

Dairy research has for one of its major objectives the development of methods of measuring the quality of raw milk. The resazurin test developed in the Departmental laboratories has been accepted as an official method for milk analysis and further study is being given to the use of this test. Projects have been set up to study and control defects of flavour and texture in the making of cheddar cheese and also for determining setting time in cheesemaking. Control of quality in butter and of the development of surface discoloration of print butter are being investigated.

Studies in food micro-biology are aimed at determining the factors that affect quality in dried-egg products as well as the preservation of fruits and vegetables by freezing and the causes of spoilage in canned vegetables.

Fundamental studies of soil organisms are being conducted as a basis for application to practical problems. Research is also being conducted on the inoculation of seed and soil by nitrogen-fixing bacteria; on micro-biological methods of evaluating soil fertility; and on soil micro-organisms in relation to soil-borne plant diseases and plant deficiencies.

Weeds constitute one of the more important problems with which the farmer must contend. In the botanical laboratories, research is in progress on the occurrence and distribution of weeds throughout Canada. Life histories of weeds are studied together with methods of control of certain species. Physiological studies on the effects of herbicides are being carried on.

A wide range of plant-disease problems is under investigation at the pathological laboratories across the country. Attention is being given to the destructive diseases that affect the native forest species and to the pathological effects of silvicultural treatment of forest stands. Investigations are being made into the destruction of timber caused by wood-destroying fungus species.

In an effort to reduce the losses from seed-borne diseases of crop plants, seed-testing techniques are being investigated with a view to determining the presence of pathogenic organisms in or on the seed. Various commercial disinfectants and seed-treating machines are under test to determine their value in the control of seed-borne diseases.

Diseases of cereal and forage crops are under constant study with the object of evolving effective measures and developing resistant varieties which will produce satisfactory crops in the presence of disease organisms. Similar investigations are under way with horticultural crops. Here the emphasis is on crop protection and disease control rather than on the development of resistance. In the case of certain crops, however, notably potatoes, breeding for disease resistance is being carried on co-operatively with certain experimental farms.

In the chemical laboratories of Science Service, research projects are in progress on animal nutrition, food investigations, vitamin study, soil fertility and plant chemistry. Factors affecting the digestibility of feeds and an evaluation of feeding stuffs on the basis of digestibility trials with different classes of farm animals will provide useful information for the live-stock feeder. Vitamin research includes studies of the technique of biological assay, the interrelationship between Vitamin D and certain minerals, methods of determining the content of Vitamin D and the mode of action of Vitamin A. Of interest also to the stockman is the work in progress on the tattooing of live stock for identification purposes.