

Pig Projects

Progeny-testing.—The aim of this work is to develop and test a breeding scheme involving progeny-testing with the object of improving characters commercially valuable in pig-production. Minimum performance standards for boars and sows have been established. The co-operation of the Cheltenham Dairy Co.'s pig-farm is being used to extend the scheme beyond the limits possible at Ruakura and to test the possible use of such a set-up as a means of application of the scheme to the industry.

Effect of Housing and Pasture-utilization on Efficiency of Food-conversion.—The change in pig-housing trends over the last ten years and consequent change in pasture utilization and management methods have suggested the necessity for acquiring some factual evidence on these aspects of pig husbandry. The experiment aims at finding out whether either limited or free access to pasture is better than no access to pasture, whether it is advisable to limit milk consumption to any specified level to encourage grass intake in the interests of economy and efficiency, and what effect, if any, types of housing may have upon efficiency of gain with and without grass.

The 50 Berkshire pigs involved in the trial are balanced for litters and sex effects, and are being individually fed at five different levels of intake, as under New Zealand conditions skim-milk, or some similar bulky dairy by-product, is the main source of food for pigs and the amount fed will obviously affect the pig's appetite for grass. The design of the experiment is such that it will allow an evaluation of the efficiency of food-conversion at the various levels of feeding.

Inheritance of Defects.—The performance of boars and sows in the Large White and Berkshire studs have been examined in regard to the inheritance of *Atresia ani*, scrotal hernia, and defective feet. Test matings and the culling of parents of affected progeny are the suggested lines of attack in eliminating these defects, which are more apparent in the inbred Large White herd than in the Berkshires.

Necrotic Enteritis.—The frequent finding of bacteria of the *Salmonella* genus has led to a special study of this group of organisms at Wallaceville. Specific sera are now available to make possible the identification of any *Salmonella* of animal sources. Outbreaks of the disease due to members of the group have been encountered in pigs (*S. cholerae suis*), fowls (*S. pullorum*), ducks (*S. typhi-murium*), and guinea-pigs (*S. typhimurium*). *S. cholerae suis* has been isolated from more than fifty widely separated outbreaks in swine. The role of this organism in producing disease in swine is now under investigation. By feeding living cultures it has frequently, but not invariably, been possible to produce either acute or chronic forms of the disease. An attempt is being made to find an unfailing method of transmission so that the possibility of protection by vaccines may be tested under controlled conditions.

Trace Elements

Iodized Licks.—Preliminary experiments have been carried out to test the efficacy of incorporated calcium stearate as a means of reducing iodine losses from iodized licks. Results were not sufficiently conclusive to justify the adoption of calcium stearate as a protective agent. It is proposed to continue investigations into methods of stabilizing iodized licks.

Aerial Top-dressing.—During August, 1947, an experimental aerial top-dressing with cobalt sulphate in the form of a saturated solution was successfully carried out in co-operation with the Public Works Department. For this purpose 1,800 acres of mainly hilly, bush-sick country near Taumarunui was selected. Top-dressing was at the rate of 20 oz. cobalt sulphate per acre, as previous experiments have indicated that on flat country such a rate gave protection against bush sickness for a number of years. Subsequent analyses of pasture samples have shown a satisfactory increase in cobalt content. Pasture cobalt will be checked at intervals to determine the length of time over which the top-dressing remains effective on the country selected for the experiment.