PROVINCE OF BRITISH COLUMBIA

Department of Agriculture

SIXTY-THIRD

ANNUAL REPORT

1968

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1969

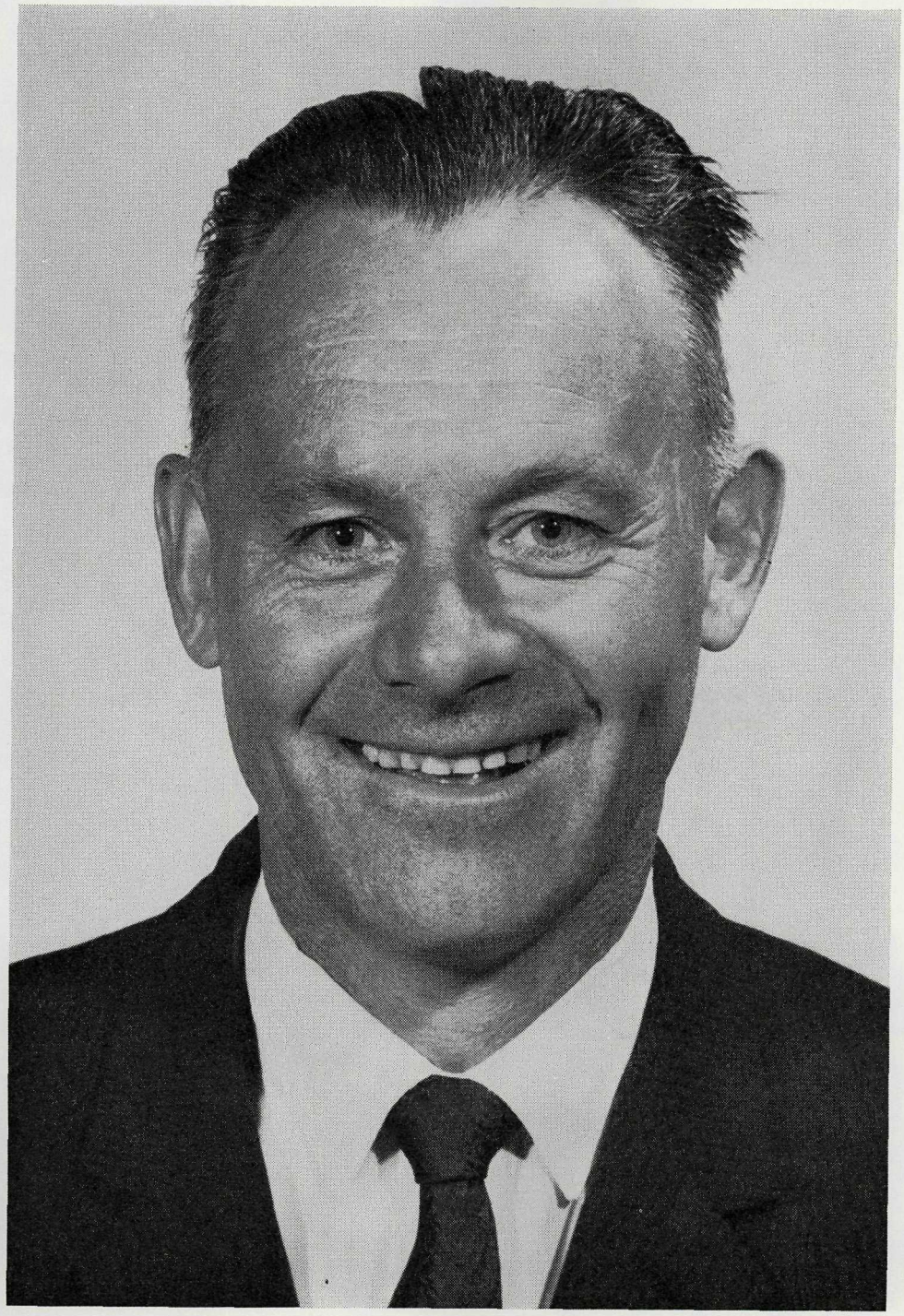
To Colonel the Honourable JOHN R. NICHOLSON, P.C., O.B.E., Q.C., LL.D.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

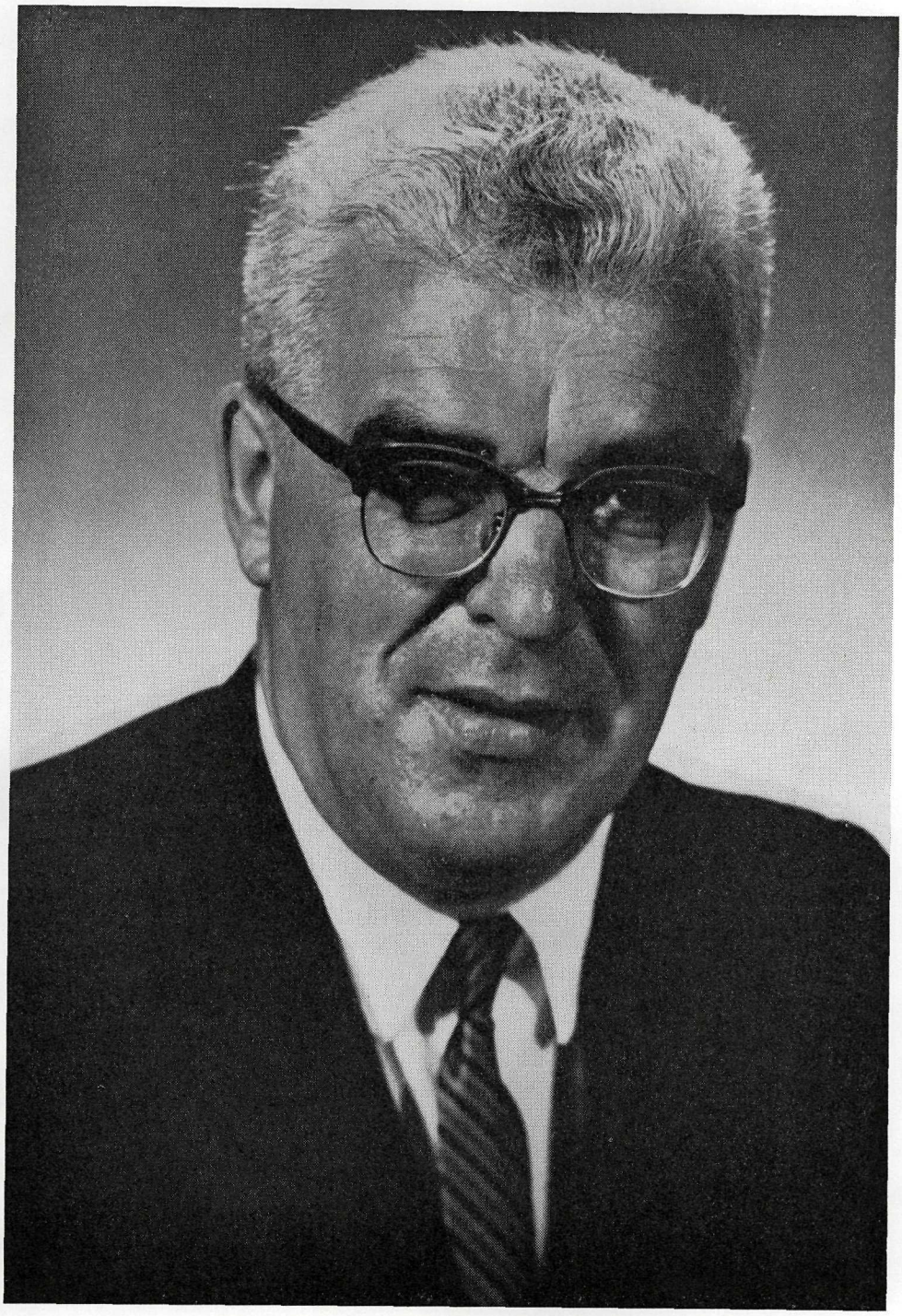
I have the honour to submit for your consideration the Annual Report of the Department of Agriculture for the year 1968.

CYRIL M. SHELFORD,
Minister of Agriculture.

Department of Agriculture,
Victoria, British Columbia.



The Honourable Cyril M. Shelford, Minister of Agriculture.



A. H. Turner, B.Comm., M.S., Deputy Minister of Agriculture.

BRITISH COLUMBIA DEPARTMENT OF AGRICULTURE

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DAIRY
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Commissioner

Report of the Department of Agriculture

REVIEW

In common with other basic industries in British Columbia, agriculture in 1968 again contributed significantly to the Province's buoyant economy as total cash receipts from the sale of farm products reached new heights, exceeding $200,000,000 for the first time. The farm prices index for the year showed an increase of 8 points over the 1967 figure, representing a gain of about 3 per cent in dollar terms. The bulk of this was achieved through significant increases in value for cattle and calves, dairy products, and eggs.

Actual physical output showed relatively little change over all however, the gain in total dollar returns being mainly attributable to monetary inflation factors.

On the other hand, the cost of farming operations also increased during the year with higher average prices for such items as fertilizer, fuel, lubricants, and machinery. Added to these were cost rises in building materials and labour. These developments, together with the generally high credit and tax costs have, as in other sectors of the economy, accelerated the continuing trend toward increased use of labour-saving devices and more intensive production techniques.

While weather conditions are an ever-present factor in agricultural performance, its influence during 1968 exerted a more far-reaching effect than in most years. Spring frosts were more prevalent than usual, and cool, damp weather in the early autumn created harvesting problems for a number of crops, notably grain. Climaxing all of these was the severe cold wave that engulfed the entire Province during the last week of December. While the total damage to such crops as stone fruits and grapes in the Okanagan Valley and to berry crops in the Fraser Valley cannot be properly calculated until next year, it is known that losses will be substantial.

There was a sharp increase in live-stock movement in the Province this year, particularly in cattle. Shipments of cattle and calves to slaughter-houses totalled 108,677 head, a gain of 9 per cent over the comparable 1967 figure, while sales to other parts of Canada increased by 35 per cent to a total of 72,907. Exports to United States markets more than doubled at 13,591.

This selling-off activity was reflected in total cattle numbers on farms by the year's end, which saw the beef population decline by more than 7 per cent in the 12-month period.

Similar declines were recorded in numbers of hogs, sheep, and lambs.

The dairy-cow population remained unchanged, but milk production continued its steady upward trend, indicating a further increase in average output per animal. The total milk yield has been estimated at 912,000,000 pounds, of which some 536,000,000 pounds, or 58 per cent, was marketed in fluid form.

Improved producer returns for eggs was a highlight in the Province's poultry industry as the weighted average price for the year rose to 33.5 cents per dozen from 25.8 cents in 1967. Total egg gradings at registered stations amounted to nearly 1.4 million cases, a gain of more than 6 per cent over the preceding year.

Peak production was reached in May when 4,905,000 dozen eggs were handled, an all-time monthly record.

In poultry meats, both broiler-chicken and turkey output was down this year while prices to producers rose fractionally.

Although numbers of breeding mink declined during the year by 14 per cent, pelt prices increased sharply with December auction returns of $16 to $22 in the average ranges.

Acreage seeded to cereal grains was up this year and in spite of difficulties created by inclement weather at harvest a total yield of over 15 million bushels was realized, almost double the 1967 figure.

Forage-crop seed production reached a total of 10,460,000 pounds, of which nearly one-half was made up by creeping red fescue. Alsike and red and white clovers were the other principal seed items. Over 1,000,000 pounds of sugar-beet and close to 800,000 pounds of pea seed were the principal factors in bringing vegetable and root-crop seed output up to 1,910,750 pounds.

Vegetable production was down slightly in volume, due primarily to weather conditions rather than changes in seeded acreage. Increases in output of such items as peas, lettuce, and onions were offset by declines in cabbage, tomatoes, and rutabagas. Prices remained at levels close to those of the preceding year, although greenhouse cucumbers and both field and greenhouse tomatoes were down, the latter quite sharply.

Of particular interest this year was the introduction of vacuum-cooling of commercial lettuce in the Fraser Valley. The resulting improved marketability was significant, presaging increased use of such cooling facilities in future.

In berry and grape culture, total production was about average, although the raspberry crop recorded a decline of 25 per cent. Production of grapes, blueberries, and cranberries continued to rise as a direct result of steadily increasing plantings. Price levels for strawberries and raspberries rose sharply while other fruits showed little or no change. The over-all value of these crops was up by $1 million over the 1967 total.

Apart from modest increases in the apricot, pear, and plum crops, tree-fruit production was also down this year but generally higher prices brought the total crop value close to the 1967 figure. The apple crop was down about 20 per cent at 246 million pounds, while cherries and peaches were off 57 and 60 per cent respectively.

Apple marketings were affected to some extent this year by the devaluation of the pound sterling in Britain, with the result that sales in that market were reduced sharply to 310,810 packages from 431,731 last year. Sales to other offshore markets were also down, totalling 138,150 packages to 19 countries, from Sweden to Singapore. Movement to United States markets was well maintained at slightly more than 500,000 boxes.

In the export field British Columbia tree fruits are having to compete with increased production in a number of countries, France and Italy in particular. Only the superior quality and packaging of the British Columbia product has enabled this Province to hold its position in many traditional markets.

Nursery crops again showed an increase in total output, indicating the growing importance of this particular phase of the horticultural industry. Growing urban demand is the principal factor in this growth, although the commercial growers' needs still account for a substantial portion of total annual sales.

Among the minor crops, the wool clip was again down, this year to only 200,000 pounds, while honey output declined to just over 2,000,000 pounds. A

decline in the number of beekeepers and colonies, coupled with reduced legume production and unfavourable weather brought about the lowered yield in the latter.

ADMINISTRATION

This year there were no basic changes in general Departmental policy, rather the emphasis was more upon refinements to existing programmes. Again, short refresher courses covering a full range of topics attracted considerable interest as reflected in the numbers of staff personnel attending one or more. This, as an integral part of the established staff self-improvement plan, has produced encouraging results.

In addition to regular meetings of senior staff officials were those of two separate groups relating to production and special services which met during the year to consider programmes as a means of co-ordinating and communicating various developments and likely developments. These have proven a most effective vehicle for sustaining interest in and knowledge of Departmental activities. There was also further development of close relationships among Federal, Provincial, and university staff through a system of lead committees in the fields of animal, engineering, food, plant, soil, and social sciences.

Of interest during the year was the expansion of the agricultural outlook series to a total of eight meetings, of which two were scheduled for early in 1969. Five of these, at Fort St. John, Smithers, Williams Lake, Cranbrook, and Nanaimo, were scheduled to deal exclusively with agricultural matters. The remainder, at Vernon, Prince George, and Vancouver, were jointly sponsored by this Department and the Department of Industrial Development, Trade, and Commerce, and dealt with other industries as well. All were well attended.

Among other benefits, the outlook series has succeeded in producing an increased awareness in agricultural matters as well as a better appreciation, particularly among those in other industries, of the relative importance of agriculture in this Province's economy.

DAIRYING

Commencing August 1st the Dairy Branch officially launched its programme of central testing of all composite samples of milk by infra-red milk analyser (IRMA), under which bi-monthly analyses of the fat, protein, and lactose content were conducted on samples obtained from more than 2,000 milk producers throughout the Province. These included samples from some 1,400 cows in 38 herds enrolled in the Dairy Herd Improvement Programme in outlying areas of the Interior.

Implementation of this project involved the setting-up of a comprehensive computer system and the engaging of a new laboratory staff, as well as the making of broad adjustments within the industry at large to familiarize all operators with the mechanics and techniques required.

The Dairy Branch laboratory carried out a total of 34,341 separate analyses during the year, the majority of which were associated with the raw-milk grading programme and with determination factors in the quality of the finished product. Regular surveys were again conducted on manufacturing milk samples for staphylococci, added water (cryoscope test), and for keeping quality.

Under the dairy farm inspection programme for the year a total of 1,827 fluid-milk premises was approved, as well as 12 producer vendors and 18 raw-milk producers.

Milk grading results this year reveal a further improvement in product quality as slightly more than 86 per cent of the farm samples checked out with bacterial counts of less than 30,000 colonies per millilitre. This represents by far the highest milk quality record in all Canada today.

Dairy plants in the Province declined again in number, as only 40 obtained operating licences from the Branch.

ENTOMOLOGY

There were no serious large-scale outbreaks of insects in 1968, according to reports of the Entomology Branch. Because of high water levels there was a heavier than usual incidence of mosquitoes in the Fraser Valley, while in the East Kootenay area the grasshopper population showed a significant rise. There was also a continuation of leatherjacket infestation in Fraser Valley pastures.

Of considerable economic importance was the discovery for the first time of the presence of Western cherry fruit fly in the Okanagan Valley. Strict control measures were immediately instituted and, with the absence in that area of the wild host, *Puenos enarganate,* it is anticipated that this pest has been effectively checked.

Work started this year on a sterile codling moth project in the Keremeos-Cawston district as a control measure, with encouraging results thus far.

The Branch was also engaged in further study of the leaf-cutter bee and factors affecting diapause, with particular emphasis on the effects of temperature changes on the pre-pupal stage.

At the Pesticide Laboratory the testing programme for pesticide residues in foodstuffs was continued, with no serious levels detected, although a few exceptions were encountered in celery and cauliflower samples. Analysis of animal and poultry feeds revealed only slight residue conditions, all well within allowable tolerances. The sole exception was found in samples originating in the area around the City of Trail.

A considerable amount of layer chromatography work was done this year. The demand for specialized testing for herbicides, both as to residues and formulation, increased noticeably in 1968. This was accompanied by a sharp increase in numbers of samples submitted for testing by private vendors.

POULTRY

Increased emphasis on trials and demonstrations in all the principal aspects of poultry husbandry was a feature of the Poultry Branch's work this year. With continued growth of this industry into highly specialized enterprises the need for more intensive staff services became more evident, requiring a careful reassessment of extension facilities in co-operation with the Canada Department of Agriculture and the Department of Poultry Science at the University of British Columbia.

The tenth Random Sample Egg Laying Test was completed this year, concluding this particular series. Whether it will be reactivated in future will depend upon the degree of interest and need in the industry. The facilities thus freed were allocated to a laying-feed trial, using four commercial feeds on three strains of Leghorn-type pullets in common use.

A study on egg size in British Columbia revealed that during the past decade the average body weight of laying pullets has declined by one-half pound to 3.2 pounds. This has made possible an increase in feed conversion efficiency with no decrease in size of eggs produced.

In conjunction with the broiler hatcheries of the Province, four separate tests were successfully completed during the year on broiler chickens. Three of these involved the determination of inherent differences in performance among different strains of birds in terms of feed conversion and percentages of undergrades. The fourth was an evaluation of commercial broiler feeds, which provided useful information for commercial breeders.

The long-standing Flock Approval Programme was broadened this year to include areas of poultry health not previously covered. Whereas the original programme amounted essentially to the blood-testing of all breeding stock for pullorum-typhoid at the 25-per-cent laying stage, the expanded version provides for a poultry health programme in which more intensive inspection and flock monitoring is established.

In response to demands from the turkey industry the Poultry Branch set up a strain test this year to measure such factors as growth rate, feed efficiency, mortality, grades, meat yields, and over-all economic returns using the four commercial strains now available. This test served as a useful means of measuring inherent productive capacity.

SOILS

Continuing the high priority given to meeting the requirements of the Canada Land Inventory Programme, the Soil Survey Branch reported on soil reconnaissance surveys involving a total of 7,800,000 acres this year. Capability ratings for forestry and agriculture covered a combined total acreage of 11,200,000, while detailed reconnaissance surveys accounted for 112,000 acres.

Detailed soil survey work was completed in Delta, Richmond, and Pitt Meadows municipalities, as well as the Pitt Polder area, and a start made on the Municipality of Maple Ridge, the last municipal area to be surveyed in the Lower Fraser Valley.

A detailed reconnaissance survey of the Kingfisher Creek area near Mabel Lake on the economics of rehabilitating decadent timber stands was conducted in co-operation with the Research Division of the British Columbia Forest Service.

Reconnaissance soil surveys were carried out in Central British Columbia in the area between Babine Lake to Ootsa Lake, from Endako as far west as Burns Lake, and in the south-east mountainous section of the East Kootenay, from Parsons to the United States border, between the Purcell Range and the Alberta border. These were designed to form the basis for applying agriculture and forest ratings.

Capability for agriculture ratings were applied in parts of the Fraser and Slocan Valleys as well as the Vanderhoof-Fort St. James area and parts of the East Kootenay region.

A total of 36 soil capability for agriculture maps was drafted on autopositives at a scale of 1:50,000, and another eight at a 2-mile scale. The former scale was also applied on 15 capability for forestry maps.

The Branch's laboratory at Kelowna continued its chemical-analyses service in keeping with this year's accelerated field work. Coding of chemical data and descriptive soil material for computer input was continued again for the Fraser Valley and initiated for the North Okanagan region during the year.

PLANT PATHOLOGY

The Plant Pathology Branch reported this year that plant diseases in British Columbia were again of only minor economic importance. A number did cause

some concern, however, including powdery mildew of fruit trees, collar rot of apple, pear, and cherry, bacterial and coryneum blight of apricot and peach, as well as bacterial and botrytis fruit rot of raspberry. In addition there was some incidence of godronia canker and mummy berry of blueberry and club-root in crucifers.

Branch reports indicate that the severe weather conditions of late December killed the vectors, aphids responsible for the spread of leaf-roll in potato crops, as well as eradicating certain virus diseases of strawberry.

Commercial tree-fruit growers were warned that the current trend toward high-density plantings of dwarf apples combined with overhead irrigation produces predisposing conditions that are favourable for development of such serious diseases as anthracnose, fire blight, and European canker. On the other hand, the introduction of leaf-wetness recorders has helped materially in the control of apple scab in the Okanagan and Kootenay Valleys.

FIELD CROPS

Continued in several areas of the Province as required was the Field Crops Branch's soils extension programme. Short courses for farmers were conducted at various locations to deal with problems of soil management and fertility. Included in this programme was a soils tour, to acquaint producers with such topics as soil-classification standards and proper interpretation of soil tests.

Fertilizer recommendations were revised during the year and a new " Guide to the Use of Fertilizers in the Lower Mainland " was published.

Fertilizer test plots established at 17 locations throughout the Cariboo and Central districts in co-operation with the research station at Prince George produced indications that higher applications of nitrogen and phosphate fertilizer are required on forage crops there.

Also continued was the Branch's soil-test correlation work on forage and grain crops. Correlation plot test work to date has revealed that almost without exception treatment based upon soil-analysis findings results in substantial increases in yield.

As a part of the annual weed-control programme, a number of field trials were carried out to demonstrate and evaluate the use of chemicals on both crop and non-crop lands. Control of noxious weeds on specified roadsides was again conducted under the Branch's supervision in co-operation with the Department of Highways, and demonstration work on the control of knapweed on ranges in the Kamloops area was continued.

During the year 16 screenings removal and two feeder's permits were issued under regulations made pursuant to the *Noxious Weeds Act,* while a total of $22,253.81 was paid out in subsidies on the movement of 3,913 tons of feed grains from the Creston area under terms of the Provincial Freight Assistance Policy.

LIVE STOCK

This year the Live Stock Branch reported that the general incidence of disease in the Province's live-stock population continued at a relatively low level. Veterinary Inspectors were most specifically concerned with leptospirosis, enzootic pneumonia of calves, and vibrionic dysentry, the last-named having been designated the main disease problem.

In the 12-month period ended June 30th the number of calves inoculated under the Federal-Provincial Brucellosis Control Programme declined further to

only 12,435 from 60,903 in the preceding period, indicating that the official policy of de-emphasizing calfhood vaccination is gaining broad acceptance.

Routine inspections for foot-rot were completed on 5,400 sheep on five ranches during the year, prior to the issuance of grazing permits on Crown lands.

Licences were issued to 422 fur-farms with a total of some 163,000 breeding stock, the great bulk of which is mink. Also licensed were 18 live-stock public-sale yards, along with 13 yard operators and 46 auctioneers.

Inspectors made a total of 515 visits to public-sale yards during the year, in which 194,308 head of stock were checked.

Inspection services provided by the Branch at eight licensed slaughter establishments covered more than 52,000 head of stock this year, as well as some 180,000 poultry.

By mid-year there were 547 dairy herds containing 23,236 cows on test under the Dairy Herd Improvement Services, for an average of 43 cows per herd. Average production per cow rose to 12,238 pounds of milk and 475 pounds of fat. Thirty-two herds had production averages in excess of 15,000 pounds of milk per animal.

Brand Inspectors this year checked 192,462 cattle, 7,699 horses, and 17,561 hides.

Two pure-bred Charolais bulls were purchased along with six Hereford, two Shorthorn, one Angus, and one Galloway under the Pure-bred Sires Purchase Assistance Policy for a total expenditure of $7,170. Assistance was also provided for the transporting of 1,110 ewes under the Sheep Transportation Assistance Policy.

Financial assistance in the amount of $2,660 was provided for the transporting of stock for shows at Toronto, Calgary, Edmonton, and Portland, Oregon.

During the 1968/69 test season at the Beef Cattle Test Station at Tranquille, 75 bulls recorded an average daily gain of 2.54 pounds, for a total average gain of 356 pounds during the 140-day test period. This represented an increase over the figures for the previous year.

The Veterinary Laboratory at Abbotsford reported further increases in services to agricultural producers in 1968 as 9,837 animal and 36 serology specimens were submitted. Total receipts for these services amounted to $14,229.22.

EXTENSION

The Agricultural Development and Extension Branch was successful in allocating staff to programmes designed to meet current needs of the farm community, continuing a general policy established some years earlier in which increasing emphasis was placed upon specialized services rather than those of a more general nature. These services are now involved more specifically in area-leadership programmes associated with farm management, 4-H clubs, and engineering projects.

District Agriculturists continued to fill an important role in developing interest in the farm-management work of the Department, particularly in the preparation of crop-cost data sheets in co-operation with farmer groups.

In the Fraser Valley a report based upon 38 dairy-farm business records was compiled and widely distributed as a part of the dairy extension programme, which has proved useful as a means of bringing staff into closer collaboration with all groups, including associated trades in the dairy industry.

Also in the Fraser Valley, the steady encroachment of urban development into farming areas has created a number of difficulties, not the least of which is

farm waste disposal. District staff were active this year in demonstrating new techniques to combat this problem.

In co-operation with the Field Crops Branch, forage improvement work was again emphasized in most areas of the Province, as well as demonstration programmes in fertilizer usage and participation in plant variety trials. This involved a fully co-ordinated series of meetings, farm tours, and field-days in which staff personnel actively promoted sound agronomic practices.

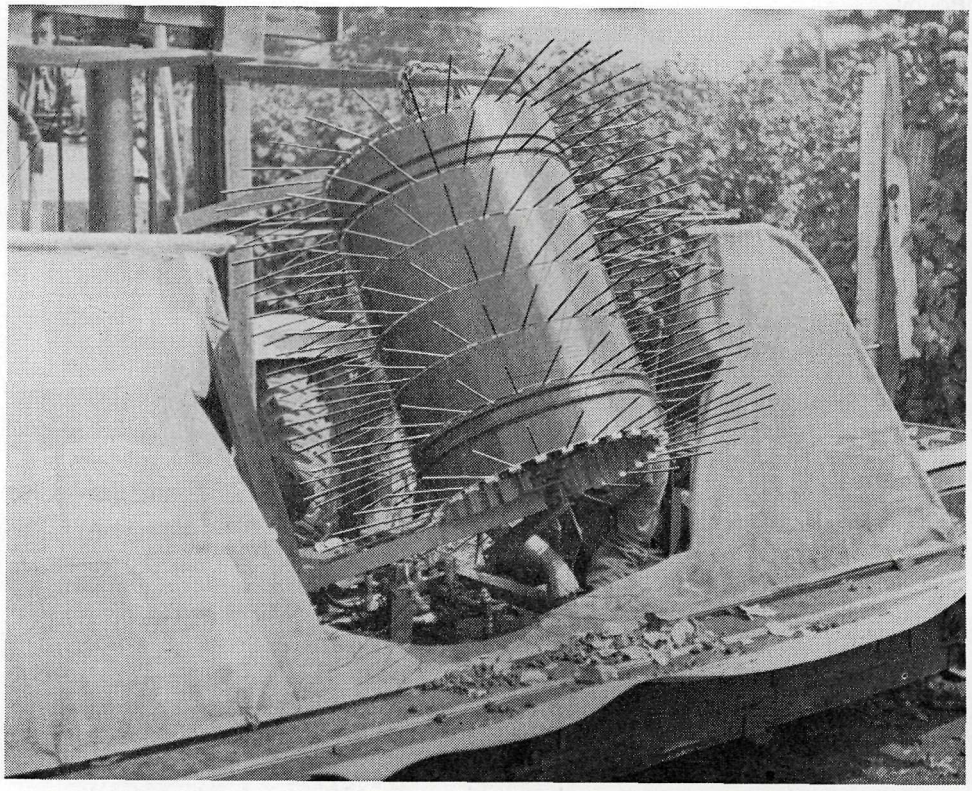
Where it appeared feasible, Christmas-tree culture was also promoted this year as more primary producers showed interest in developing suitable stands as cash crops.

The Branch's weekly television production, "Farm Fare," was continued at Dawson Creek, where viewer interest remains high. In addition, radio tapes were prepared for wide distribution in those areas where the farm sector of the listening audience forms a significant part.

A survey of all 4-H Clubs' activities early this year revealed that membership had again increased slightly to a total of 3,550 young people in 239 clubs. These participated in a variety of 17 projects, each at different levels of activity.

A new leathercraft project attracted some interest this year, but clothing, beef, and dairy clubs continued to lead in popularity in terms of total membership.

Exchange programmes saw a delegation of 4-H Club members from Hawaii visiting British Columbia for the first time. Other exchange programmes involved interprovincial group visits.



Prototype raspberry harvester developed by the Engineering Division of the British Columbia Department of Agriculture.

Expansion and specialization of services was a feature of the Agricultural Engineering Division's activities in 1968. A branch was opened at Dawson Creek to provide a more direct line of assistance to primary producers in the more northerly areas of the Province, while the Victoria office added a specialist in the power and machinery field.

Following initial demonstrations, the raspberry harvester developed by the Division underwent further modifications this year. These included provision for pneumatic cushioning and sorting of the berries on the machine. A total of $7,000 was contributed by growers and processors toward the development of a unit which will incorporate these modifications and a vibrating-drum shaker that successfully passed field tests during the summer.

The workshop approach to irrigation problems proved successful as a means of equipping the potential irrigator with sufficient basic knowledge to enable him to obtain optimum results.

Further work with farm structures, including a computer programme to determine the most effective design material for the varying conditions encountered in different areas of the Province, was initiated during the year. Part of this programme involved design services to meet the current needs in waste disposal.

The automatic filling device for apple packaging, successfully introduced last year, was found under operating conditions this year to effect an estimated 400-per-cent saving in labour.

Under terms of the *Farmers' Land-clearing Assistance Act* there were more than 500 loan applicants throughout the Province in 1968. By the year's end 177,775 acres had been cleared and 86,828 acres broken.

HORTICULTURE

Increased emphasis on demonstration projects highlighted the activities of the Horticulture Branch in all major producing areas of the Province. These included variety trials, weed-killer tests, pruning methods, and integrated pest-control measures among others, all of which can have a most important influence on crop production.

While it has now been recognized that British Columbia's orchards require renovation, no one method of achieving this has been shown to be the best. In view of this, the Branch spent considerable time and effort on such matters as tree-training, rootstocks, irrigation, and other related aspects of advanced husbandry.

In the field of tree-training, demonstration work was carried out on training on single and double wires, tying down, hedging, short and long pruning, and in the use of spreaders.

Interest in this broad subject has been heightened by the discovery of spur-type McIntosh trees in the Okanagan, which can pave the way to more intensive production per acre.

Orchard spray programmes continued to occupy much of the staff's attention as more sophisticated application techniques became available together with new formulations, all of which required careful checking prior to their inclusion in spray recommendations.

An orchard mite counting service was introduced at Naramata this year with considerable success, resulting in tangible savings in spray costs to a number of the grower participants.

In the vegetable industry a number of variety trials in randomized block design with replications were conducted, along with a replicated variety trial of carrots.

Also placed under the trial programme were nine varieties of cauliflower from Australia to check their adaptability to British Columbia conditions.

Further work was directed to problems arising from the growing of greenhouse tomatoes in sawdust. Particular attention was devoted to such basic matters as optimum depth of the medium in relation to moisture supply. New varieties of tomatoes were also tested, while the incidence of root-knot nematode was successfully checked.

A new strawberry variety, Cheam, was introduced and after extensive tests showed promise for its resistance to root diseases.

MARKETS AND STATISTICS

Increased interest in marketing problems affecting a wide variety of products required more than usual Branch attention during 1968. As producers continued to encounter rising costs of distribution they directed appeals for advice and assistance on marketing techniques. Associated with these matters was a renewed interest in marketing legislation, which resulted in the formation of a marketing board for cranberries, and applications from producers of head lettuce, processing beans and corn for inclusion of these products under existing legislation.

Producers of greenhouse tomatoes and cucumbers also requested and received assistance in preliminary moves toward formation of a marketing board.

Demand for statistical information continued steadily throughout the year as such agencies as banks, farm-equipment firms, and farm organizations sought detailed data. In addition, students from secondary to university levels showed increased interest in farming figures over a wide front.

The food-consultant service included television displays and demonstrations throughout the year in addition to active promotional activities designed to stimulate consumer interest in British Columbia farm products. Radio tapes were also produced for this purpose.

A highlight of this service was the support and leadership provided for the popular "Acres of Food " show at the 1968 Pacific National Exhibition.

The weekly television series presented over Kamloops and Kelowna outlets continued to gain public acceptance of the wide variety of programme material offered. Improved equipment provided a higher standard of filmed presentations this year.

The Farm Economics Division continued to expand its services under the Farm Business Management Programme following the completion of 278 individual analyses covering dairy, live stock, poultry, grain, and vegetable enterprises as well as mixed-farming operations. This year services were extended to orchardists, to include a mail-in type of data collection. This led to the development of the Stream Accounting Method (SAM) for this particular industry, which was also offered to poultry producers.

In-service workshops were held to familiarize staff personnel with analytical principles, and farm-manager meetings for interested farmer clients were held at a number of centres, during which economic principles, accounting, and budgeting methods were outlined and discussed.

OTHER SERVICES

A total of 102 active Farmers' Institutes embracing a membership of 4,751 was reported by the Farmers' Institute Branch for 1968. The Institutes' Advisory Board submitted 57 resolutions at its annual meeting, and presented a brief to the Cabinet

at the same time dealing with such matters as rural electrification, land expropriation, and taxation, etc.

The Branch also reported the holding of 56 exhibitions and fall fairs throughout the Province, to which grants were made totalling $114,000.

Five grasshopper-control areas received advances for control and extermination purposes in the amount of $45,000, and eight pound districts were constituted during the year, while the boundaries of nine existing districts were extended.

In general, the operation of the institution farms continued throughout 1968 as in the immediate preceding years. High milk-production levels were again maintained in the dairy herd at Colony Farm. Two gold ribbon certificates in recognition of individual lifetime records of over 200,000 pounds of milk have now been received in addition to the recording of a number of 100,000 pounds-plus achievements. Sales of breeding stock have included shipments to the United States and Korea, while bulls of outstanding production were purchased by artificial-insemination centres at Milner and Chilliwack.

Sales of polled Dorset sheep this year included a consignment of 17 ram lambs to Mexico. Sales of swine continued at a brisk pace and included several to United States buyers.

The Apiary Branch reported the detection of 206 cases of American foulbrood from a total of 12,100 commercial colonies during the year. A further 1,278 cases of European foulbrood were detected and received corrective treatment. In addition there were 15 cases of sacbrood and 10 of nosema reported.

Work was continued on the problems associated with overwintering of bee colonies, as some 22,700 were kept at Southern Interior and Coastal points with losses of less than 3 per cent.

The introduction this year of coverage for cereal grains brought to four the crop insurance programmes administered by the Crop Insurance Branch, the others covering tree fruits, berries, and grapes. Altogether there were 1,075 policies in effect, covering a total risk of $7,099,673, while the total premium income amounted to $530,025.13.

Claims for losses incurred in 1968 totalled 547, representing damage incurred through unfavourable weather conditions.

Under the *Agricultural Rehabilitation and Development (British Columbia) Act* (ARDA) there were 24 projects approved this year. This brought to 127 the total number approved since ARDA operations were commenced in 1963, for which total expenditures either expended or committed now stand at an estimated $27,531,413. Most of these are shared on a three-way basis among the Federal and Provincial Governments and the local organization concerned.

During 1968 the first composite map under the Canada Land Inventory, covering the Prince George Special Sales Area, was completed. This map provides a scientific evaluation of the best typical land use in the area, which will serve as a useful guide for land-management consideration. Similar maps covering lands west of Prince George and in the Rocky Mountain Trench are expected to be completed shortly.

A total of 104,962 publications was distributed and close to 850,000 mimeographed sheets run off by the Publications Branch during 1968.

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