program deadlines.

Factsheets

Many branches within the ministry produce topical factsheets which are distributed to farmers from the ministry field offices. The Information Branch coordinated the factsheet series although each branch was responsible for the technical material. The factsheets included Agrimarket Reporter, Engineering Notes, Farm Business Management, Field Crop Facts, B.C. Food Markets, Pest Control Notes, Stock Talk and Poultry Facts.

Public Relations

One branch staff member was transferred to Victoria from the Kelowna Film unit to coordinate the branch's public relations duties.

The Information Branch purchased a portable display structure designed to accommodate almost any display need. Full-colour photographs, posters and pamphlets were used on the display as appropriate to the function. It was used at ten individual locations throughout the province ranging from two to five days per location.

Nine photographic display cases were also built and installed on main-route ferries travelling between Vancouver Island and the Mainland. Each display dealt with one aspect of B.C. agriculture in an effort to acquaint the travelling public with the industry. The ministry's agriculture display at the P.N.E. was dismantled after many years in the B.C. Building.

As part of the public relations activity, feature articles describing ministry accomplishments and programs were submitted to Country Life in B.C. beginning with the November 1978 issue. This is planned as a regular submission in the foreseeable future.

Audio-visual

In March 1978, the film unit at Kelowna moved into a new extension wing of the Kelowna office building. The wing included a fully operational film and sound studio, darkroom and post-production film facilities. Ministry staff and the general public made frequent use of the films and services of the unit. Slide-tape presentations for ministry staff became increasingly popular.

A series of 21, 15-minute television programs were produced in conjunction with the Dawson Creek staff. The programs were aired during November 1978 to May 1979. The 1978 fruit growers television workshop was broadcast in one-hour units over five days during February. Feature-length one-hour programs were prepared on forage handling systems and farm credit. Other films produced include Family Farm Vacations, Orchard Safety, Valley Vintage. (B.C. wine industry) and other miscellaneous productions. The branch's film library was in demand lending 345 films during the year.

Miscellaneous Activities

The branch coordinated a communications workshop designed to help ministry staff become more knowledgeable in the use of visual aids. Workshops were held in Richmond (October), Prince George (December) and Kelowna (December) for about 20 staff in each location. They were well received and future workshops were encouraged by staff.

Major food promotion campaigns, such as the Brown Bag promotion, stressed the use of home grown B.C. quality foods for good nutrition.

Marketing Services

The Marketing Services Branch is responsible for maintaining and cultivating new markets for British Columbia agricultural products as well as promoting the use of B.C. home grown foods within and outside of the province. The branch is made up of three individual aspects; administration, food promotion and market information.

In addition to legislation and other special projects, the administration office coordinated the food promotion and market information roles.

During 1978, the branch maintained its food promotion function while placing additional emphasis on the fledgling market information program which was started in 1977. Legislation entitled "Agriculture Products Grading Act" was completed during 1977 and enacted in early 1978. The act stimulated a re-evaluation of grading and inspection in B.C. in light of a breakdown in the marketing system for fresh fruits and vegetables. This re-evaluation will continue during 1979.

The branch participated with the federal government in developing task force reports evaluating the market potential of a number of B.C. agricultural commodities. The reports will be analyzed during 1979.

With the help of auxiliary staff, the branch began a periodical newsletter entitled B.C. Food Markets Report; initiated services to the food processing industry; hired some home economists; and carried out a study evaluating farmers' markets programs throughout North America and the implications for B.C.; continued preparation of commodity slide presentations which are aimed at the school audience.

The branch was involved in special projects such as recapping the program operated by Pacific Dehy Limited, development of a picture recipe book entitled "This is British Columbia - Recipes Through the Years" in conjunction with Beautiful B.C. magazine (Ministry of Tourism and Small Business Development); participation in the international Green Crops Drying Congress held in Saskatchewan; and participation in the Food Science Lead Committee and the Part I Technical Sub-Committee under ARDSA.

The branch monitored missions to Canada from China, the results of which will hopefully show in future years. The branch also worked with a Japanese delegation in British Columbia to purchase B.C. purebred dairy cattle.

The branch maintained the ministry's statistics function until it was turned over to the Policy Development and Planning service upon the appointment of a statistician. The branch was also involved in preparing the horticulture section of the Western Canadian Position Paper on Agriculture in the GATT negotiations. At year end, the outcome of these negotiations was not known.

Food Promotion

During 1978, the Food Promotion Unit actively engaged in personal contact with the industry and special promotion campaigns using the media and displays. The unit maintained retail store support through point-of-sale material and visits to every store in the province on two occasions. The unit entered displays at conventions and fairs including the Fresh for Flavour Foundation, the B.C. Federation of Agriculture convention and numerous shopping malls.

The branch coordinated a Spring Salad Tour for producers, handlers and the media in an effort to create an overall awareness of certain aspects of B.C. agriculture.

The format of the recipe releases was changed during 1978 to a 32-page recipe and gardening publication issued each season. Two major mall poster campaigns were carried out throughout the province featuring the themes "Salad Time" and "Pack Up Some Goodness in Your Old Brown Bag". The Brown Bag promotion highlighted the use of nutritious B.C. foodstuffs in packed lunches. The program, aimed at all age groups, featured a poster contest for school children and family farm vacations as prizes.

The Food Promotion Unit cooperated with numerous B.C. agricultural agencies to promote specific commodities. These included the United Flowers Co-op, Country Fair at the P.N.E., a mushroom marketing campaign and the Fresh for Flavour program.

Market Information

1978 was the second year of this program's operation. The publication "Agrimarket Reporter" was published 23 times during 1978 to provide B.C. agribusiness with details on current markets in B.C. and the U.S., commodity supplies, labour situations, transportation, tariffs, etc.

A second newsletter, "B.C. Food Markets", began in mid-1978 and was designed for use by the media to give consumers information on price trends and background on the food industry.

During 1978, work began on a directory of the B.C. food and beverage industry, a vegetable marketing guide and an analysis of the B.C. mushroom processing industry.

Specialist Services

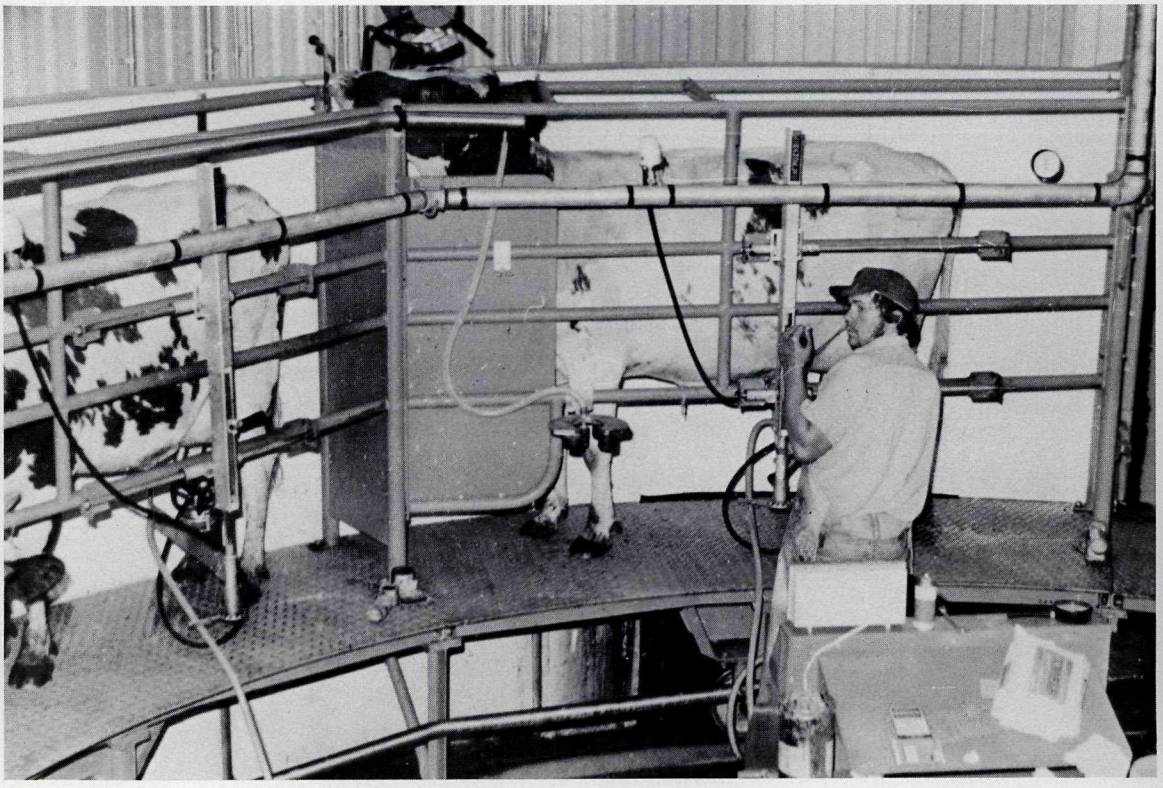
Dairy

The major function of this branch is to ensure wholesome milk and dairy products.

Milk production remained static at 399 million litres, while fluid milk sales at the retail level registered a significant 4.2 per cent increase during the year. Sales of semi-fluid milk products such as cottage cheese and yogurt, etc. increased by about 6.5 per cent. Butter production was down by 18 per cent to 4.64 million pounds. Cheddar cheese production increased by 26.5 per cent to 4.19 million pounds. Ice cream mix production at 4.15 million gallons was unchanged from 1977.

With constant milk production and increased demand for fluid and semi-fluid products as well as cheddar cheese, the milk supply for industrial products such as butter and powder was inadequate. At year-end, this was affecting the efficiency of the only butter/powder plant in the province, to the extent that the viability of this sector of the dairy industry was in question.

Most B.C. commercial dairy farms have sophisticated equipment within their milking parlours to maintain wholesome and clean milk.



Farm cash receipts from dairying for 1978 were estimated to be $122 million. A forthcoming adjustment of federal subsidy payments under the market share program scheduled for March 31, 1979 will cause a slight revision of this estimate.

The number of approved B.C. dairy famers is 1,166 which is a decrease of 51 during the year. There was a reduction of 50 shippers during 1977 and a reduction of 70 in 1976. The provincial dairy herd increased by 1,500 head to 83,500 at July 1, 1978.

The milk quality program continued through the inspection of farm premises and dairy plants, and the monitoring of product quality at the dairy laboratory. Regulations regarding the grading of milk were amended to provide for a system of levies to encourage high quality milk. This system was tested during the last quarter of 1978 and will come into effect on January 1, 1979.

A pilot mastitis control program began in 1978 to assist dairymen with on-farm mastitis detection and sample screening prior to laboratory analysis. The veterinary laboratory provided specific pathogen identification and recommended the appropriate selective antibiotic.

Mycoplasma bovis, a causative pathogen of mastitis was identified in three herds. The recommended control procedure for this organism is the culling of all infected cows as antibiotics are ineffective.

Associated with the greater interest in mastitis control was an increased number of requests for milking equipment analysis and checks for the presence of tingle voltage. It was evident that properly performing equipment improved milk quality, milk production efficiency and herd health.

Seven Year Production/Utilization Summary for Milk Board Areas

YEAR	Millions of Litres			Per Cent of Production	Per Cent of Quota
	Production (Qualifying Milk)	Quota Milk	Fluid Sales		
1972	347.5	266.5	232.6	66.9	87.4
1973	350	272	242	69.1	88.9
1974	363	289	253	69.7	87.6
1975	384.5	296.5	251.5	65.4	84.8
1976	386.4	301.5	254.2	65.7	84.3
1977	398.2	307.1	261.4	65.6	85.1
1978(est)	399	314.3	272.5	68.3	86.7

A honeybee stock improvement project under DATE was carried out to develop stock for B.C. conditions.

D.A.T.E. Program

The D.A.T.E. (Demonstration of Agricultural Technology and Economics) Program continued in 1978 to fund projects aimed at demonstrating new advances in agricultural technology.

Achievements that merit special note are:

- A honeybee stock improvement project has been funded to assist in the development of local honeybee stock selected for British Columbia conditions. This program could open a market opportunity for packaged B.C. queens as well as improve local honey production. Over 100 beekeepers are assisting in the evaluation of selected stock.
- A very successful biological fly control project operated in poultry houses in the Fraser Valley has demonstrated a new fly control technique. Through the combined use of parasites and chemicals it should be possible to develop more effective fly control programs on B.C. poultry farms.
- The range seeder project enjoyed another successful year in which over 3,500 acres of rangeland were renovated by the 12 ft. model. A smaller 9 ft. seeder for use with traditional ranch equipment has now been fabricated and will be tested in the spring of 1979. This project was started under D.A.T.E., then received funding under the D.R.E.A.M. Program (Development Research Evaulation in Agricultural Mechanization - Agriculture Canada), and is now funded for a three-year period under A.R.D.S.A. for $688,840.
- The selenium deficiency study on Southern Vancouver Island indicated that 90% of homegrown forages are deficient in selenium. As a result of this study, local feed companies are considering supplementing feed supplies with selenium. Farmers have been advised of the results through the local press and extension office.
- Testing continued for bronchitis virus strains in order to develop more effective vaccines.
- Interlaken and Himrod, B.C. grown table grapes, were market tested this year, with promising results. Storage characteristics of these grapes, utilizing SO_2, were also evaluated. Consumers were prepared to pay $0.69 a lb. for these B.C. grown table grapes.
- The brood cow project is at the stage where the first crop of calves from the Fraser Reds has been produced. These calves will be R.O.P. tested and probably exhibited at the Provincial Winter Fair in 1979. The Fraser Reds exhibited excellent brood cow characteristics, i.e. ease of delivery when mated with larger exotic bulls, good milk production and good foraging potential.

Engineering

In 1978 the branch continued to provide engineering advice to the agricultural industry on irrigation, drainage, farm buildings, waste management, mechanization and land development. Service to farmers in the southern Interior was improved by a new branch office at the Summerland Research Station.

Irrigation

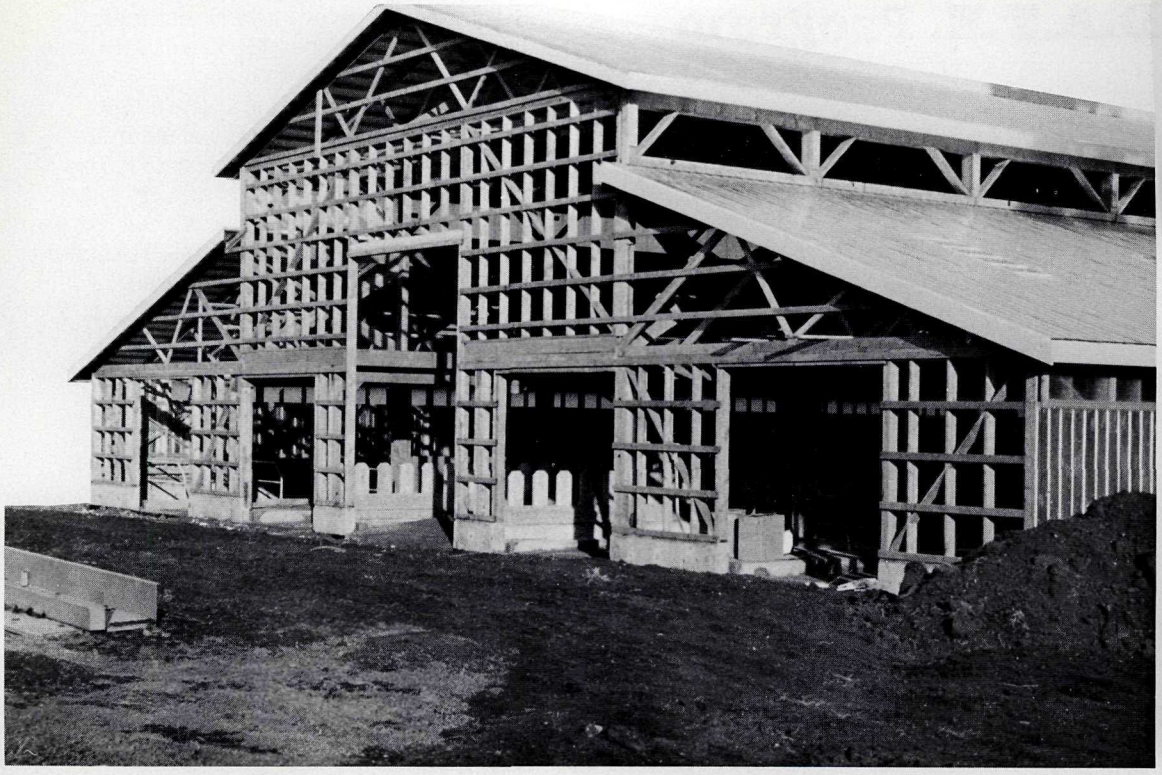
In the Okanagan-Similkameen area, the number of trickle irrigation systems continued to increase. Tricklers require significantly less energy and water than sprinklers. Water quality and equipment assessment projects identified the type of filtration, chlorination and line flushing equipment needed for trouble-free trickler operation.

A detailed report of irrigation potential in the Ashcroft-Savona area was completed in support of an assessment of forage production capabilities for the beef cattle industry.

Staff were active in the formation of the Irrigation Association of British Columbia, anticipating that it will encourage a high standard of service to the farming community.

Drainage

Drainage work increased with the availability of two new drain installation machines operated by a drainage firm



New barns and other farm structures were built according to designs developed by professional staff of the Engineering Branch.

that was financially assisted through ARDSA. The greatest increase occurred on Vancouver Island where approximately 250,000 feet of drains were installed compared to 25,000 in previous years. Interior native meadow development again received considerable emphasis. Nine surveys and water management plans were completed covering 1,400 acres. Detailed plans for underground drainage systems were prepared for a limited number of farms outside of the Fraser Valley.

There was a substantial involvement in implementation of regional water management schemes funded by ARDSA. At year-end assistance had been provided to 26 groups of farmers in preparing applications, feasibility studies and supervising construction.

Farm Structures

About 650 farmers and ranchers used the farm structures advisory service during 1978. On-site farmstead planning and the availability of detailed working drawings are main features of the program. Sales of plans increased by 50 per cent over 1977. There was a dramatic increase in the number of new swine production units under construction.

The structures advisory service is well established in the Fraser Valley, particularly in the dairy and poultry industries. The wide dairy barn with two rows of free stalls on either side of a drive-through feed alley has been very popular - 125 of these units have been built in the past few years.

Some branch emphasis will now be shifted to the Interior to develop backgrounding and feedlot facilities for an expanding beef cattle industry.

Waste Management

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

The dramatic increase in swine

production units strained the environmental control program and the minimum distance separation technique used for siting farm and residential buildings to minimize odour problems. Negative public reaction to some types of intensive livestock operations increased substantially in 1978.

Mechanization and Land Development

The mechanization program continued to cover a broad range of activities including: general farmstead mechanization; equipment combinations for harvesting, storing and feeding of forage; fruit and vegetable harvesting; grain harvesting and drying; and equipment maintenance and spare parts supplies.

Projects on range and pasture reseeding were continued to increase forage production for an expanding beef cattle industry in the province. The equipment development project for seeding interior rangeland is of notable interest. During the year, 3,300 acres of range were reseeded in the southern and central regions of the province. A second smaller seeding unit was constructed for use by ranchers who wish to do their own seeding work.

With an estimated $1 million loss of grain in the Peace River in 1978 due to poor harvest weather, steps are being taken to increase extension and demonstration activities on grain drying and handling facilities.

Special Assignments

Special assignments for other branches in the ministry and other government agencies formed a part of branch staff activities. Some of these included:

- review of effluent irrigation proposals for Princeton, Kamloops and Cranbrook
- drainage proposals for B.C. Forest Service Nurseries and Parks Branch parkland
- engineering advice on farms administered by Property Management Branch
- design checks on 116 irrigation systems submitted to Agricultural Credit Branch for ALDA loans
- design, tendering and construction supervision on modifications to the Tranquille Bull Test Station
- preliminary engineering on projects such as vegetable storage, crop processing plants, feedlots funded through Farm Products Finance or ARDSA
- design of community pasture corrals funded through ARDSA
- on-site inspections for the Agricultural Land Commission
- assistance in developing the concept of commodity core committees for planning ministry extension programs.

Entomology-Plant Pathology

The major responsibility of the Entomology-Plant Pathology Branch is to provide information on controlling plant diseases, insects and mites. The branch also develops controls for vertebrates such as deer, rodents, moles and birds.

Throughout 1978 branch staff conducted training courses and educational programs for farmers, orchardists, greenhouse operators and homeowners; in addition, field trials were carried out to evaluate pest control techniques.

Tree Fruits/Grapes

The second year of an 800-acre pilot apple pest management program was completed using a private consultant, supported by the provincial government and growers.

A pear pest management program was completed on 170 acres in the Kelowna area.

Unseasonably heavy rains in August and September led to a serious outbreak of botrytis grey mold particularly in white grape varieties. The disease was most severe in Kelowna and other mid-valley areas.

Two insects, codling moth and pear psylla, were of major concern in Okanagan orchards.

The wet weather caused a serious

A poultry specialist and entomologist jointly worked on a project using a parasitic wasp to control manure breeding flies in egg producing operations.

outbreak of brown rot blossom blight in apricots and splitting in cherries. Apple powdery mildew increased in McIntosh and Golden Delicious varieties.

Little cherry disease continued to take its toll; 193 infected trees were discovered, 38 of which were in Kelowna, four in Winfield, three in Naramata and 12 in Penticton. The disease has spread north to Kelowna and Winfield.

Nursery Industry

The continuing disease survey program in the Fraser Valley has gradually reduced the pear trellis rust (pear juniper rust) threat. Efforts to eliminate infected juniper plants which perpetuate the fungus from year to year has resulted in 13 of 30 nurseries being certified free of pear trellis rust. This permitted those nurseries to sell junipers outside the quarantined Fraser Valley area.

A biological control program began against winter moth on southern Vancouver Island. Winter moth is a severe defoliator of ornamental trees, shrubs and fruit trees. A European species of parasites will be introduced in an attempt to bring moth populations under control.

A trapping program was conducted in the Fraser and Okanagan Valleys to determine if the winter moth had spread to these areas. The branch cooperated with the Canadian Forestry Service and Agriculture Canada in preparing a special bulletin on the control of winter moth.

In cooperation with federal forestry experts and the B.C. Nursery Trades Association, a plan was formulated to combat the highly destructive gypsy moth found in the Lower Mainland during 1978. This insect, which attacks the leaves of deciduous trees, has caused extensive damage in eastern North America.

Inspection for European pine shoot moth was continued. This program began in 1974 when four of the 38 growers inspected failed to pass inspection standards. In 1978, 10 growers were not certified of the 163 inspected.

Greenhouse Industry

A program was established for the mass rearing of predators and parasites to control mites and whiteflies in commercial tomato and cucumber greenhouses. Rearing facilities were set up at Cloverdale and Saanichton. Eighteen growers were supplied in 1978. It is anticipated that all interested growers on the Mainland and Vancouver Island will be supplied in 1979.

A miticide, Plictran, was tested and found effective for mite control in greenhouses. The chemical kills the harmful mites but not the predators. Residue samples were obtained and chemical registration requested.

Biological Fly Control

In cooperation with the Poultry Branch, a DATE project was carried out to evaluate the use of a parasitic wasp to control manure-breeding flies in egg producing operations. Fly numbers in the barn using the biological agent were considerably lower than in an adjacent barn using chemical control methods. The operators also noted a marked decrease in hen mortality and an increase in egg production when chemicals ceased to be used in the test barn. The lack of chemicals also permitted a buildup of naturally occurring fly parasites and predators that further contributed to control. Six egg producers in the Fraser Valley are now using parasites for fly control.

Mosquito Control

Biological agents, including swallows and an insect predator, were evaluated for mosquito control. Mosquito control advice was provided to Cassiar, Fort Nelson, Kaslo, Prince George and area, Kamloops, Merritt, and the Okanagan and Fraser Valleys. Mosquito populations were low in most parts of the province due to light snowpack and, hence, low spring river levels.

Vertebrate Pest Control

The impact of vertebrate pests on agriculture was monitored.

Rodenticide trials were conducted for pocket gopher and ground squirrel control in the Okanagan and East Kootenay regions. These trials will lead to registration of two new products; one contains an anti-coagulant, the other strychnine.

Deer repellent trials were conducted in the Okanagan Valley and in the Creston area.

Student Program

Thirty-one summer students employed under the accelerated agriculture program, funded by the Ministry of Labour, worked with branch staff at Cloverdale, Kelowna, Summerland and Victoria. In addition, a number of students were assigned to Agriculture Canada Research Stations and three provincial universities.

The extra student help enabled these institutions to expand their research in entomology and plant pathology.

Soils

The Soils Branch is concerned with the efficient use and conservation of British Columbia's soil resource.

The branch continued to provide advisory services to the agricultural industry in 1978, from four locations: Victoria, Cloverdale, Kelowna and Prince George. Branch activities were concentrated in five major categories: soils advisory services to farmers; soil, feed and tissue testing services; administration of the Soil Conservation Act; inter-ministerial resource related activities; and technical services to the Provincial Agricultural Land Commission.

Advisory Services

Branch staff provided advisory services to growers on request in the central and southern Interior, Kootenay, Lower Mainland and Vancouver Island regions. Soil drainage investigations were carried out on more than 2,000 acres in the Lower Mainland, Interior and Vancouver Island. Drainage activity reached an all-time high

with the installation of well over one million feet of drain tile, of which about 250,000 feet were installed on Vancouver Island. Irrigation information on available water storage capacities and application rates was prepared for 650 soil samples submitted by farmers during irrigation workshops held throughout the province and by commercial irrigation designers. Additional advisory services included recommendations on a wide variety of soil related problems including soil management, soil test and fertilizer requirements, crop suitability and productivity.

Soil, Feed and Tissue Testing Laboratory

A 25 per cent increase in demand for Soil, Feed and Tissue Testing Laboratory services occurred in 1978. About 13,660 soil samples were received requiring about 123,000 individual analyses. Feed and tissue sample tests increased about 12 percent to 6,708 in 1978.

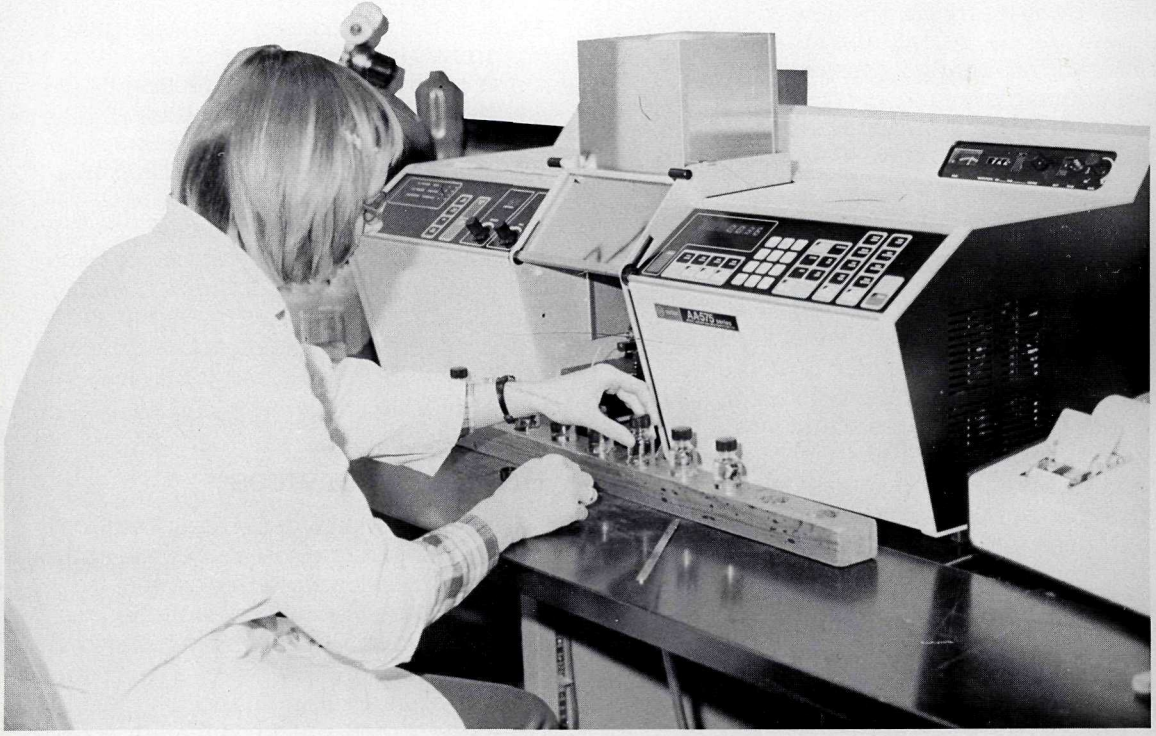
Extension activities related to soil fertility, plant nutrition, fertilizer recommendations and animal nutrition were maintained in conjunction with other branches, Agriculture Canada and the University of British Columbia. Approximately 38 per cent of the soil samples and 61 per cent of the feed and tissue samples were processed in support of these activities.

Fertilizer and animal feeding recommendations based on laboratory analyses continued to benefit producers financially.

Soil Conservation

Soil conservation activities increased significantly in 1978, following amendments to the Soil Conservation Act and its regulations. Permits issued by Regional Districts and Municipalities, with the approval of the Provincial Agricultural Land Commission, resulted in more effective control over soil removal and land filling operations in the Agricultural Land Reserves. Advisory services were provided to applicants, local authorities and the Commission.

The Soil, Feed and Tissue Testing Laboratory at Kelowna gives farmers fertilizer or animal feed requirements based on samples of soil or feedstuffs submitted for analysis.



Resource Planning

Advice was provided on inter-ministerial resource issues including mining proposals, electrical power transmission line corridors, coal and other developmental projects. A number of environment reports were reviewed relative to the agricultural impact of such developments. Branch specialists provided advice to various provincial, regional and municipal government agencies on soil, water, land use and planning matters through appropriate regional committees.

Land Commission Technical Services

Technical services to the Provincial Agricultural Land Commission on soils, agricultural capability, land use and related matters were provided in 1978. A total of 150 on-site inspections were carried out; reports and recommendations were prepared regarding 16,500 acres under appeal to the Commission.

Veterinary

The Veterinary Branch is responsible for animal health information and disease control programs. It provides a laboratory diagnostic service, brand inspection services and oversees the sale of veterinary drugs by licenced dispensers.

Brucellosis

The branch cooperated with the federal health of animals branch in control and eradication of Brucellosis under the federal Animal Disease and Protection Act. Two outbreaks of Brucellosis occurred in the province during 1978. One was in the 100 Mile House area and the other in a community pasture in the Dawson Creek area. The overall incidence of Brucellosis declined in British Columbia, as well as in the rest of Canada.

Mycoplasma Mastitis

During 1978, the first case of bovine mycoplasma mastitis was diagnosed in a dairy herd on Vancouver Island and resulted in heavy production losses. In order to control the spread of this disease, it was made a "named" disease under the provincial Contagious Disease (Animals) Act. Subsequently, a policy was developed whereby the ministry would assist dairymen in an attempt to eliminate this potentially serious disease.

Unusual Cattle Losses

Two ranches in the Burns Lake area suffered heavy losses of cattle as a result of blue-green algae poisoning. The algae buildup was attributed to the stagnation of water due to restricted drainage.

One beef herd in the Quesnel area had high calf losses and abortions possibly caused by a parasite picked up from coyotes.

There were no cases of equine encephalomyelitis reported. Undoubtedly, the routine vaccinaton of horses against this disease played a major role in its control.

Mink Industry

A severe outbreak of mink distemper occurred in the Abbotsford area. Approximately 7,000 mink died because of this disease.

A further two-year agreement was reached between the ministry and the Mink Producers' Association to continue testing for Aleutian Disease. Under this agreement another 40,000 mink will be tested by March 1979. Currently, 12 producers are using this test to eliminate Aleutian Disease from production units.

Meat Inspection

1978 marked the first full year for the federal-domestic meat inspection program. Under this program, the Ministry of Agriculture transferred all meat inspection work to the federal government on a fee-for-service basis. Abattoirs that meet construction standards can apply for the federal-domestic meat inspection program.

Veterinary Laboratory

The veterinary laboratory at Abbotsford

Veterinary Branch staff were involved in a variety of livestock disease control programs, brand inspection and laboratory diagnosis of animal diseases.

serves the livestock and poultry industries in British Columbia. In 1978, about 7,000 submissions were received at the laboratory. This represented an increase of 14 per cent over the previous year. Special emphasis on diagnostic virology led to a greater capability in the identification of many viruses.

At year end, the laboratory continued a number of projects manned partially by auxiliary staff from the accelerated agriculture program. These programs included:

(a) Mastitis survey - A pilot program is underway that involves the testing of cows for mastitis followed by laboratory testing for the most effective control antibiotic.

(b) Mycoplasma survey - Tissue samples (milk, poultry, cattle and swine) in which mycoplasma infection could be discovered are under test. To date, 1,030 samples have been examined. During the same period in 1977 only 21 samples were tested. Forty-nine cases of mycoplasma-induced disease have been documented in the province.

(c) Viral immunity - This project provides poultrymen and livestock producers with information regarding the immunity status of their animals. The information allows producers to maintain a higher level of animal health with respect to viral infections.

(d) Viral testing agent and technique - Laboratory staff are attempting to isolate and purify a mink virus agent used in viral testing and are developing a special technique to perform viral serology. If successful, these procedures will greatly expedite viral testing of mink and could result in a saving of $30,000 annually.

(e) Trace mineral deficiency study - A project is underway to determine the level of certain trace minerals required to maintain animal health. During 1978 two trace minerals, copper and selenium, were studied as they are suspected of causing significant production losses.

Brand Inspection

New brand inspection procedures were formulated, in consultation with the B.C. Cattlemen's Association, to permit brand inspectors to maintain efficient service while reducing inspection costs. In 1977 the brand inspection program achieved 46 per cent self-sufficiency.

The workload remained fairly constant during 1978. Statistics showed a 4.8 per cent decrease in the number of cattle leaving the province; a 6.7 per cent increase in the number of cattle slaughtered in facilities not under inspection; and a 12 per cent increase in the number of horned cattle shipped. Horned cattle accounted for 4.7 per cent of total shipments in 1978.

An advisory committee was set up to receive and review applications for grants from the Horned Cattle Fund. Grants totalling $93,573.59 were made from the fund.

Youth Development

The branch is responsible for administering the 4-H and farm vacation programs. It also provides input to the International Agricultural Exchange Association.

4-H is an informal, educational and recreational program for young people throughout British Columbia. Boys and girls from nine to 19 years of age have the opportunity to join a variety of programs.

4-H members are encouraged to develop skills in many areas; e.g. technical projects, public speaking and social involvement. In 1978, 3,576 members and 776 leaders enrolled in 262 4-H clubs in British Columbia.

As is traditional, 4-H members participated in national and international travel and exchange programs during 1978. "Energy Use in the Food System", and the federal system of government were some of the topics encountered by 4-H members attending national programs. The interprovincial 4-H exchange celebrated its 16th year as a major 4-H program. For the first time the Norgan Foundation of the Pacific National Exhibition sponsored an exchange of four 4-H members to the state of Oregon. B.C. and Nova Scotia participated in the summer work exchange. In addition, there were district and regional exchanges involving other areas of Canada and the United States. Over 100 4-H members from British Columbia exchanged with members from Newfoundland, Nova Scotia and Prince Edward Island in the federal Secretary of State funded "Open House Canada" program.

4-H members were involved in two new projects during 1978:

- in cooperation with B.C. Hydro, an "Energy Conservation" project was developed. It provided the 4-H members and leaders with information on energy conservation. 4-H clubs were encouraged to develop educational displays on this topic.
- a farm safety program was initiated by the B.C. Federation of Agriculture in cooperation with the B.C. 4-H executive council and the Engineering and Youth Development Branches of the B.C. Ministry of Agriculture. 4-H members in the Matsqui-Sumas Prairie areas of the Fraser Valley visited farmers and gave them an information kit related to farm safety. 4-H members placed "First Think Safety" decals on tractors and other farm equipment during their visit. Although a pilot project in 1978, it was considered a valuable community service and may be extended to other areas of the province in the future.

During 1978, 4-H members supported a self-help funding project of the British Columbia 4-H Foundation. The project will provide funds for additional 4-H programs over the long-term.

Farm Vacation Program

Under this program approximately 500 people took vacations on British Columbia farms and ranches in 1978. Vacations averaged five days for a total of 2,480 vacation days taken. The Youth Development Branch prepared and distributed a list of participating farm vacation hosts. This program provides

farmers and ranchers with an alternate source of income. It also offers urban people an opportunity to take a farm holiday and learn about agriculture.

International Agricultural Exchange Program (IAEA)

IAEA is a program which emphasizes agricultural education and training in another country. It also stresses cultural exchange.

The International Agricultural Exchange program provided rural young people from British Columbia with the opportunity to travel to one of more than 15 countries to work and stay with a farm family for periods up to eight months.

In 1978, 11 young British Columbians travelled to Australia, New Zealand and European countries. Forty young people from Europe, Australia and New Zealand were hosted on British Columbia farms during 1978. Participants in this program were paid a standard training allowance. The Youth Development Branch assists the IAEA in organizing the program in British Columbia.

4-H specialists cooperated with B.C. Hydro on an energy conservation project.

Production Services

Apiculture

The Apiculture Branch provides specialist services and advice to honey producers, government, processors, fruit and seed growers. Its work covers three main categories; extension, regulation and pollination consulting and research.

The total honey crop during 1978 was 1,994,920 kg (4.4 million pounds), a decrease of 409,144 kg (901,997 pounds) from 1977. Beekeepers on Vancouver Island produced 530,185 kg (1,168,845 pounds) of honey from fireweed which grows on logged-off areas awaiting reforestation; an excellent second crop return. This honey crop was just 122,995 kg (271,155 pounds) less than the Peace River crop of 653,180 kg (1,440,000 pounds).

Active beekeepers in the province numbered 5,200, a gain of 252 producers since 1977. The number of producing hives increased to 50,000 in 1978 from 47,000 in 1977. This increase in producers and hives is attributed to the record honey crop in 1977.

The wholesale price for honey continued to improve. Also, short supplies and improved prices for honey resulted in better financial returns for honey producers.

The price of No. 1 white honey in bulk 229 kg (660 pound) barrels ranged between $1.15 to $1.17 per kg (52¢ to 53¢ per pound).

Seven trailer truckloads of honey were shipped from the Peace River to packers in the U.S.

The remainder of our honey crop, 1,341,740 kg (2,958,000 pounds) was sold through local retail outlets or on-farm sales. The on-farm price for honey averaged $1.65 to $1.76 kg (75¢ to 80¢ per pound).

In cooperation with the Farm Economics Branch, the branch's three producers' consensus costs-and-returns studies were updated. One additional study was done on honey production on Vancouver Island and on the economics of overwintering bees in a controlled atmosphere building.

For the third year, honey producers in British Columbia were given assistance to compensate for hive damage by bears and subsequent loss of crop.

This assistance was provided under the "Beeyard-Bear Protection Incentive Program". Financial assistance was provided in the form of grants to honey producers to assist in the construction of bear-proof electric fences or other satisfactory protective devices.

There was a slight increase in the incidence of American foulbrood disease, although most other infectious bee diseases declined.

There was a marked increase in the

Installation of chain link fence around beehives.

number of honey bee colonies infected with Chalkbrood. This fungus disease increased from 1.73 per cent in 1977 to 4.77 per cent in 1978. No cure for this disease has yet been found.

British Columbia beekeepers continued to provide a valuable pollination service to fruit growers through the offices of the Okanagan Valley Pollination Association and the Fraser Valley Small Fruit Growers' Association.

Work was started on a DATE project "Bee Breeding and Honeybee Stock Improvement". This is a three-year project designed to provide a reservoir of honeybee breeding stock which will be free of African/Brazilian hybrid genes. If successful, this project will enable British Columbia beekeepers to produce improved bee stock for their own use and for sale.

A total of 412 queens of both Italian and Carniolan stock were produced and distributed to British Columbia producers for evaluation.

A total of 200 four-frame nuclei with queens were overwintered in our controlled atmosphere building at Cloverdale. This facility was constructed under a DATE project and is providing an invaluable addition to our bee breeding project.

For the fifth consecutive year, experimental apiaries were located at Interior fireweed areas of British Columbia. Bear protective devices were tested and honey production recorded. The results of this work showed it possible to protect apiaries from bear predation by means of electric fences and specially designed pallets on which the hives are placed and covered with chain link fencing.

Production of fireweed honey in the Interior of British Columbia is more reliable at elevations of 610 to 914 metres (2,000 to 3,000 feet).

Other project work included methods of controlling Chalkbrood disease in honeybees, pollination attractiveness of blueberry varieties, fumigation of diseased beehive equipment using ethylene oxide, management of leafcutter bees in alfalfa pollination, and the use of honeybees to pollinate raspberries and white dutch clover on the Creston flats.

A member of the Apiculture Branch was present on a national committee of the Canadian Honey Council and the Canadian Association of Professional Apiculturists. This committee acts in an advisory capacity to the federal Health of Animals Branch and is concerned with importation of disease-free honeybee stock into Canada.

1978 was a productive year, made possible through excellent work performed by students hired under the Ministry of Labour Accelerated Agriculture Program and the Summer Student Program.

Completed installation of chain link fence around beehives to prevent damage by bears.

Development and Extension

The Development and Extension Branch provides advisory services to farmers in B.C. through branch field staff at 18 district offices across the province. District agriculturists give technical advice on crop and animal production, farm business management and marketing. The staff deal with farmers through personal consultation and regional and district extension programs.

The branch acts as a coordinating focal point in bringing together services of various ministry branches while

administering the extension programs. Legislation and policy of other government ministries are also considered with their implications to agriculture.

During 1978, district agriculturists conducted workshops, seminars and field days. The staff also prepared radio and television programs and newsletters for direct mail.

During 1978, a new extension structure was developed for closer program coordination between branches. This involved establishment of regional commodity core extension committees which included: The Fraser Valley Dairy Core Extension Committee, Southern Interior Forage Core Extension Committee and the Lower Mainland Forage Core Extension Committee. The committees were set up as a long-term program for producers in that particular commodity.

Other regional extension committees continued related to North Okanagan Dairy Extension, Range Extension, Swine Education, Central Interior Forage, Lower Fraser Valley Beef Feedlot, Vancouver Island Program Development and East Kootenay Range Extension. All of these committees were designed to give producers the opportunity to discuss production, economics and marketing of their specific commodity.

Branch staff continued to be involved in all aspects of B.C. agriculture. They provided advice on all aspects of crop production, animal health-management programs and farm management programs. During 1978, the branch was very active in programs dealing with improving British Columbia's forage production. Large volumes of alfalfa continued to be imported to meet Lower Mainland and Vancouver Island markets. Branch programs, in conjunction with other branches, were aimed to enable B.C. producers to supply a larger percentage of the local market. Demonstration field days dealt with varieties, weed control, soil fertility and nutrition.

Branch staff were also involved in other specific field crop programs involving drainage, crop variety and fertility trials of wetlands in the Cariboo region. Since weeds continued to be a problem throughout the province, a number of weed control programs were maintained

Special extension committees were set up to guide the development of forage production in the southern Interior and Lower Mainland areas.

and in particular, a diffuse knapweed control program in conjunction with field crops branch staff in the southern Interior and Cariboo.

During the year, extension branch staff cooperated with other branches and the B.C. Cattlemen's Association in developing a livestock survey which dealt with backgrounding and finishing of beef cattle. A publication called the Beef Feeding Guide was also started during the year. A financial management course for B.C. cattle producers was also developed in conjunction with the B.C. Cattlemen's Association.

Swine markets continued to be strong in 1978 resulting in high producer interest. As a result, branch staff were actively involved in a study to analyze minimum distances between hog facilities and urban areas in the Chilliwack district. In conjunction with the Dairy Branch, extension branch staff was involved in a mastitis control program in the Fraser Valley. Concerning the beef R.O.P. (Record of Performance) program, branch involvement shifted from supervisor of the weighing to interpretation of the data.

B.C. farmers have shown much greater interest and need for counselling on farm business management, taxation and financing. During 1978, extension staff participated in workshops and seminars for beef cattlemen and other groups. In conjunction with the Farm Economics Branch, a mobile farm management education clinic toured the province during the winter of 1978/79 and gave local farmers a three-day course in financial management. The course was followed up by on-farm consultation and a further seminar to review the material.

The federal government served notice during the year that the Small Farm Development Program will be terminated as of March 31, 1979. Under this program, extension branch staff supervised seven field staff who dealt directly with small, entering or part-time farmers across the province. The program had high impact during its tenure in giving advice on financial management, resource use, farm records, legislation and farm planning. Numerous seminars, studies and mini-programs were designed and given under this program during 1978.

A branch member chaired the Green Zone Committee which was set up in January 1977 to design formulae for the studying of new or expanded livestock facilities in relation to neighbouring uses. In May 1978, a pilot program involving a swine operation was conducted in the Chilliwack area to test the formulae. The Green Zone Committee also developed an information bank with site plans of individual farms in the Lower Mainland.

A study and review of agricultural development in the Fort Nelson area resulted in a report published in late 1978 called "Agriculture Development and Potential of Fort Nelson". The report reviewed the history, climate, soil capability, government policies and various other concerns related to the Fort Nelson area. The report concluded that the ministry should be more actively involved in assisting area farmers with improvements and modern techniques.

The branch administered 12 community pastures totalling 384,000 acres in the Peace River and Central B.C. regions. Eleven of the pastures carried over 12,500 cattle during 1978, about 40 per cent more than in 1977. The remaining pasture was being developed for use in 1979. Problems involving predators, disease and pasture management continued during the year. Extension programs were developed to improve pasture management skills and a management manual written as a guide for pasture administration.

Branch staff acted in an agriculture liaison role between agencies using the land resource. Other government agencies and user groups were represented on committees dealing with regional resource management, coordinated resource management planning (range), technical planning (settlement planning) and problem wildlife management. During the year, much time was devoted to studying the predator problem on domestic livestock and Okanagan orchards.

Numerous other projects were completed and continued throughout the year including studies on the Kootenay River diversion, pasture research, cost-benefit analysis of drainage and irrigation proposals, the Hat Creek coal development, the Peace River Dam Site C project, among others.

Farm Economics

The Farm Economics Branch provides assistance to farm managers, commodity groups, farm organizations and B.C. Ministry of Agriculture staff who request guidance on farm business planning and organization. Advice is given on financial management, farm record and business analysis systems, economic analysis of production costs and proposed development projects. To accomplish these objectives, the branch publishes booklets and factsheets on specific topics, conducts economic studies and surveys, provides instructors for short courses and workshops, provides leadership in the delivery of farm record systems and advanced farm planning techniques, and offers individual client counselling in the economic and business management area.

During 1978, the following activities were carried out to assist farm managers and their advisors in the area of farm business planning:

- the **Mobile Farm Management Clinic** (funded by ARDSA) was organized on a joint basis with the Small Farm Development Program and the University of British Columbia to deliver an in-depth farm business management education program to ranchers. The course used a mobile classroom facility to reach clients in rural areas.
- a **three-day "Planning for Profit" workshop** was developed in conjunction with B.C. Institute of Technology. A consulting firm delivered the course to beef producers in eight areas of the province. It was designed to teach financial management and planning techniques to beef producers using the "case study" method.
- economics and business planning sections were compiled for the "Cattle Feeding Guide" and "Cow-Calf Manual". These publications were being completed by ministry staff for distribution to beef producers.
- the publications, "Farm Business Partnerships in British Columbia - A Laymen's Guide", "Farm Business Partnerships in British Columbia - Advisor's Guide" and "Sample Clauses for Farm Business Partnership" were produced to provide guidance to farm business managers and their advisors on farm business partnerships. New information was required as a result of

A mobile classroom was used to provide ranchers with on-site education seminars on farm business management.

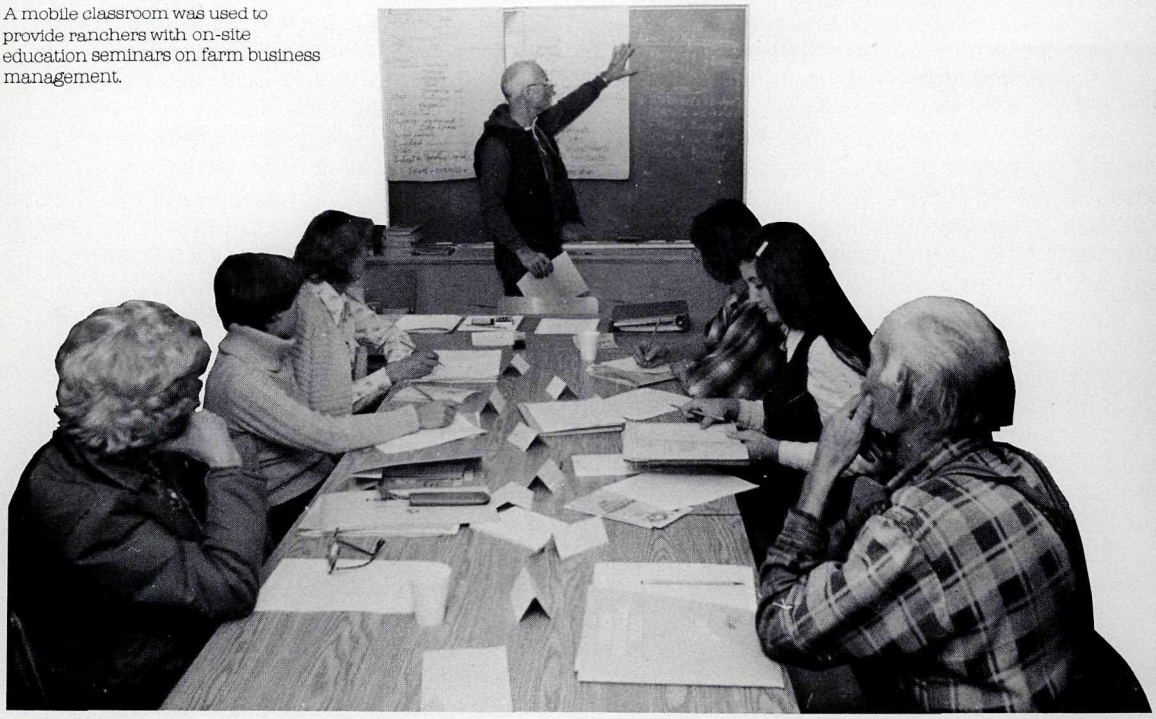


FIGURE 1 - Use of Computerized Decision Aids B.C. Ministry of Agriculture - 1974 to 1978

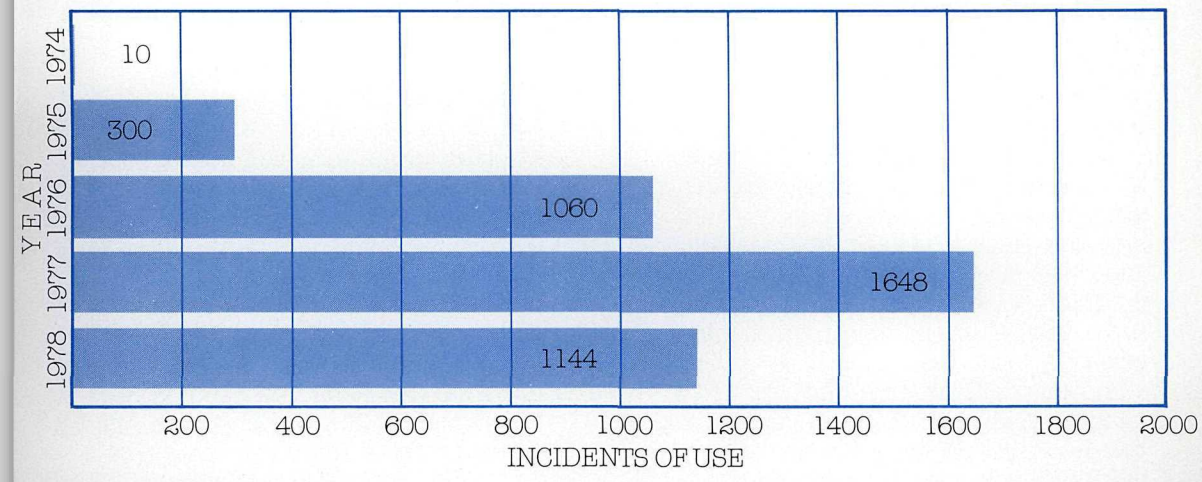
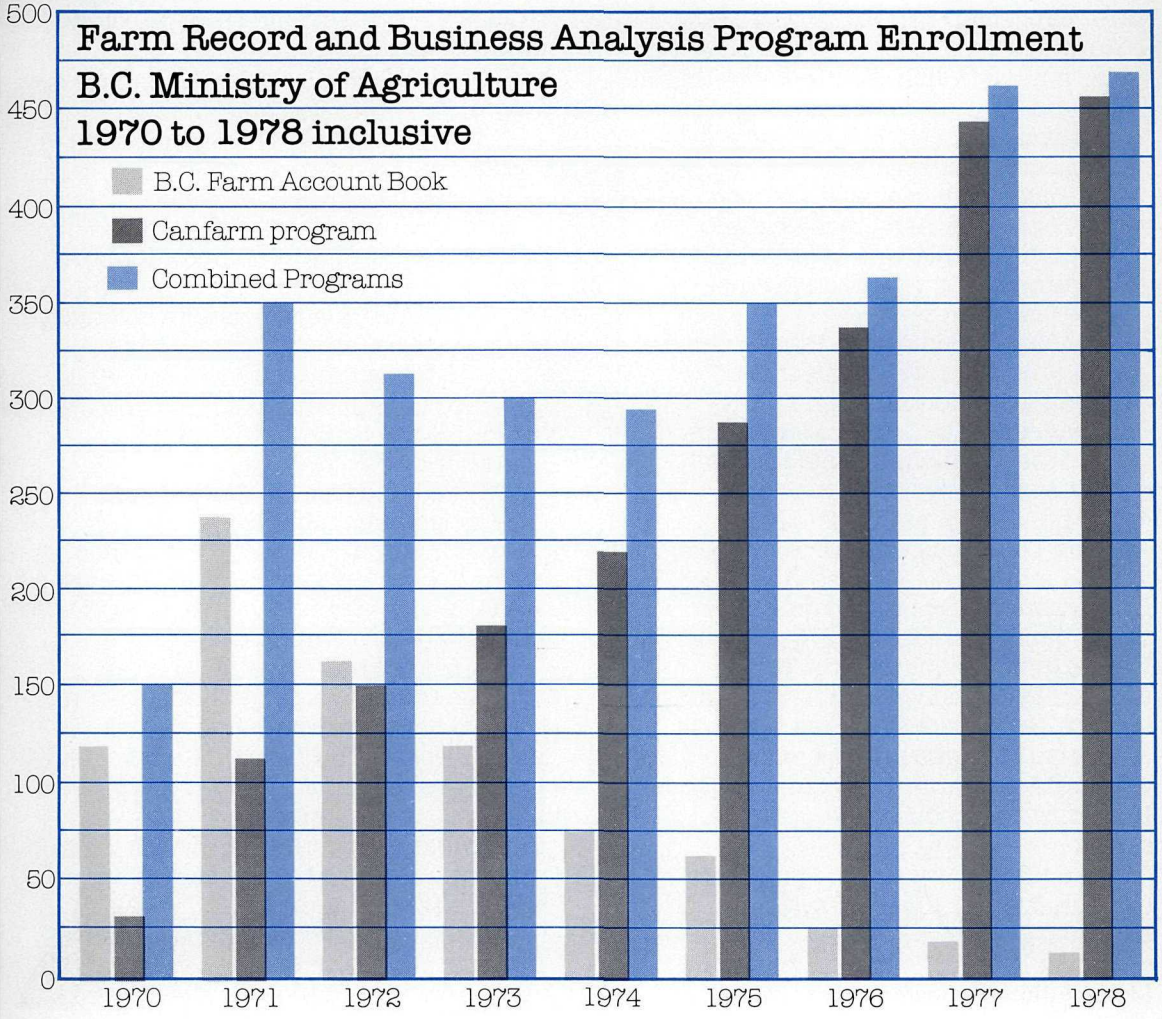


FIGURE 2 -



major changes to taxation legislation and partnership legislation occurring in 1978.
- 18 issues of the "Farm Business Management" factsheet on current topics were researched, compiled and released.
- two films, "Planning Your Credit Needs" and "How to Apply for Credit", were completed in 1978 and used in the mobile farm management clinic project, the planning for profit workshops, and other meetings. Several provinces and agencies have requested the films for their use.
- the publication "Sources of Farm Credit in British Columbia" was updated and released.
- a financial planning package entitled "Farm Financial Plan" was compiled and released. This package consists of six worksheets to assist the farm manager with the financial analysis and planning of his business.
- the use of computerized decision aids continued to provide better planning information to farm clients and were in demand (figure 1). The following aids were available:
  - loan calculator program
  - feedmix and dairymix programs
  - cashplan and cashflow forecaster
  - machinery replacement program
  - machinery buy versus custom hire program
- numerous workshops and short courses were conducted on farm business management topics including tax management, business organization, credit and financing, estate planning, leasing versus ownership, etc.

The branch offered the B.C. Farm Account book and Canfarm record service to farm managers in British Columbia. Enrollment in farm record programs continued to increase in 1978 until the federal government announced its decision to terminate funding for Canfarm in 1979. Negotiations resulted in the formation of Canfarm Cooperative Services to operate the Canfarm system in 1979 at higher cost to producers who use the system.

The total B.C. Ministry of Agriculture enrollment on both record systems is shown in Figure 2.

In 1976, the B.C. Farm Business Management Advisory Committee established guidelines to allow private firms to offer the Canfarm Record Service and Computerized decision aids to farm clients. During 1978, 12 firms were approved to offer these services. The firms included:
- Wilson & Paterson, Dawson Creek
- Mr. Frank Lee, Victoria
- Mr. H.H. Groenwold, H.R. Lucas, Abbotsford
- Northwest Agrinomics Limited, Clearbrook
- G.B. Phillips, Smithers
- K.P. Wiebe, Clearbrook
- McKnight, Johnson & Company, Chilliwack, Abbotsford
- Ted Osborne, Vernon
- Canadian Bio-Resources Limited, Surrey
- MacDonald & Pluntz, Abbotsford
- Touche, Ross & Company, Langley
- R.G. (Bob) Holtby, Prince George

During 1978, the costs and returns for several agricultural commodities were studied with the following reports being published:
- CDS 191 Alfalfa Hay (revised); Salmon Arm
- CDS 192 Corn Silage (revised); Salmon Arm
- CDS 199 Silage, Hay and Pasture (revised); Vanderhoof
- CDS 208 Corn Silage (revised): Comox Valley
- CDS 212 Corn Silage; Aldergrove-Langley
- CDS 216 Alfalfa Hay; Williams Lake
- CDS 217 Uplands Timothy - Clover and Native Hay; Williams Lake
- CDS 219 Silage, Hay and Pasture; Courtenay
- CDS 222 Land Clearing and Development; Smithers
- CDS 223 Hay and Pasture; Vanderhoof
- CDS 224 Non-Irrigated Winter Wheat and Alfalfa Hay; Vernon
- CDS 226 Corn Silage; Kamloops

In 1978, the branch established an experimental project to gather farm input (factor) cost data from suppliers on a monthly basis. The project data collection procedures and analyses were pre-tested on Vancouver Island prior to implementation in the Fraser Valley. By year-end, data was being collected and analyzed on 80 input items.

During 1978, the branch responded to requests for involvement in feasibility studies on resource development projects

by conducting several economic benefit-cost analyses. Projects where analysis was completed or is ongoing include:

- benefit-cost analysis on the drainage and irrigation scheme proposed for the Nicomekl-Serpentine
- benefit-cost analysis on the proposed East Delta Water Management project
- benefit-cost analysis on an irrigation project in the Cowichan area
- benefit-cost analysis on an irrigation and drainage project in the East Kootenays

In addition, several benefit-cost analyses developed by other firms were reviewed for the ministry.

In 1978, the branch continued to liaise with the B.C. Systems Corporation and coordinate the development and use of computer systems within the Ministry of Agriculture. Major activities included the streamlining of the computer programs associated with the Dairy Herd Improvement Analysis program with major modifications to handle metric units and other new specifications.

In addition to changes to the Dairy Herd Improvement Analysis program, the organization of data processing for the following ongoing projects was carried out:

- interest reimbursement program
- B.C. farm account book program and Canfarm Comparative Analysis project
- Youth Development statistics program
- consensus data studies
- data analysis for sprinkler irrigation systems
- "green zone" project
- farm machinery cost study

Considerable effort has been made to streamline liaison procedures with B.C. Systems Corporation. Staff awareness and training projects were carried out on the "Infomart" program and "Cansian" program.

During 1978, the branch represented the B.C. Ministry of Agriculture on several provincial, regional and national committees relating to its work area. The branch participated in the meetings of the Canada Committee on Farm Management Services, Canfarm Advisory Committee, Canada-British Columbia Small Farm Development Program Coordinating Committee, the Western Farm Management Extension Committee, the B.C. Farm Business Management Advisory Committee and the management committee of the Federal-Provincial Feed Freight Assistance Adjustment Fund Agreement.

Field Crops

The Field Crops Branch is responsible for specialist services related to all field crops, range management, soil, fertility and weeds in British Columbia.

Growing conditions in 1978 were not as favourable as in 1977. Crop yields in the Peace River were reduced by a combination of summer drought and very wet conditions at harvest. Much of the first crop alfalfa in the southern Interior was of lower quality because of wet weather. On the coast, dry conditions in July caused considerable stress on non-irrigated crops and very wet conditions in the fall delayed harvest. However, range productivity throughout the Interior was excellent and warm, dry conditions prevailed in all regions in October, allowing completion of the harvest.

The most significant development of the year was the increase of 110 per cent in rapeseed acreage over 1977. At 180,000 acres, rapeseed became the largest annual crop in British Columbia in terms of area. The swing to rapeseed was caused by reduced prices for cereals and a continuation of reasonably good prices for rapeseed. Rapeseed movement to the crushers was relatively good but delivery quotas of all grains were limited.

Although 1978 hay and silage production varied considerably and was somewhat lower in quality, the total amount produced was estimated to be the same as in 1977; i.e., 1.9 million tons from 670,000 acres at 2.8 tons per acre. Imports of alfalfa from Washington into the Lower Mainland and Vancouver Island stood at 80,185 tons for the first nine months of 1978 as compared to 95,530 tons for 1977. However, because of the lower quality of local forage, total imports for the year were expected to be in excess of 100,000 tons.

Production of silage corn increased to 24,000 acres, the highest on record, with an average yield of slightly under 21 tons

green weight. There was a definite trend towards earlier maturing varieties.

A decrease of 1,000 acres in the potato crop to just under 10,000 acres was attributed to the decline of the processing market.

Forage seed production was about the same as in 1977. The Creeping Red Fescue crop was the smallest since the late 1940s, causing prices to increase. This total reduction in seed acreage was offset by increased production of alsike clover seed.

As in previous years, the Field Crops Branch was involved with demonstration and applied research projects with farmer cooperators throughout the province and cooperated fully with research stations and the University of B.C. Under the Accelerated Agriculture Program, 64 young people were hired to assist field staff with project work. Approximately one-half of these people were assigned to research stations to work on projects directly applicable to production agriculture. At West Quesnel for example, the effect of boron with and without fertilizer on an old stand of alfalfagrass was measured. An application of 60 lbs. of nitrogen, three lbs. of elemental boron and 30 lbs. of prilled sulphur increased the total yield to 4.1 tons per acre as compared to 1.4 tons for the untreated plot. Work of a similar nature was conducted with forage crops and grains on more than 40 farms located throughout the province. In addition, corn variety trials were conducted on 20 farms.

Range specialists in the Interior were again heavily involved with coordinated resource management planning. In the Thompson-Okanagan region, a total of 19 plans were completed and at least six additional plans started. In the Cariboo, requests from range permittees for coordinated plans under ARDSA funding overcame the task group's ability to cope.

Range seeding with the new rangeland disc-seeder-packer totalled over 3,000 acres in 1978. In general, the seeding was outstandingly successful. A site established at Cache Creek in 1970 is an outstanding example of the value of range seeding with crested wheatgrass. In 1978, a seeded section of this site which had been fertilized with 100 pounds of nitrogen in 1977 yielded 2,487 pounds of dry matter as compared to 124 pounds from the unseeded, unfertilized native range.

Forage production on range can be increased dramatically by seeding to domestic and more productive grass varieties. This is an unseeded area.

This area was seeded with a hardy grass variety, without using fertilizer.

This area was seeded to a hardy grass variety with an application of fertilizer. Yields were 20 times that of the unseeded area.

Weed control activities were stepped up in 1978. Assistance was extended to 16 regional districts and municipalities for a variety of programs ranging from complete enforcement of the Weed Control Act to roadside weed control and specific control of range weeds. Funds totalling $235,000 were expected to be paid out in grants for work completed during the year. Other activities included about 60 trials on control of weeds in crops and on rangeland. Biological control projects also received increased attention. The branch cooperated with the B.C. Ministry of Forests Range Division in the release of **Urophora** parasitized knapweed heads throughout the southern Interior at 69 sites.

The branch cooperated with Agriculture Canada agencies on a number of potato projects. All seed potatoes produced in 1978 originated from virus-tested seed. The establishment of the two seed potato control areas of Cariboo and Pemberton now seems fully justifiable. Seed sales from the 1977 crop were 7,870 tons of which 2,590 tons were exported. Seed from the Golden Nematode resistant variety, Hudson, was being produced in Pemberton for the Saanich district.

Pedigreed forage seed production remained at a relatively low level despite efforts to distribute foundation seed of Canadian varieties multiplied by the Canadian Forage Seed project. Stronger prices in 1978 for many varieties are expected to stimulate production. Of interest to Lower Mainland farmers was the recent licensing of the double-cut red clover variety "Pacific" as a result of a five-year cooperative project involving Delta farmers, U.B.C. and the Ministry of agriculture. About 6,000 pounds of foundation seed were produced in 1978.

Horticulture

The Horticulture Branch provides advice to growers of horticultural crops in B.C. on all aspects of cultural management.

Branch staff assisted packinghouses in developing an improved field service throughout the Okanagan-Similkameen region, helping growers with sprayer testing and calibration, increasing the accuracy of soil sampling, heightening awareness of nutritional problems and improving harvesting maturities. Testing sites for tree fruit varieties and root stocks were initiated. During 1978, a coordinated approach to prevent orchard damage by deer was initiated. Through extensive use of radio broadcasts, newspaper and magazine articles, grower meetings, field days and events such as the television "Chautauqua" seminar and horticultural forums, messages of good horticultural practices were extended to growers.

Tree Fruits

APPLES

Apple markets for both fresh and processed fruit continued to be strong. Movement of the 1978 crop was good and prices firm.

Sales of apples both through fruit stands and to fruit "peddlers", reached an all-time high in 1978. Some orchardists, however, questioned the selling of their crop or a portion of their crop in this manner in view of returns received for apples sold through B.C. Tree Fruits Limited during recent years.

Orchard renovation including new plantings and new irrigation systems continued during 1978. A world-wide shortage of trees prevented an acceleration of orchard renovation. The lack of nursery stock in B.C. also severely curtailed replanting plans.

PEARS

The 1978 pear crop was 10.2 per cent smaller than the 1977 crop.

The pear psylla problem was disastrous to the 1978 crop. More effective pear-pest pesticides are needed to control the insect.

The control of psylla by other than chemical means would be ideal, but does not seem possible in the next few years.

PEACHES

Th 1978 peach crop was estimated at 32 million pounds compared to 30 million pounds in 1977. Of this total, 35 per cent was delivered to packinghouses and 65 per cent sold directly from orchards and fruitstands.

APRICOTS

Most apricots were sold to the processors

at good prices. Volume was reduced because of brown rot and poor size. Chemical thinning trials show promise and may help this crop.

SWEET CHERRIES

Total 1978 sweet cherry production was 14.4 million pounds. The average return to the grower was 30¢ per pound. There were more damage claims from the marketplace than during 1977.

Reduced U.S. cherry crops caused better than expected B.C. prices.

A cherry study led to an experiment in orchard packing. The purpose was to compare and evaluate packing cherries in the orchard as an economic means of improving fruit quality. The concept of orchard packing is feasible and economical, provided a good quality cherry is on the tree.

A total of 193 trees were found infected with little cherry disease, most of them concentrated in the Penticton-Naramata region. New outbreaks in the Kelowna area significantly widen the distribution of this disease even though the spread is slow.

SOUR CHERRIES

While sour cherry production has remained steady, the price return to the grower has increased dramatically. This is due to two years of crop failure in the eastern United States where the majority of sours are grown.

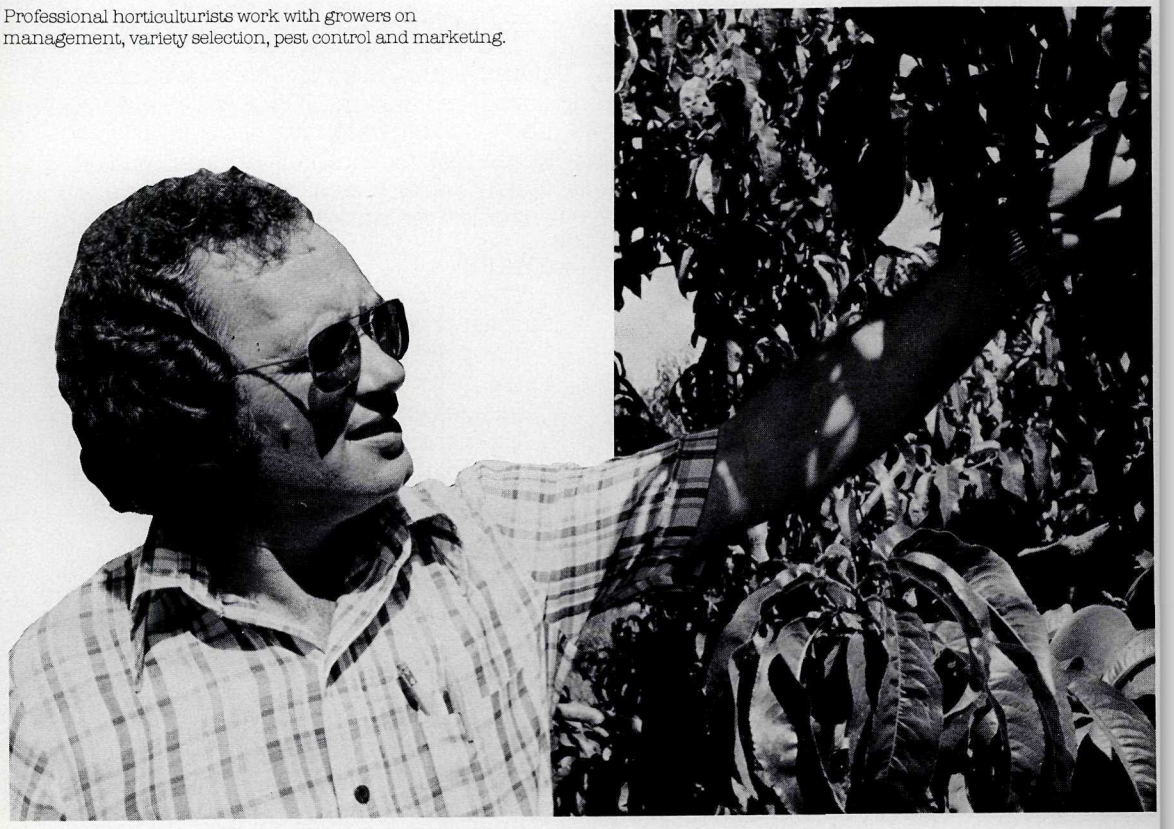
PRUNES

The 1978 prune crop was estimated at nine million pounds compared to 6.6 million pounds in 1977. This represented a substantial increase in total dollar value.

GRAPES

There was a record crop of over 18,400 tons of grapes produced in the Okanagan and Similkameen Valleys in 1978.

Professional horticulturists work with growers on management, variety selection, pest control and marketing.



Overall crop quality was much better than expected in the early fall.

Most varieties were harvested two to four weeks later than last year. There are now five mechanical harvesters working on the crop, all in the Oliver area.

The branch monitored the commercial grape crop for soluble solids on a weekly basis for five weeks until October 16. Trial varieties were monitored until harvest. Experimental plantings produced much needed data on vinifera selections and other potentially new varieties for British Columbia.

B.C. wineries that have been entering international competitions have been receiving high ratings and winning awards. They anticipated record sales for 1978.

The first cottage winery was established in B.C. during 1978 by Marrion John near Peachland.

The "Becker Project", involving a selection of German grape varieties, continued with planting trials in the Okanagan area. Branch staff also conducted cooperative variety trials with grape growers. The resulting grapes were tested by Agriculture Canada researchers for wine-making potential.

Vegetables

Unsuitable weather made it a difficult growing year for most vegetable crops. Vegetable acreage did not increase from 1977 levels.

Poor weather also caused marketing difficulties particularly with lettuce and cauliflower. Lettuce lacked continuity of supply. In an effort to bolster market acceptance of cauliflower, the branch participated in trial cello wrapping. The product was well received by the trade.

While cole crops, tomato and pepper seedlings have been imported for many years, 1978 marked the first import of celery seedlings.

Prices for celery were good throughout the season, reflecting the advantages of washing, grading and packing at the selling agency, rather than packing without washing at the farm.

Onion volume and quality were normal although White Rot disease continued to be a problem.

With the assistance of an ARDSA grant, one of the established processing plants introduced five new pouch-pack lines for broccoli, cauliflower, brussels sprouts, peas and white corn. This firm hopes to obtain a local supply of 40 tons of white corn in 1979. It is hoped that these lines will successfully compete with and displace some of the imported product.

Crop insurance was made available to pea growers for the first time in 1978. The DATE project to find a selection of peas resistant to a new wilt race, "Kam", was successfully concluded in 1978. The selection will be made available to the pea seed industry and increased at growers' and processors' demand.

The confidence of the Interior vegetable industry in their marketing board was under review in 1978. However, interest in vegetable production increased during the summer; asparagus growers were given assistance through the formation of the B.C. Asparagus Growers' Association. A national asparagus crop survey which included the Okanagan Valley pinpointed many serious problems in the industry.

During the summer, studies were carried out in the Grand Forks area concerning nematodes, soil fertility, irrigation, harvesting and storage of vegetables including potatoes.

Berry Crops

Many strawberry fields came through last winter in a weakened condition and never fully recovered. The full crop potential was not reached.

Raspberry prices and production were very good in 1978. For the second consecutive year, raspberries were imported from the United States for processing, only the second time since 1969. Fresh market shipments and roadside sales declined due to high processing prices.

The blueberry crop showed a high potential early in the season but hot weather reduced the yield. Sales were strong and prices were firm.

The cranberry crop was good although slightly lower in volume than last year's record high. Price and demand remained good.

Cranberries are harvested in the Lower Mainland with this unique motorized unit.

Mushrooms

Mushroom production in 1978 increased by 18 per cent over 1977 levels. Sales of B.C. grown fresh mushrooms were again strong with all fresh markets supplied by the local product. The average producer price was about 65¢ per pound. The expansion of facilities which took place over the past few years slowed down in 1978.

Nursery Crops

An objective of sales amounting to $20 million in the nursery industry by 1980 was achieved in 1978, two years early. There was a strong demand for B.C. grown nursery stock in eastern Canada. Exports to Washington and Oregon also occurred.

The branch cooperated with Fraser Valley College, Douglas College and the B.C. Nursery Trades Association in their attempts to accommodate the interest in nursery production. The branch nursery specialist also assisted U.B.C. with instruction in a plant science-nursery course.

A new B.C. Plant Protection Act became law during 1978. The new Act provides more authority in administering regulations under the Act and provides for an appeal by persons affected by the regulations.

The certification program for Pinus Spp. continued to expand during 1978.

The first Balsam fir grown under the new certification program were sold during 1978.

A Pear Trellis Rust certification program for junipers was accepted by Plant Quarantine Division, Agriculture Canada during 1978.

The first Nursery Production Guide was printed in 1978 for use by growers. This publication was based on many years of research and field trials.

Container production of nursery stock expanded more rapidly than traditional field culture. Nutrition and weed control are two major problems in container culture.

A 1977 survey set target ranges for nutrients in conifers and broadleafed evergreens. In 1978, a survey was

undertaken to narrow the target ranges to specific genera of the most common plants grown and to determine optimum levels of nutrients.

The production of nursery trees for the tree fruit industry continued to increase after a low period in the early 1970s. Emphasis was on the production of spur-type Red Delicious. There is still a shortage of stocks for planting. Good returns over the past two years has renewed interest in orchard renovations and additional plantings.

Greenhouse Crops

The high cost of energy continued to plague the producers of greenhouse crops. Growers took steps to conserve fuel wherever possible.

The greenhouse industry continued to expand slowly despite energy problems. The greatest expansion was in the flower industry. The trend away from greenhouse tomato production continued. Although the market for tomatoes was strong, net returns for tomatoes were not as high as for other crops. Production of seasonal crops such as poinsettias continued to increase.

There was increased interest in specialty crops such as freesias, alstroemeria, gerberas and alternate vegetable crops such as lettuce and Chinese melons.

Allotment Gardens

The allotment garden program for urban dwellers continued in 1978, with about 1,500 plots located in the Victoria and Vancouver areas. The turnover continued to be greater than expected, primarily among new plotholders.

Livestock

The Livestock Branch is responsible for the development of programs related to the production of livestock and livestock products. Programs have been devised to assist producers to improve the quality of their livestock and the efficiency of their production.

Beef cattle prices increased substantially during 1978 and by the end of the year continued at satisfactory levels. The B.C. Livestock Marketing Cooperative reported an average price per pound of 63¢ or $413 per head on all cattle sold. This compares to $216 per head for 1977 and $176 for 1976. Cow sales were brisk, mostly to the U.S. Ranchers who normally sell yearlings bought back less calves than in average years. Interest rates tended to depress calf prices in November.

The Beef Industry Study Committee, organized in 1977 to examine ways and means of increasing provincial self-sufficiency in beef production, continued actively during the year. The principal objective was to agree upon and finalize terms of reference for a study and to appoint and assist a coordinator who would be responsible for producing the final report. The study, funded under the A.R.D.A. Agreement, should reach initial draft form by February 28, 1979. It is felt by many that some of the preliminary reports produced and released to date have had a catalytic effect in the development of backgrounding and finishing facilities. One experienced group of cattlemen have already had an A.R.D.S.A. loan approved for the development of such facilities in the Kamloops region. The facilities will offer custom services to clients.

The reaction of the beef cattle industry to the Range Act was one of caution. While the Act contains provisions for longer tenure, which the beef industry had stressed for many years, there is concern that the Act allows for unilateral decisions by the Ministry of Forests which could unfavourably affect the rancher. The Ministry of Agriculture cooperated with the Ministry of Forests in development of the regulations pertaining to the Act. These have only recently been proclaimed so that it is too early to measure producer reaction at time of writing.

The swine industry continued to expand at a rate unprecedented in recent years, with B.C. production nearing the 100,000 head mark by the year end. Weighted average price for 100 index hogs at Vancouver during the year was $67.51 per hundredweight.

Much of the optimism in hog production was caused by the return of favourable prices. However, other factors such as the efforts of the B.C. swine breeders to

promote and develop the industry, existence of a price stabilization program, and the re-entry of Intercontinental Packers into the slaughtering and industry promotion field had a marked effect. The demand for breeding stock exceeded supply with price for gilts in excess of $200. On the less optimistic side however, there remains concern that municipal zoning regulations may impede the development of the industry in some regions of the Fraser Valley where proximity to markets suggests an expansion should occur. The Engineering, Extension and Livestock Branches are cooperating on plans and procedures aimed at alleviating the problem.

The ARDSA funded Swine Industry Study was delayed much beyond its scheduled completion date of mid-year and is now set for January 1979. It is hoped that this study will provide some realistic guidelines as to the future direction of the industry.

The Hog Quality Program administered by the Livestock Branch indicated that in 1977, 41 operations produced 82.7 per cent of the provincial output of hogs. Early in 1979, the ministry will be able to compare 1978 production with that of the previous year in order to accurately assess development.

Manpower resources made available to the branch in 1978 allowed the development of a long-awaited Swine Record of Performance program. Six producers were enrolled at the end of the year, with at least 15 more expected to sign up in 1979 when premises are ready. A total of 134 boars and 844 gilts were probed on private premises during the year. One privately-owned boar test station, the first in the province, was constructed and began operation during the year. Due to the efforts of the B.C. Swine Producers' Association, the National Swine Record of Performance Advisory Committee will hold its 1979 annual meeting in British Columbia.

Prices for good quality slaughter lambs ranged from $65 to $80/cwt. live weight for most of the year in the province. Public sales of registered breeding stock showed some decline in prices over the previous year but prices of young commercial ewes and ewe lambs rose sharply by late 1978. The B.C. Sheep Breeders' Cooperative sold about 2,400 head of sheep of all classes at its Kamloops sale on October 14. Ewe lambs ranged in price from 69¢ to $1.38 per pound with an average price of 96¢ on lambs weighing 75 pounds per head for some small lots. Approximately one-half the sheep were sold to buyers in Alberta and Ontario.

The Provincial Sheep Record of Performance Advisory Committee began an assessment of the need for central test facilities for B.C. breeding stock. A highly qualified committee will report on alternatives and make recommendations by May 1979. The National Sheep Record of Performance Committee has accepted an invitation to hold its 1979 annual meeting in Victoria.

A solution to the increasing problem of predation by dogs and indigenous species continued to be sought as a requirement for development of the sheep industry in British Columbia. Provincial and regional committees worked actively on the problem which is being made more complicated by highly reactionary environmental groups.

The branch was represented at the National Sheep R.O.P. Committee at Truro, Nova Scotia and the National Beef R.O.P. Advisory Committee at Brandon, Manitoba during June and the Canadian Milk Recording Board Workshop in September.

The goat industry was assisted by personnel hired under the Accelerated Agriculture Program during the year. The project which commenced in June, terminates on March 31, 1979. It is hoped that as a result of this assistance, the goat industry will be in a more favourable position to identify and justify its developmental needs to government and lending institutions. It is interesting to note, many members feel that they must have a type of official milk recording scheme not presently available. A liaison committee has been established to promote better public relations between the ministry and the goat breeders.

The Dairy Herd Improvement program indicated that herd size and production continued upward, while the number of producers on the program dropped. Herd size increased from 60.8 cows milking in 1977 to 61.4; production rose to 14,491 pounds of milk and 523 pounds of

Under the Dairy Herd Improvement Program, inspectors take milk samples from commercial dairy operations to analyze the milk for content quality.

butterfat from 14,253 pounds of milk and 518 pounds of butterfat; but enrollment dropped from 556 to 526. Reasons for reduction in enrollees is due to herd consolidation, transfer to R.O.P. and in some cases, dissatisfaction with service. The division experienced difficulties in implementing the Canadian Milk Recording Board Standards. In addition, the responsibility for programming and data processing was transferred to a new administration. At the year's end, it was believed that the new administration had come to grips with the problems involved, and that 1979 would see a renewed rate of progress and development.

Preoccupation with utility livestock prevented the branch from devoting much attention to the horse industry. The provincial government, through the Racing Commission, recognized the value of an incentive to the racing industry by provision of a new grant of 0.5 per cent of the total pari-mutuel handle to B.C. breeders of competing thoroughbred and standardbred horses. Formerly, assistance was available only to owners of such horses.

Poultry

The Poultry Branch assists producers with all aspects of poultry and egg production. It provides advice on government programs, new techniques and research applicable to poultry operations.

The Poultry Branch staff consists of specialists in all aspects of production and diseases of poultry. The staff works closely with commercial producers assisting with current production problems and in developing modern management practices. They act as a liaison between producers and marketing boards and industry associations. They also organize and conduct conferences and various short courses.

The branch office is located at the Poultry Test Station in Abbotsford where a modern poultry farm is maintained. Staff members utilize these facilities in planning and conducting projects of an applied research nature to find answers to current industry problems.

Some of the projects completed include a study on the practicability of housing broiler breeders in cages and breeding by means of artificial insemination. On the basis of this test, the cage system, so popular in commercial egg production, could not be justified for broiler breeders.

At the completion of this project, the floor controls were altered to determine the economics of molting breeder hens. While the procedure is common with leghorns, little information is available for heavy hens.

The shortage of hatching eggs during 1978 had pointed to the need for a more flexible supply of hatching eggs. Projects were also initiated to test the genetic potential of various strains of egg-laying and meat-producing chickens and turkeys. Tests were carried out on rearing pullets in cages as little information is available regarding the effect of cage density on laying house production.

Branch staff participated in several cooperative projects with other agricultural agencies. These included a study of biological fly control in deep pit layer barns by means of a parasitic wasp. Another test determined the effect of oiling on egg quality and shelf life.

These projects provide considerable information to producers at little cost to government. The test station, in the period December 1977 to December 1978, returned $93,651 to provincial revenues from the sale of poultry products (about $23,000 in excess of normal operating expenses).

Waterfowl and game birds continue to attract considerable interest. At present

there are three pheasant farms in B.C. with a total annual production of 30,000 birds. However, commercial development is restricted because of a lack of processing facilities.

Numerous inquiries are received annually as to the feasibility of commercial rabbit meat production. There is little practical information available on the feeding, management and housing of this animal. Mortality rates in commercial rabbit houses have been high. A small research unit was installed at the test station in December 1978. Some significant advances in rabbit husbandry may be forthcoming.

Industry

The poultry industry over the past few years has developed a highly organized marketing system initially through the provincial commodity boards, followed by national marketing agencies. In 1978 all Canadian turkey and egg marketing came under the control of national agencies which related provincial production quotas to market requirements. On December 29, 1978, the National Chicken Marketing Agency was created to set production levels and controls over imports. The local board retained the authority to set prices paid to producers.

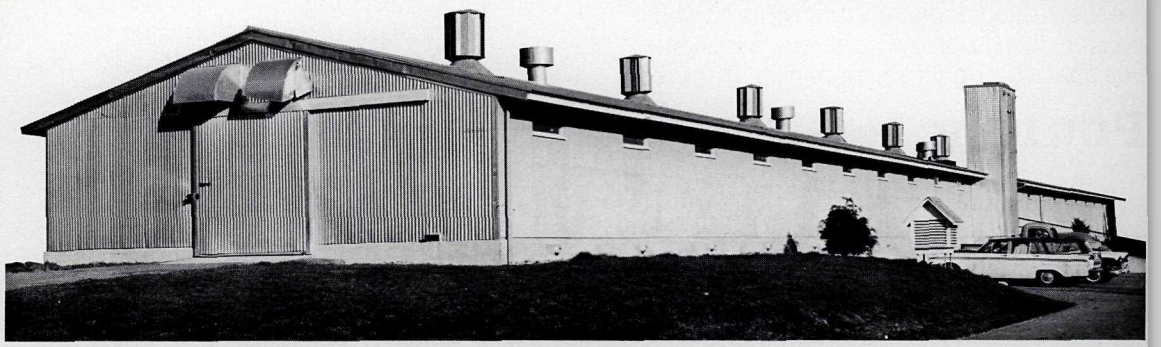
Market Situation

During 1978, all sections of the poultry industry remained financially stable. The producer price was relatively steady even though operating costs continued to rise. The weighted price for all grades and sizes of eggs was 69.5¢ per dozen, an increase of 0.5¢ from the previous year but slightly less than the 69.9¢ in 1976. The live-weight price for "regular" broilers for the first 26 weeks remained unchanged at 37.5¢ per pound F.O.B. farm. This price increased by 0.5¢ on July 1, and by a further 0.5¢ on July 24. The average weighted price for "regulars" was 38.0¢ per pound and "juniors" 39.2¢ per pound. Turky prices paid to producers averaged 50.4¢ per pound live weight. This represente a weighted increase of 2.4¢ over 1977.

The number of laying birds in 1978 was estimated to be 2.4 million, a decrease of 373,000 from 1977. The British Columbia quota allotment for 1978 was 2,501,067 layers. Total egg production was 50 million dozen or approximately one million dozen per week.

Effective January 1, 1978, the provincial egg quota was reduced by 5.68 per cent; producer quota allotment was based on 67 layers per case of eggs (previously 72). On February 1, the age at which a pullet was classified as a layer was reduced to 20 weeks from 24. About 280,000 boxes (15 dozen each) of eggs were purchased under the CEMA buy-back program and sold to breaking plants or exported. Consumer egg consumption increased by two per cent.

The turkey industry in British Columbia strengthened. Storage stocks were lower than the previous year. The Canadian Turkey Marketing Agency (CTMA) set the B.C. quota allotment at 16.4 million pounds, well below the 1977 disappearance figures. Since the need for an extra two to three million pounds existed, the B.C. board signified intention to withdraw. Subsequent discussions resulted in a larger provincial allocation over a two-year period. British Columbia was allotted 39.4 million pounds for the 1978-1979 period



Much of the B.C. poultry industry is centered in the Fraser Valley area. Many of the operations have large barns and housing facilities capable of holding thousands of birds.

with a possible further 600,000 pound breeder allotment. Production over this allotment is to be penalized at the rate of 10¢ per pound.

Disappearance of chicken meat during 1978 was spectacular. Consumption rose rapidly in May/June when beef prices jumped by about 40 per cent. Broiler chick placements across Canada recorded an eight per cent increase with major changes occurring in B.C., Alberta and Manitoba. Saskatchewan and Quebec had the smallest increases.

About 27.3 million broiler chicks were placed on B.C. farms. This was an increase of about five million (22 per cent) over the previous year, representing the biggest annual increase in the history of the B.C. broiler industry. This represented marketing of 72.5 million pounds (100 million pounds live weight), an increase of 11.5 million pounds.

Financial Services

Agricultural and Rural Development

The ARDA Branch is responsible for the coordination and administration of two major programs operating under joint funding arrangements between the province and the federal department of regional economic expansion.

A.R.D.A.

The Agriculture and Rural Development Agreement (1975/77) (ARDA) expired July 31, 1977. However, the termination date of projects underway was December 31, 1978 allowing for approved works to be constructed up to that date. Much of the work of the ARDA Branch this past year was, therefore, concerned with the administration and implementation to completion of 45 approved ARDA projects that were still active. This involved 1978 ARDA expenditures of approximately $5 million.

Underground irrigation lines were installed in the Creston-Wynndel area to provide water for improved agricultural production.

ARDSA officers discuss coordinated resource management plans with ranchers using crown ranges.

A.R.D.S.A.

A new program, ARDSA (Agriculture and Rural Development Subsidiary Agreement, 1977/82) signed in July 1977, blossomed into full activity during 1978. It resulted in many new projects, particularly in the area of range improvement, processing of food products, rural electrification, and research.

The new ARDSA program provides a total of $60 million of federal and provincial funds for the development of the agriculture industry over a five-year period.

The agreement has four major program area components:

- Part I - **Research, Planning, Training and Market Promotion;** to identify and develop new opportunities in agriculture
- Part II - **Coordinated Resource Management;** to develop and improve the grazing capacity of Crown range and thereby support and stabilize the beef industry in harmony with forestry, recreation and wildlife interests
- Part III - **Primary Resource Development;** to increase the production capability of the underdeveloped land resources through new irrigation systems and drainage works
- Park IV - **Support Services and Community Development;** to provide the support services needed in rural areas to develop secondary processing and value-added stages.

The ARDA Branch is responsible for the analysis and approval process and the administration and implementation of approved projects.

Since its inception in mid-1977, a total of 95 projects have been approved by the federal-provincial ARDSA management committee. These projects represent a total capital investment of $18,797,888. The ARDSA contribution (federal and provincial) to these projects will be $9,558,418 to be shared equally by the B.C. Ministry of Agriculture and the federal Department of Regional Economic Expansion. The remaining $8.3 million will come from local participants and private industry who are the applicants and beneficiaries of the projects. The proportion of local contribution varies with the type of project.

Summary of ARDSA approved projects:

	August 1, 1977 to December 31, 1978	No. of Projects	Total Cost	A. R. D. S. A. Contribution
Part I	Research, Planning, Training and Market Promotion	25	$ 2,035,450	$1,951,700
Part II	Co-ordinated Resource Management (Range Improvement)	25	$ 3,117,105	$2,805,394
Part III	Primary Resource Development (Drainage and Irrigation)	3	$ 511,600	$ 383,700
Part IV	Support Services and Community Development (processing, rural hydro, etc.)	42	$13,133,733	$4,417,624
	Total	95	$18,797,888	$9,558,418

Agricultural Credit

Financial assistance is available to eligible farm operators within the province through Acts administered by this branch. These Acts identified as the Agricultural Credit Act and the Agricultural Land Development Act provide the following assistance to farmers:

(a) a provincial government guarantee to chartered banks or credit unions as supplemental support security on loans to farmers

(b) a partial reimbursement of the interest paid by farmers on loans from approved lenders to effectively reduce the cost of farm loans

(c) to provide incentives to farmers to participate in special programs in specified areas of B.C. These incentives to farmers may take the form of additional reimbursement of interest paid and/or reimbursement of loan principal payments

(d) to provide direct loans to a maximum of $15,000 for primary and secondary land development

Guaranteed Loan Program

Since inception of the program in July 1974, the government approved 227 loan guarantees to banks or credit unions. Each loan guarantee was applied as security against a particular farm loan. In 1978, there were 26 loans guaranteed for a total of $2,456,069. In 1978, two claims totalling $52,382 were made by lenders under the guarantee covenant.

Partial Interest Reimbursement

In 1978, farmers in British Columbia received $4,385,301 representing partial reimbursement of interest paid by them to approved lenders during 1977. Interest costs in 1977 were reimbursed to reduce the effective interest rate to approximately nine per cent on those loans not guaranteed by the province and to approximately 9 1/2 per cent where a guarantee under the Agricultural Credit Act was in place. There were 6,427 applications received from farmers who had paid interest to approved lenders.

From the inception of this program on July 1, 1974 to December 31, 1978, a total

Eligible farmers receive partial reimbursement of interest costs on farm loans obtained to improve the farm operation.

of $18,648,819 was distributed to farmers to reduce interest costs.

Special Programs

PEACE RIVER LIVESTOCK PRODUCTION INCENTIVE PROGRAM

Through this program, 71 farmers received benefits amounting to $23,147 in 1978. These benefits consisted of reimbursement of a portion of their interest costs paid in 1977 on these special loans contracted for the purchase or retention of livestock. The reimbursement reduced the effective interest rates on such loans to four per cent for non-guaranted loans and 4 1/2 per cent for guaranteed loans.

This program is designed to encourage Peace River grain farmers to diversify their operations to include livestock thereby reducing risk and broadening their income base.

AGRICULTURAL LAND DEVELOPMENT ACT (A.L.D.A.)

In 1978, there were 551 contracts issued for a total value of $3,713,192. This direct low-interest loan program assisted farmers in financing the cost of primary and secondary land development.

Crop Insurance

The Crop Insurance Branch administers the B.C. Crop Insurance Act, plus related regulations, and maintains the program in accordance with a federal-provincial crop insurance agreement. Six crop categories are insurable under the Act at this time: berries, forage, grain, grapes, tree fruits and vegetables.

Farmers pay 50 per cent of the premium, the federal government matches the farmer's payment and the government of British Columbia pays all administration costs. On a comparative basis, for each $1.00 paid by the province, the federal government contributes about $3.00.

Berry Program

Spring frosts at flowering time affected the strawberry and blueberry crops. Damage was relatively minor however, and only a few claims resulted totalling $16,300.

Forage Program

Winter damage occurred in a few areas of the Cariboo, resulting in several small reseeding claims. Overall, 1978 was a good year for this program even though drought in the Peace River resulted in a few more claims. 1978 claims will total $20,000.

Grain Program

Prolonged drought adversely affected development and yields of crops. Rains came at harvest time, causing many barley and oat crops in swath to sprout. In spite of these setbacks, a late improvement in the weather and a determined effort by farmers enabled most of the crop to be salvaged. Claims are expected to total $600,000 for 1978, leaving surplus premiums for the fifth consecutive season.

Economic conditions and low grain prices are felt to be the main contributing factors in the decline in farmer participation in recent years. Rapeseed acreage is the only crop not following this trend however, as the acres insured doubled in 1978 to a high of 58,300. This is felt to be a reflection of the firm price for rapeseed and tight cash flow for other grain crops.

Grape Program

In spite of bunch rot appearing in a few varieties, 1978 was a claim-free year for grapes.

Tree Fruit Program

Claims will probably reach $1.2 million when the final 1978 indemnities have been paid, bringing the past two-year total close to $3 million. Fruit set failure, cherry rain-split and hail have been the main factors contributing to substantial losses.

Tree fruit farmers continued to demonstrate strong support of the program with a 20 per cent increase in participation since 1977.

The main area of concern was the increasing volume of fruit sold off the

B.C.'s grain farmers insured their grain crops under the Crop Insurance Program to avoid income losses due to hazardous weather.

farm. Direct sales made it very difficult to determine the actual level of production. Research is underway by staff members to develop some means of control for the 1979 crop year.

Vegetable Program

This program was established in 1977 in response to a request for coverage of green beans. Peas, which are grown for processing, were added in 1978.

Drought and hot weather caused a few losses totalling $3,200.

Growers requested that potatoes, cabbages, carrots, onions and turnips be added to the list of insurable crops. A proposal resulting from an in-depth study by branch research staff was forwarded to the federal crop insurance branch for approval.

Status of Crop Insurance Fund at March 31, 1978

	March 31, 1978 (cr)	March 31, 1977 (cr)
Current Account Balance	$ 546,419.00	$ 281,650.00
Undistributed reserve	(5,307.00)	(8,009.00)
Due from Government of Canada	172,926.00	---
Grain Program	1,050,389.00	1,717,770.00
Tree Fruit Program	(1,739,936.00)	(1,537,515.00)
Berry Program	315,340.00	469,996.00
Grape Program	(326,559.00)	(239,884.00)
Forage Program	6,783.00	15,992.00
Vegetable Program	(20,055.00)	---
Crop Insurance Fund Deficit	$ Ø	$ 700,000.00
Add: Advances from Stabilization Fund	Ø	(700,000.00)
	$ Ø	$ Ø

Farmer Participation

	1977	1978	1979
Berries	79	89	90
Forage	31	54	80
Grain	506	410	*
Grapes	76	84	87
Tree Fruits	850	960	1021
Vegetables	19	24	*

* Not due at this time

Farm income assurance benefits continued to be available to sheep producers in protecting them against income loss due to drastic market fluctuations.

Farm Income Assurance

The branch administers income assurance programs which protect producers against income loss due to drastic market fluctuations. Programs were first developed in 1973 for five-year terms.

As a result, six programs terminated once claims were completed on the 1978 crop. The remainder will expire upon claim settlement of either the 1979 or 1980 crops.

The following is a summary of program status as at December 31, 1978.

1. Tree Fruits	- terminated when claims for the 1977 crop were settled in 1978
2. Swine **3. Field Tomato** **4. Greenhouse Vegetables** **5. Beef** **6. Broiler Hatching Eggs**	- terminate following settlement of claims for 1978 crop year
7. Dairy	- terminate on settlement of claims to Feb. 28/79
8. Blueberries **9. Potatoes**	- terminate following settlement of claims for 1979 crop year
10. Commercial Eggs **11. Sheep**	- terminate on settlement of claims to March 31/80
12. Raspberries	- terminate on settlement of claims for 1980 crop

Total cost to government of all programs in the 1978 calendar year was $11,831,141 for a total of $107,706,370 since the inception of the farm income assurance program.

During the year, ministry staff studied a report entitled "A Review of Farm Income Stabilization by Dr. S.C. Hudson" who was commissioned to review present farm income assurance programs and the need for a long term policy. The report recommended that an amended farm income assurance program be established to complement the federal agricultural stabilization program using the 100 per cent guaranteed margin approach. The report also recommended that commodites with full supply-management systems not be eligible for farm income assurance.

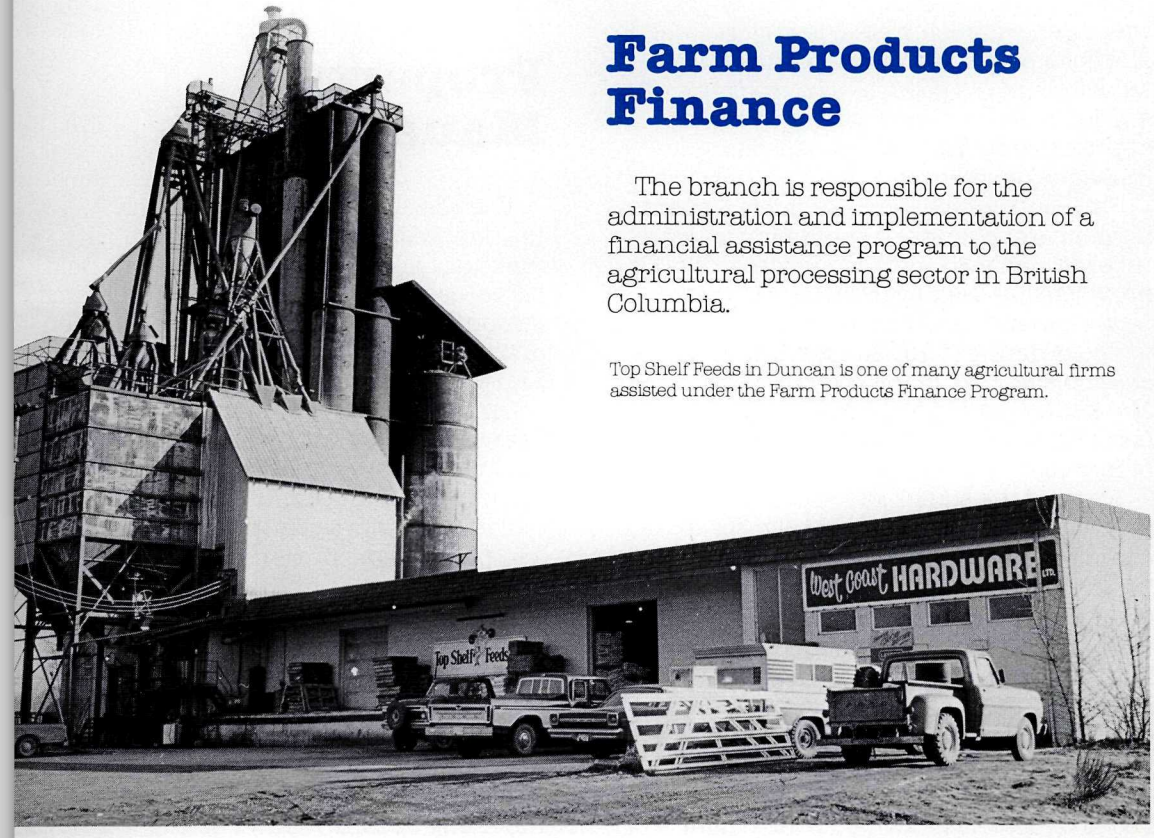
In 1978, a Memorandum of Understanding was agreed upon between the Ministry of Agriculture and the British Columbia Federation of Agriculture which set out policies for new farm income assurance plans. At year end, new plans for tree fruits, six fresh vegetable and three processing vegetable commodities were in late stages of development. Technical committees of the federal and provincial agricultural ministries continued to work towards harmonizing federal and provincial income stabilization programs.

Improved market returns in 1978 markedly reduced producer indemnity payments and left several commodity plans in a surplus situation. The surpluses were used to reduce the premiums and thus bring the particular program account to a balanced figure. In other cases, surpluses will be carried forward to a new program where applicable.

During 1978, payments under the federal Agricultural Stabilization Act were made to B.C. producers on their 1977 crops of apricots, cherries and beef calves. Potato producers also received a delayed payment under this Act on part of their 1976 potato crop. The federal payments had the effect of reducing B.C. farm income assurance payments to producers since the federal payments were deemed to be additional market return.

Farm Products Finance

The branch is responsible for the administration and implementation of a financial assistance program to the agricultural processing sector in British Columbia.



Top Shelf Feeds in Duncan is one of many agricultural firms assisted under the Farm Products Finance Program.

At year end, approximately $16.4 million was being administered to 14 companies in the form of loans, guarantees and share holdings. The Farm Products Industry Improvement Fund continued to be used for incentive and interest reimbursement grants. Financial analysis services also continued to be provided to the ARDSA Branch on value-added projects requesting forgivable loans under Part IV of the Agriculture and Rural Development Subsidiary Agreement (ARDSA).

The branch was involved with approximately 50 agricultural processing or related organizations in the consideration of requests for financial assistance. These requests ranged from financial aid to organizations in serious financial difficulty to grants for modernizing existing processing facilities. A total of 79 ARDSA proposals were forwarded to the branch for financial analysis. By year end, analysis had been completed for 37 requests while a further 31 were still under review. Eleven proposals were withdrawn or disqualified for technical reasons.

The sale of the assets of Panco Poultry was essentially completed during the year. A special program to assist potato growers left with surplus potatoes as a result of a sudden plant closure was completed and approximately $320,000 provided to individual growers.

The South Peace Dehy-Products Limited alfalfa plant continued operations under a receiver and a $500,000 guarantee was provided on a loan by the B.C. Development Corporation.

The remaining funds of $225,000 made available in 1977 to the Interior Vegetable Marketing Agency were released upon the completion of a financial review by a firm of management consultants.

A sale of the equipment assets of I.O.K. Poultry Limited was successfully completed. The equipment will be installed in a new poultry processing plant under construction in Armstrong.

Near year end, joint discussions were held with officials of the Department of Regional Economic Expansion (DREE) and Creston Valley Foods Limited. This resulted in the receipt by the company of grant funds previously approved for Swan Valley Foods under the Regional Development Incentives Program (RDIA).

Funds continued to be supplied on a shared basis under the federal Agricultural Products Markets Development program (AGMAP) to the B.C. Raspberry Growers' Association, Association of B.C. Grape Growers and the B.C. Coast Vegetable Marketing Board. The funds were used to develop new markets.

The branch participated in the Becker program in cooperation with the Association of B.C. Grape Growers under the federal New Crop Development Fund. The program concerns the introduction to the Okanagan of West German grape varieties.

The Farm Products Industry Improvement Act was amended in 1978 to enable funds to be made available to eligible agricultural organizations engaged in research on food or agricultural products. When financial, engineering or technical advice is necessary to examine a proposal or to review assistance already provided, such services may be financed under the fund.

Property Management

The administration section of the branch was moved to 20316 - 56th Avenue, Langley in March 1978. The field office, previously located in Kamloops, was discontinued in November and all branch activities are now directed from the Langley location.

On behalf of the government, the branch manages all farms and agricultural properties administered by the Agricultural Land Commission.

The leasing program involved a total of 114 properties comprising 22 Greenbelt, 46 Land Commission and 46 Ministry of Highway parcels. Negotiations carried out with the Ministry of Highways in 1978 will add another 16 parcels to the portfolio. With other selected parcels, this will provide more liberal lease terms approaching conditions now present in the Greenbelt and Land Commission leases, including options to purchase.

During the year, the Jan-Mar Property was deleted by transfer to the B.C. Forest Service for use as a tree seed production unit. Additions by transfer were the Haynes Point Orchard from the Parks Branch and the Minnekhada Farm from the Lands Branch.

As requested by the B.C. Assessment Authority, the land and improvement taxes were paid directly by the tenants for the first time.

Special project property programs made satisfactory progress. Included in this group are the Langley Farms complex; the Archdale-Forbes and Callahan Properties leased to the City of Vernon to provide a land base for the sewage effluent spray irrigation project; the Pearce Ranch leased to the Corrections Branch, Ministry of the Attorney-General, used as the location for the Juvenile Rehabilitation Program in the West Kootenays; and the Hayes-Christison-Shaw property at Armstrong which includes the development of an Ecological Reserve with the balance of the property leased to a private tenant.

The farm operation programs at the East Kootenay Ranches, Colony Farm and Tranquille Farm, were enhanced by the filling of staff vacancies through the Ministry of Labour and Accelerated Agriculture Program.

A full-time ranch manager was appointed to supervise the operations of the East Kootenay Ranches.

The Land Commission gave direction for changes made to the Advisory Committee associated with the use of these ranches as community pastures. This will increase the input from the private sector. A program, similar to the one now operating at the Pearce Ranch will commence in 1979 at the Lost Creek Ranch involving the Corrections Branch and the East Kootenay Child Care Society.

The Psychiatric Forensic Institute has a high regard for the contribution made to its rehabilitation program by the involvement of Institute residents in daily work schedules at Colony Farm. This was indicated by the consistent level of participation throughout the year.

The development of the Marathon Realty property which lies immediately west of Colony Farm included the installation of a new ground-water pumping system. Participation by B.C.B.C. in the development of this new facility will ensure improved drainage on that portion of the farm which lies to the west of the Coquitlam River.

Numerous discussions took place during the past year with officials of B.C.B.C. and the Ministry of Highways concerning the passage of the new Mary-Hill by-pass road through Colony Farm. It was indicated that the road will follow the existing Fraser River dyke alignment, resulting in minimal damage to farmland.

The operation of the B.C. Beef Cattle Test Station at Tranquille continued at capacity

A new dairy complex was being built on one of the Langley area properties administered by the branch.

level of 120 bulls per year. The change to the inclusion of corn silage in the test ration was regarded as an improvement.

A formal agreement was made allowing cooperative use of Tranquille Farm by the University of B.C. and Agriculture Canada for projects approved by the Management Committee. These projects included a management study of rangelands used exclusively by Tranquille Farm and a swine nutrition research project.