Swine Feeding Experiments at Lacombe.

BY G. H. HUTTON.

Swine feeding experiments carried on at Lacombe Experimental Farm, Alberta, in 1917, were intended to cover the questions which are being insistently put forward as to the actual value of pasture as compared with the dry-feed lot and the relative value of different pastures for hogs. Similar work had been under way during previous seasons, but not on so large a scale as in 1917, when from five to over seventy animals were used in single phases of the work. Figures as to costs of grain under different systems of feeding have been secured from car lot groups. It is felt that since the results represent average farm conditions as to numbers of hogs included, they form a basis upon which the practical feeder may safely construct his plans and direct his feeding operations. The work in 1917 provided for the more definite determination of the acre carrying capacity of the various pastures under test by holding in reserve a group of hogs from which drafts could be made or to which withdrawals could be sent, depending upon whether any group of hogs were not holding down their pastures to proper proportions or on the other hand were pasturing their area too closely.

Three groups of hogs were fed inside the same grain ration as those on the various pastures, and the comparison of cost of gains in these grounds with those on pasture is striking.

The following were the pastures used in the 1917 pasture experiments: Alfalfa, dwarf Essex rape, duplex rape, thousand-headed kale and sweet clover. Comparisons were made between the cost of making a pound of pork gain on the self-feeder on rape pasture as against feeding a three per cent. grain ration by hand on rape pasture, and both the self-feeder and the three per cent. ration fed in the dry feed lot.

The acre carrying capacity of alfalfa was low this last season, due in part, at least, to the fact that the early part of the season was very wet. The land on which this pasture was located was not sufficiently well-drained to ensure good development of alfalfa during a wet period. As to earliness, alfalfa has the advantage over any of the other pastures tested, and because of this fact, should command a place on every farm where it can be grown. It will be found ready for the young pigs when they most need the variety pasture supplies, and weeks earlier than rape, which we consider the best late pasture crop for hogs. These two pastures, alfalfa and dwarf Essex rape, make a good team for the feeder to drive together in his endeavor to cut down the grain cost of pork production. The legume is available early, while the rape pasture supplies the needful in variety for a period much later in the season than anything else so far tested. Together they stand to complete the fall pasture season, while divided they fail to meet the requirements of the hogs for the full growing period.

Duplex rape and thousand-headed kale both made a good showing for a short period only, their season last year being less than half as long as that of dwarf Essex rape. In economy of gain these pastures made a favorable showing while they lasted, but the gains did not cover a period long enough to represent relative economy of gain.

Sweet clover failed to hold its own with the other pastures, and since this is the second year such failure has been shown, it is fair to assume that this legume is unlikely to compare with alfalfa where the latter will succeed. The carrying capacity per acre is about one-third that of dwarf Essex rape when grain was fed through a self-feeder, and the grain saved per acre about twenty per cent. of that effected by the same method of feeding on rape pasture.

When a three per cent. grain ration was fed in connection with rape pasture, 4.72 pounds of grain were required for one pound of pork gain made. When the same class of grain was fed through a self-feeder in conjunction with rape pasture 4.34 pounds of grain were required for one pound of pork gain made. The three per cent. ration without pasture showed a grain cost of 4.41 pounds, while the self-feeder group, without pasture, required 6.16 pounds of grain for every pound of gain made.

The cost of gain under the three per cent. ration without pasture is not materially greater than the costs shown for the groups receiving a three per cent. ration on pasture, but the hogs were lighter at the finish on the non-pasture group, and the cost of finishing them up to the same weight would widen the spread slightly. This group averaged 103.5 pounds at the close; the self-feeder dry lot 112 pounds; the three per cent. grain ration group on rape pasture, 118 pounds; while the group on the self-feeder and rape pasture averaged 199 pounds live weight. It will be noticed that this group which showed the greatest gain made it at the lowest cost. The groups were all divided in the beginning of the tests as to litters, and were therefore practically the same age when these weights were taken.

This season the self-feeder pasture system of feeder is showing itself being most economical. It has saved feed, labor and interest on investment. Rape pasture saved 2,153 pounds grain per acre as compared with the actual cost of producing the same amount of pork on pasture, both groups being fed grain through the self-feeder. It is important to compare the per acre cost of the two systems of feeding. It would appear that the labor cost of feeding under the self-feeder system is less than one-half the labor cost of hand feeding hogs. Expressing the idea in another way, the per acre capacity for handling hogs under the self-feeder system is one hundred per cent. greater than under the hand feeding plan.

As to the method of seeding alfalfa and rape pastures, we advise sowing in drills (about twenty-one inches apart), for the reason that the hogs pass between the rows and the plants are less injured by trampling than when sown broadcast, and appear to grow with greater vigor. In order to meet the increasing consuming power of the hogs with age, the area under rape should be from two-thirds to three-quarters greater than that under alfalfa. Since the return per acre on the basis of grain saved from the area allotted to hog pasture is a liberal one it will be better to err on the side of having too large rather than too small an area of land for this purpose. I believe that an acre of rich land will produce sufficient pasture of the varieties now under consideration to carry an average of four thousand pounds live weight of hogs for the pasture season, provided they are being grain-fed through the self-feeder. This season the rape pasture (self-feeder) acre carried hogs at the rate of 9,254 pounds to the acre, for a period of one hundred and forty-six days. The land was very rich. Though alfalfa carried much less weight to the acre, we feel that the estimate above given is a safe one under the conditions set forth.

In showing a remarkable grain saving, pastures have this year only duplicated the results of previous seasons. If all the hogs being grown in Alberta were fed grain through the self-feeder, given access to alfalfa pasture in early summer, and rape pasture for late summer and fall, a total saving of tremendous volume would be effected in the grain required for the same production of pork now turned out; the hogs would go to market carrying a greatly reduced investment in labor and interest and would find their ultimate destination in two months less time than those now handled under the old system.

In order to make a broad comparison between different breeds as to the cost of producing pork, a large number of Yorkshire, Berkshire and Duroc-Jersey sows, due to farrow in the spring of 1917, were purchased from many different breeders. By such purchase the majority of the different strains of the different breeds as far as represented in Western Canada were included in the experiment. Two hundred and forty hogs was the maximum number in this test at one time.

The pigs were weaned at the same age, given the same class of pasture, and fed the same kinds of grain in the same proportions through the self-feeder. The test was begun on May 7, 1917, and concluded on January 17, 1918, when the tardy growers of the different breeds were finally weighed out.

This is the second of a series of three tests which were outlined over a year ago with the object of securing in quite a large way data as to the difference in cost, if any, of producing pork with these three breeds. A full summary of the results will not be available until the third test is completed. It might be said that the average number of pounds of grain required to make a pound of pork gain with the three breeds in this particular test was 4.99.

In view of the urgent need for increased production in 1918, let the figures showing pounds of grain required for one pound of gain receive the earnest attention of the feeder, for even at the present high prices of grain they point to the fact that a fair percentage of profit may be realized from this business, that the pig patriotic may be also be the pig profitable.

A Group of Yearling Romney Marsh Rams on a Farm in England.

An Efficient Garbage Disposal Piggery.

At this time considerable effort is being made to conserve our food supplies and Canadian cities are beginning to manifest considerable interest in the economical disposal of garbage. With this in mind, it seems opportune to present a few facts concerning the municipal garbage disposal piggery operated by the city of Worcester, in the State of Massachusetts. This information has been given to the public by Frederic Bonnet, Jr., Professor of Chemistry and Sanitation, Worcester Polytechnic Institute, Worcester, Mass. Garbage, of course, is not so valuable as it was previous to 1914, when Canadian urban dwellers practiced comparatively little thrift in the management of their households.

Worcester is one of the old and well-established cities of New England, with a population of about 175,000. It is an industrial city with diversified industries, but with no unusual characteristics. Its foreign population, according to the census of 1910, amounted to only 33.5 per cent. In 1872, when the population was 44,000, the Superintendent of the Municipal Poor Farm, began sending a wagon into the city now and then to collect enough garbage to feed the pigs. The work developed with the growth of the city until in 1917 about 70 per cent. of the garbage of Worcester (20 to 30 tons per day) was taken to the Home Farm and fed to 2,000 to 3,000 pigs. The Home Farm proper consists of 376 acres owned by the city, which leases an additional 220 acres at a rental of $1,500 per year. The city is divided into 21 districts from which the garbage is collected twice a week without charge to the householders or business men. There is also a special collection for the fish offal and rotten eggs from markets and commission houses, which collection is made daily in special cans with tight-fitting covers. These cans are provided by the dealers. Since this material is not fed to swine, but is buried, no revenue is derived from it, and it is a direct tax on the scavenger department of $1,760 per year. The teams leave the Home Farm at seven a.m., and have on an average a 13-mile haul daily (maximum 18, and minimum 10). It requires from two to four hours to make a load. Owing to the fact that Worcester has practically no alleys, the average time per house collection is 1.65 minutes (maximum 3.9; minimum 0.4).

The rules of the Board of Health require the individual householder to provide a suitable water-tight covered receptacle to keep garbage and swill until the same is removed by the city scavengers. No person is allowed to deposit in the garbage any tin cans, water, ashes, glass, sweepings, oyster or clam shells, sawdust, cork dust, old boots or shoes, dead animals, etc.

Garbage Feeding Economical and Sanitary.

With the growth of the city and the development of the garbage feeding plant, complaints began to arise as to the economical and sanitary aspect of the scheme. A committee was appointed in 1914 to investigate conditions, and the chairman reported thus: "That disposal by feeding is the most economical method; that the greatest intrinsic value of the garbage, the feeding value, is made use of; that the garbage of Worcester cannot only be disposed of without cost, but that the revenue from the sale of hogs has almost been sufficient to pay for collection." The sanitary experts reported

A Group of Milking Shorthorns at Flintstone Farm, Dalton, Mass.