

Major Activities Conducted At Experimental Farm In '55

For 46 years, meteorological records have been kept at the Experimental Farm, Charlottetown, and the following comparisons are made for the year just ended:

The mean temperatures for the months of January and February were 5 degrees higher than the 46 years average. Temperatures from March to November did not deviate more than a degree from the normal. December temperatures recorded to date would indicate that the mean temperature for the month will be at least 3 degrees below normal.

Coldest days of the year were February 1st and 2nd, when 14 degrees below zero was recorded. The warmest days were the 4th and 10 of July when 87 degrees was recorded. The total precipitation for the year was approximately 3 inches below normal. There was no extremely heavy rainfall, and with the exception of the period from June 26th to July 14th, when only .51 inches of rain fell, there was sufficient precipitation for the growth of all crops.

The hours of bright sunshine were down by 300 hours in 1955, and the month of May set a new low record when only 122.1 hours were recorded in comparison to the long-time average of 206.3 hours.

Seasonal conditions were such as to give average to above average yields of potatoes, fodder corn, pastures, hay and clover, slightly below average yields of oats and poor yields of mangels and barley. Generally speaking, weather conditions were satisfactory for field work.

STAFF

Two members of the professional staff, namely Graeme Boswell and James Nicholson, were granted leave of absence for post-graduate studies. Mr. Boswell is now at Macdonald College taking an advance course in Soil Chemistry, and Mr. Nicholson is at Cornell University, Ithaca, New York, taking courses in Animal and Poultry Breeding. Both will return to their duties at the Farm in late spring.

Changes in the staff included the appointment of Lane Douglas to the position of Poultryman, and the reclassification of a number of full-time prevailing rate employees to classified positions, namely: Harold MacRae, Farm Foreman at the Upton Farm; George Reynolds, Maintenance Craftsman; Charles Moore, Maintenance Craftsman; Ernest MacMillan, Gardener; James Williams, Herdsman; Harold Storey, Herdsman; Frank Gaudet, Ploverman.

PUBLICATIONS

"Experimental Farm Highlights," a joint publication of the five Experimental Farms in the Atlantic Provinces, was published in July of 1955, and is now being distributed to farm organizations and interested individuals. This is a very useful publication and gives the results of the major experiments conducted during the year 1954.

"Crop Variety Guide for the Atlantic Provinces" was revised during the year and is now being distributed. This publication gives a list of the varieties of cereals, forage plants, small fruits, tree fruits and vegetables recommended in the Atlantic Provinces. Because of the great variety in temperatures and soil conditions, the five Provinces are zoned, and the recommendations are made for zones. Both publications are available on request to any of the Experimental Farms in the Atlantic Provinces.

VISITORS

As in former years, many visitors from the town, cities and country came to the Experimental Farm to study at first hand the work being investigated, and to seek information on farm problems. Many school children came for picnics and to collect insects, plants and seeds of various kinds for school projects. Technical groups, such as the Agricultural Institute of Canada, the Federal-Provincial Conference, R. O. P. Inspectors, and Poultry groups, used the Station facilities for various purposes.

The 4-H Clubs of Prince Edward Island had a mammoth Field Day in August where a King and Queen of the 4-H Clubs were crowned. This ceremony was followed by a parade through the streets of Charlottetown.

A Chicken Barbecue was held under the jurisdiction of the P. E. I. Poultry Industry Committee. Various Breed Associations, and particularly the Ayrshire and Guernsey Breeders, held their Annual Meetings at the Farm. The

Federal-Provincial Agricultural Council was held at the Experimental Farm in February. This is an annual event where all Federal and Provincial agricultural workers meet for several days for the purpose of acquainting one another with the activities of their various departments and for making plans for studying new problems and for co-operating one with another.

The total number of visitors during the year was approximately 8,900. Among these were 40 organized groups. Owing to the proximity to the City of Charlottetown, many of the visitors are urban people. A total of nearly 5,000 were classed as urban. A surprising number of visitors from the United States and other parts of Canada visit the Farm.

APICULTURE

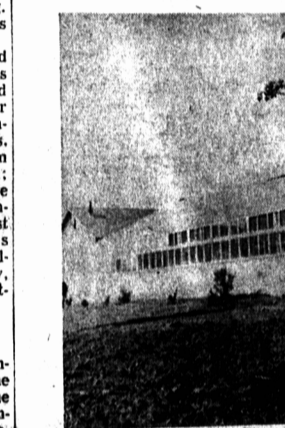
Despite heavy queen losses and unfavourable weather during the month of June, and the first two weeks of July, the beekeepers in the Province produced an average crop of honey.

Studies on the value of the antibiotic, Fumidil B, for the control of Nosema in bees, were continued at the Apiary at this Farm. The value of bees as pollinators for cucumbers was studied with the co-operation of Mr. Malcolm MacNeil, Long Creek; Mr. Claude Vessey, Tryon; Mr. Lewis MacDonald, Cornwall; and Mr. S. A. Drake, West River. The testing of hybrid queens from the Ontario Agricultural College Apiary at Pellee Island, and the manipulation of queens in package colonies, were also major projects.

The Apiary Division, in co-operation with the Provincial Department of Agriculture, imported and supervised the distribution of 620 two pound packages of bees which were obtained by 110 beekeepers.

ANIMAL HUSBANDRY

At the end of the year, the herd of Ayrshires at the Experimental Farm numbered 79, of which 15 are left with the mother for



GREENHOUSE BUILT IN 1955 FOR CEREAL BREEDING

which 40 were breeding females, 32 young cattle, and 7 herd sires. Three of the latter were on loan from breeders.

The average production of all cows completing a lactation during the year was 9,844 lbs. of milk and 442 lbs. of fat, from an average lactation of 316 days. Compared with the average for the breed, the index for milk production was 118 and for fat production 129.

In line with the herds on the Experimental Farms across Canada, a uniform feeding, breeding and management schedule is followed. The meal mixture used for the milking herd during winter is composed of crushed oats, 500 lbs.; crushed barley, 200 lbs.; wheat bran, 200 lbs.; linseed oil meal, 100 lbs. This mixture is fed at two rates of one pound to four pounds of milk produced. On pasture, the milking cows receive a simple meal mixture composed of 600 lbs. of oats and 400 lbs. of barley. Cobalt iodized salt is fed at the rate of 1 per cent of the meal mixture and steamed bonemeal at the rate of 2 per cent. In addition, the cows are given free access to a salt lick.

Dry, pregnant cows are fed a mixture composed of oats, 500 lbs.; barley, 200 lbs.; bran, 200 lbs., and are fed at the rate of one half pound of meal per 100 pounds of body weight, daily. The mineral mixture for the dry cows is slightly different from that of the milking cows. Bonemeal is replaced with monosodium phosphate. The monosodium phosphate is fed at the rate of 3 per cent of the meal and the ground cobalt iodized salt at 1 per cent. The feeding of monosodium phosphate to dry cows, in place of

RESULTS OF FEEDING GRASS SILAGE TO MILK COWS

An important experiment comparing the feeding of grass silage to milk cows has been conducted. The results show that silage feeding is beneficial, particularly in winter months. The silage was found to be a valuable source of roughage and nutrients for the cows, leading to improved milk production and overall health. The experiment was conducted over a period of several months, with careful monitoring of the cows' health and milk output. The silage was prepared from high-quality grass, and the cows were fed a balanced diet including the silage, concentrate feed, and hay. The results of the experiment were highly encouraging, and it is expected that silage feeding will continue to be a key component of dairy farming in the region.

LOOSE HOUSING FOR YOUNG CATTLE AT UPTON FARM BRINGS SATISFACTORY RESULTS.

Experiments conducted at Upton Farm have shown that loose housing for young cattle is a more practical and economical method of raising them. The results indicate that loose housing allows for better health and growth of the calves, as well as reduced costs for the farmer. The calves were able to move freely and graze on natural pasture, which provided them with essential nutrients. The loose housing system also allowed for easier management and monitoring of the calves. The results of the experiment were highly positive, and it is recommended that loose housing be adopted by other farmers in the area.



MR. R. C. PARENT, Superintendent, Experimental Farm

bonemeal, appears to have lessened the incidence of milk fever, and other breeding troubles. From six months to one year of age, breeding heifers are given a meal mixture composed of oats, 500 lbs.; barley, 200 lbs.; bran, 200 lbs.; and oilcake meal, 200 lbs. No meal is given to heifers from one year of age to two months before freshening. All animals in the above categories are given good pasture in summer and good quality hay and silage or roots in the winter. Ayrshire heifers are bred at eighteen months of age.

CALF FEEDING

Many farmers have commented on the fine appearance of the young calves at the Experimental Farm, and, for the benefit of those interested, the feeding schedule is given below: The calf is left with the mother for

12 to 18 hours after birth. This allows ample time for the calf to get a good feeding of the colostrum milk. For the next 12 to 18 hours, no feed is given to the calf. It is then given whole milk, preferably its mother's, at the rate of 4 lbs., morning and evening. After the first week, a small amount of water is added to the milk at each feeding until two pounds of water have been added to make a total of 6 pounds of milk and water.

After four weeks, the milk is gradually reduced, and at 8 weeks, the milk is stopped. The total amount of whole milk fed is slightly less than 400 lbs. No skim milk is given.

Calf starter, in pelleted form, is fed as soon as the calf is interested, that is, at about ten days of age. After two months this is gradually replaced by a mixture of oats, 500 lbs.; barley, 200 lbs.; bran, 200 lbs. and oilcake meal, 200 lbs. This is the same mixture as is given the dry cows and is fed at the rate of from three to four pounds a day up to one year of age. Good hay is available, in racks in front of the calves at all times. A mineral mixture of 1 per cent cobalt iodized salt and 2 per cent steamed bonemeal is also kept before the calves. The same is true of drinking water. Spring and summer calves are kept in the stable throughout the summer. Fall and winter calves are put out to pasture in the spring. All calves are dehorned prior to ten days of age.

GREENHOUSE BUILT IN 1955 FOR CEREAL BREEDING

Construction of the cereal greenhouse was completed. This greenhouse will be used to breed new varieties of grain for the Maritime Provinces. It is fully equipped with modern heating and lighting facilities to permit two crops to be grown during the winter months and thereby hasten the development of better varieties.

Records of the past three years provide some interesting observations concerning sowing and sowing grasses and clovers under different methods of handling. In a trench silo filled with thirty-three tons of long grass, in 1953, there was a total loss of 45 per cent through spoilage and shrinkage. From thirty-eight tons of chopped grass stored in the same silo in 1954, losses amounted to 31 per cent. Losses in upright silos filled with chopped grass were 18 per cent in 1953 and 23 per cent in 1954. Experience indicates that, if the moisture content of silage ranges from 65 per cent to 70 per cent, losses through shrinkage and spoilage are at a minimum.

CEREAL CROPS

Seasonal conditions in 1955 were not favorable for cereal production. Except for a short period in the latter part of May, the spring was wet and much of the grain crop was not seeded until well into June. Hot, dry weather in the early part of July contributed to short-strawed crops and probably had an effect on filling, particularly on late sown and late maturing varieties. There were no bad storms to cause severe lodging, but harvest weather was wet and difficult.

When crops were surprisingly good in spite of an adverse season. As a rule wheat is sown on reasonably good land and an effort is made to sow it early. This tendency, together with well adapted varieties, such as Acadia, provide some assurance of a favorable crop.

The barley crop on many fields was almost a complete failure. There appeared to be two major reasons for the barley failure. Aphids appeared on the plants in early July and multiplied until the leaves were almost completely covered. A disease, believed to be yellow, made its appearance at the same time and is thought to have been spread rapidly by the aphids. As a result of the insect and disease attack many barley plants failed to produce heads and those that did head-out gave very low yields. Crops that were planted in May escaped much of the damage, but late seedings suffered severely. Although there seemed to be some difference between varieties in their susceptibility to aphids, all of the commonly grown ones were badly affected. Malathion spray will give good control of aphids.

Barley jointworm injury, in the Charlottetown area at least, was much lighter than in the past two or three years. Parasites appear to be playing an important part in reducing jointworm fly populations.

Oats, the major cereal crop in the province, was extremely variable this season. Many fine crops were harvested but, in western Prince County especially, the general yield was much below average. Where oats was grown in mixture with barley, the aphids on the barley usually spread to the oats plants and damaged the crop to some extent.

Both leaf and stem rust were fairly prevalent, but, thanks to the fairly general use of resistant varieties, losses from these diseases were not too severe.

Septoria, or barley stem, as it is valued at more than five hundred dollars per acre can be obtained by the use of this variety.

White Clover, A Serious Pest in Upland Cranberries, Is Inoculated by Application of Complete Fertilizers

Experiments conducted at Blooming Point, on upland cranberries, have shown that the use of a complete fertilizer, such as 5-10-10, greatly increases the stands of clover and is detrimental to vine stands and yield. Nitrogen applied alone has given an excellent growth response with no increase in clover population. Ammonium nitrate or sulphate of ammonia, applied at the rate of 135 lbs. per acre in conjunction with 200 gallons of varol, greatly increases cranberry yields with no increase in weed competition.

Some Outstanding Dahlia Varieties

Over eight hundred dahlia varieties have been tested at Charlottetown in the past fifteen years. The present collection consists of some two hundred named varieties, a number of which are quite outstanding.

Among the best of the large-flowered varieties are the following: Kid's Climax, Crocydon Van Edes, Coase Fire, Earl Baldwin, Mrs. Healer Pape, Nancy Scherzag, Rockley Moon, River Jordan, Monarch of the East, Diamond Jewel, Amos Kirby, Carolina Maid, Barbarosa, Evelyn Chandler, Giant of Baarn, and Searchlight.

HORTICULTURE

Virus-Free Strawberry Selections Widely Outbred Regular Stock.

The most recent advance in strawberry production is the indexing and release of a number of virus-free varieties. While only three virus-free selections were fruited in 1955, some sixteen are now being propagated at the Charlottetown Farm. These are as follows: Sena, a variety of Dunlop, Catskill, Premier Sparkle, Albritton, Vermilion, Pocahontas, Tennessee Beauty, Tennessee Shipper, Armore, Robinson, Stelemaster, Massey, Dieliland, Blakemore and Midland.

The three varieties grown in sufficient volume for fruiting in 1955 were Catskill, Premier and Sparkle. The yields obtained are as follows:

Viruses-free Vs. Non-virus-free Strawberry Plants

Variety	Viruses-free Qts. per acre	Non-virus-free Qts. per acre	Difference Qts. per acre
Catskill	13,369	5,837	7,532
Sparkle	13,006	9,318	3,688
Premier	12,614	8,832	3,782

Promising New Raspberry Variety

Recent tests at the Charlottetown Farm have shown the new Ottawa seedling, 0-333, to be very desirable from the standpoint of quality, hardiness and yield. During the winter of 1954-55, 0-333 suffered only light cane damage, while others, such as Washington and Marcy, were severely injured. 0-333 is a medium-sized berry of bright, attractive appearance and firmness.

Other varieties of merit which have been tested for longer periods are, Madawaska, Trent and Rideau.

Maine No. 2 Cucumber Outstanding in Variety Tests Conducted in 1955

Maine No. 2, the pickling variety most widely grown in Prince

Edwards Island, greatly outyielded all other pickling varieties in our 1955 tests. Our records show that, under ideal conditions, a crop valued at more than five hundred dollars per acre can be obtained by the use of this variety.

well and showed very rapid recovery after cutting. Winter killing of this variety has been reported from other Stations, but none has been noted at Charlottetown to date. Atlantic and Socheville also showed up well in the first year of the test. One of the newly developed, creeping-rooted, strains was also harvested for the first time this year. Growth was slow during the early part of the season and yields were low average. Very little evidence of creeping was noted, but it is probable that this strain will do better when firmly established.

A large test of red clover varieties was also conducted in 1955. LaSalle, Ottawa and Dallard were the top producers and were very close to each other in performance.

The corn test in 1955, produced excellent yields from all varieties. Algonquin was the highest yielding hybrid tested. Longfield, an open-pollinated variety, was also a high yielder although immature when harvested. Pioneer 308, Canada 275 and Canada 355 were at the ideal stage of maturity for silage making when harvested on September 23rd. They produced good yields. D. Kab 65 produced an excellent yield, but was very immature when harvested.

Seven mixtures of grasses and legumes for pasture are on test at the Farm and at four Illustration Stations. These were harvested for the first time in 1955. It was noted that any of the mixtures containing orchard grass were excellent producers as were the mixtures containing red clover. The more apparent was the red clover dies out and the various

peaches of Hardy in Prince Edward Island.

While isolated reports of the successful culture of peaches have been received at this Farm, tests conducted with eight varieties have not substantiated this claim. All the varieties tested during the winter of 1954-55 were completely killed out.

Puregold Snap Bean Outstanding in Bean Trials

Puregold is the highest yielding of all snapbeans tested at Charlottetown. This is a round-podded variety of excellent quality. While somewhat late maturing, it

grows well in various climates. A small acreage of fall rye is grown annually, mostly for erosion control and for green manuring. Winter wheat is not grown at all. For the past two years, a small test of winter wheat has been grown at the Charlottetown Farm on an area heavily infested with Wild Radish. The results indicate that a satisfactory crop can be harvested and excellent control of Wild Radish obtained. Radish plants which germinate in the fall do not survive the winter and those that sprout in the spring are usually smothered by the rapidly growing wheat. Good drainage and early seeding, not later than mid September, are essential for success with winter wheat. Fairfield and Edes have proven to be satisfactory varieties for Prince Edward Island.

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SOIL LABORATORY UNIT

Greenhouse tests to study the response of grain to different combinations of plant nutrients required were continued on three soil types, O'Leary, Charlottetown and Culloden.

The results so far indicate that nitrogen is the most important nutrient on all the soils. The results also indicate some variation in the response to phosphorus and potash on the different soils under test. Phosphorus was relatively more important on the Charlottetown and O'Leary soils than was potash, while, on the Culloden soil, the trend was for a higher potash requirement.

During the year 400 samples of soil were received from farmers for soil advisory purposes and fertilizer recommendations.

ILLUSTRATION STATIONS

Experiments of a fact-finding

Illustration Stations operators have found close grazing to be very essential for the establishment and production of Wild White clover. Where livestock fail to keep the pasture properly grazed, particularly in early spring, periodical mowing has been found most advantageous in keeping the pasture sward in a vigorous growing condition. Grasses are thereby not permitted to shoot into head. The spread of noxious weeds is also controlled.

Interesting studies are being conducted at Alliston in connection with tree fruit and blueberry production. Various types of mulch, such as black muck, straw manure, sawdust, potato tops, litter, etc., are being compared in the establishment of a young orchard where an extremely light sandy loam prevails. To date, satisfactory growth is being obtained by all varieties of trees subjected to this test. Insufficient time has elapsed to evaluate any particular type of mulch though such treatment is of vital importance in the establishment of a young orchard on this particular soil type.

Pruning of blueberry plants by burning every second year or once every three years has given rise to a more complete and vigorous growth of plants. Studies to date indicate that burning every second year is the more satisfactory means of managing blueberry barrens.

The Illustration Station program in the Magdalen Islands to date has consisted mainly in improving and beautifying the home surroundings, introducing and evaluating varieties of vegetables, cereals and improved varieties of high resistant potatoes, as well as introducing new types of farm machinery. Seven grass and legume mixtures for hay and pasture have also been established in small plots in order to determine their adaptability. The latest recommended varieties of alfalfa, early red clover, timothy and other grasses were utilized in establishing the seed mixtures.

Canoe, a light resistant variety of potatoes, proved highly resistant to blight infection during the year in this particular region. Other varieties, including Irish Cobblers, Warba, Green Mountains and Island McIntyre, became seriously infected with blight early in the growing season. Pasture fertility studies have been initiated at the Magdalen Island Stations. Results to date indicate marked response to applications of a complete fertilizer.

FARM REVENUE

Farm Business Studies conducted on seven Illustration Stations in the Province indicate that farm

revenue for 1955 was practically the same as in 1954. The business studies over a period of years show clearly that the latter condition is the most profitable, and it would appear sound to recommend that one means of improving the farm economy of Prince Edward Island would be to develop the larger unit, that is, one large enough to support a two-man enterprise. Such a system provides for sickle, holidays and other necessary absences from the farm. In addition, the larger unit makes much more efficient use of machinery such as tractors, binders, manure spreaders, etc.

Farm Business Studies, over a period of years, have also shown the important role that livestock and poultry play in the economy of Prince Edward Island Agriculture. These items are generally responsible for from 65 to 70 per cent of the farm revenue, whereas potatoes and other field crops account for the remainder. One unfortunate factor is that many of the dairy herds are too small. For example, 87 per cent of herds in Prince Edward Island have less than eight milk cows. A unit of this size is not economical for the use of milking machines and other modern equipment. Farm Business Studies indicate that a larger part of the total farm expenditure from year to year is for the purchase and rental of farm machinery. Many farmers would profit by operating with their neighbors in the joint ownership of at least the heavier types of equipment.

GENERAL OBSERVATIONS

Farming in Prince Edward Island has many advantages and some disadvantages. While the soil is not as rich as that in some parts of Canada, it is very easily worked and responds well to treatment.

Climatic conditions are such that most crops, with the exception of tender fruits and vegetables, can be grown profitably. We have ample moisture, rarely do we have drought periods and, near still, floods.

We have reasonably good markets provided we concentrate on the production of those crops needed in our area. For example, the Atlantic Provinces, as a whole, are deficient in practically all farm crops except apples and potatoes. Each year we import into the three Maritime Provinces many thousands of tons of agricultural products in excess of the amount exported. Grains, meat, some dairy products (particularly powdered milk) and most items of fruits and vegetables are deficient.

Among the disadvantages, and possibly the chief reason for much of the unprofitable farming, is the small farm unit which does not lend itself to the efficient use of modern machinery. The trend towards larger units is apparent from the last census, which shows that the number of farms on Prince Edward Island has diminished by nearly 2,000 since 1941, and the area per farm has increased by ten acres.

Farmers must take full advantage of every means of assistance at their command. We have always observed that the most prosperous farmers are those who freely use the service of the Experimental Farms and other Government Departments, read farm journals, follow the farm broadcasts and thus keep well posted on farm problems, market trends, new developments, etc.

The staff at the Experimental Farm, Charlottetown, is ready, at all times, to give assistance where possible, and will welcome visitors to the Farm. It is their wish that 1956 will be more prosperous agriculturally than 1955.

well rotted manure (8 to 10 tons per acre) applied in the fall once every three years have not only encouraged the establishment and growth of Wild White clover and native grasses but have served to prolong the grazing period carrying the pasture through lengthy dry spells. Over a six year period, annual increases of 2.96 tons per acre of green herbage have been obtained. When this manure treatment was supplemented with an annual spring application of 600 pounds 5-10-10 per acre an average yield of 19.34 tons of pasture herbage was obtained compared with 10.45 tons of green forage obtained on the untreated check plots. Early spring applications of a complete fertilizer have given an average increase of 1.33 tons of forage per acre over plots receiving similar applications (600 pounds 5-10-10 per acre) in the fall.

Close grazing

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CLOVER CREST NEW DESIGN IS USED IN ARTIFICIAL BREEDING

A number of variety tests were carried out by the Forage Division in 1955. A large test of alfalfa varieties, seeded in 1954, was harvested for the first time with some of the newer varieties showing up favourably. Rhizoma alfalfa produced the highest yield on an average of two cuttings. The variety DePuits yielded

suited for cutting, the following have real merit: Brandaris, Madam Elizabeth Sawyer, Hylas, Moeder Aartsen, Riesenwunder, Willy Flaton, Corona, Spirit, Joke, Clair de Lune and Yellow Special.

The best of the poms now under test are: Red Baby, Mimosa, Light Ball, Millionaire, Mary Mums, Madeline, Gold Rush, Regal, Pooka and Little Dirk.

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