

Ruakura will become a very much broader research organisation. There is a possibility that the proposed university for South Auckland will be located here, which would still further reinforce scientific strength and scientific performance."

FIELD DAY

BUSES circulating continuously round 11 demonstration points on the Station and the New Zealand Dairy Board's Artificial Breeding Station at Newstead near Ruakura enabled about 6,000 visitors during the field day to see some of the Station's efforts to make farming more productive and more profitable.

All points were manned by staff associated with the work, who had a full day's discussion with the ever-changing groups that came to admire, criticise, or inquire.

In 10 years' experience with field days Ruakura's superintendent and staff have evolved many adaptations from the first efforts of a loudspeaker vehicle perambulating from point to point with the crowd streaming after it, to the present highly organised circuit of static demonstrations linked by a continuous bus service.

A departure this year from the somewhat regimented set address at each point at regular intervals was a less formal "talking point" type of display with informal discussion of the work in progress. "Farm walks" over some of the self-contained research units within the Station were also a popular innovation.

Facial Eczema Research

Since the major advance in facial eczema research with the discovery last year of the fungus *Sporidesmium bakeri* as a toxic agent, it has been possible to concentrate further work in a more definite direction and for other research organisations to undertake specialised sections of it. The present position was illustrated with photographs and diagrams of the ramifications of the search for further light on what remains a very complex problem. Aspects illustrated and discussed by workers associated with the investigations were: The fungus and its discovery; its growth at the base of pasture plants and conditions favouring its growth; experimental animals showing lesions induced by feeding them cultured spore material; attempts to isolate the toxin and determine its chemical composition; the preparation of large amounts of fungus and extracts for chemical and analytical work; studies of the course of the disease in animals to seek methods of counteracting it; the trial of more sensitive methods of detecting toxicity of pasture; field experiments with fungicides and other control methods; and integrated work with other laboratories of the Department of Agriculture, the Department

of Scientific and Industrial Research, and the Meteorological Service.

Farm Water Supplies

Maps and diagrams showing sources and quality of ground water related to the geology of the Waikato were of considerable interest to local farmers faced with water problems in drought periods, for dairy shed hygiene, and for irrigation needs.

Vaccination in Animal Husbandry

Based on the assertion that £5 spent on an adequate vaccination programme can save £50 in a 1,000-ewe flock, a demonstration at the Ruakura Woolshed showed when and how to vaccinate ewes and lambs against a number of diseases that represent a continuous drain on farm economy. The vaccination of cattle and dogs and drenching against worms in cattle, sheep, and pigs were shown to be important factors in the keeping down of costs of production represented in livestock losses and inefficiency.

Improving the Wool Clip

Displays at the Ruakura Woolshed have been a barometer in recent years of the increasing interest in sheep in the Waikato. Papers for sheep farmers on the first day of the conference have in recent years drawn ever increasing crowds until they are now almost as well attended as the sessions for dairy farmers. There has been similar increasing interest in the field day demonstrations of techniques of producing better quality meat and wool.

A display of practices that raise and lower returns from wool, based on the premise that preparation of the clip starts long before work in the shed, drew attention that crowded the woolshed uncomfortably throughout the field day. Flock management aimed at attaining the wool buyer's requirements of count, length, strength, and evenness was shown to depend primarily on culling of flock ewes and hoggets on wool weight, breeding, and good feeding.

Winter Management of Ewes

The nutritional requirements of the breeding ewe are being studied on a self-contained Ruakura farmlet of 50 acres of consolidated peat subdivided into 17 3-acre paddocks. Theme of the field day demonstration here was that winter is the critical time in management of the ewe flock. There are periods when it is important to feed the ewe well and others when it is not so important. The work has shown that if the rams are put out on 1 March, after a month 80 per cent of the ewes are in lamb and there is no point in going on with flushing. Feeding can be tightened up and the surplus growth saved for winter feeding. During the first three or four months of pregnancy the rate of development of the lamb is slow and demands on the ewe correspondingly less, but in the last four to six weeks the lamb grows very rapidly and it is important to keep the ewe on a high level of nutrition. Efficient management entails intelligent relating of the ewe's nutritional requirements to pasture production with the aim of maximum production of meat, wool, and lamb.

Animals and pastures used in the project were inspected and discussed with Ruakura workers during a farm walk over part of the unit.

Meat Production

Recent market trends have quickened interest in beef production. Meat production per acre has been investigated for the last 10 years on 150 acres of the fat lamb farm at Ruakura divided into three 50-acre units stocked under different systems with sheep and cattle. A paper summarising results on the completion of the third three-year stage of the work (to

Papers and Speakers

- Costs and Profits of Beef Production on Fat Lamb Country N. A. Clarke
- Achieving Health and High Calving Percentage in Hill Country Cattle E. D. Fielden
- Further Studies with Hexoestrol for Beef Production G. C. Everitt
- Lamb and Beef Production under Different Stocking Systems D. E. K. Walker
- Mixed Age Versus Cast-for-age Ewes in Fat Lamb Production C. P. Tebb
- Selenium and Animal Health C. Drake, A. B. Grant, and W. J. Hartley
- Electric Fencing on Hill Country E. A. Clarke and R. G. Umlers
- Cereal Growing in the Waikato I. L. Elliott
- Fungi Affecting Pastures, Crops, and Animals I. D. Blair
- Farm Budgeting to Increase Profits W. O. McCarthy
- New Zealand Type Mucosal Disease R. M. Salisbury
- Further Studies on the Usage of Phosphates J. Karlovsky
- Proteins and Life R. L. M. Syngé
- The Rearing of Calves on Milk Substitutes I. L. Campbell
- Keeping the Dairy Herd Healthy T. Wallace
- Factors Affecting the Efficiency of Conversion of Pasture to Butterfat C. P. McMeekan
- Developments in Herd Improvement Methods Overseas A. Stewart
- The Relationship of Inheritance and Environment to Herd Production P. J. Brumby
- Management Factors Associated with High- and Low-producing Herds J. D. J. Scott and D. S. M. Phillips