

16. Give general instructions on what to do after farrowing.

After farrowing the sow will not eat for 12 to 24 hours. As soon as it is noticed that she wants to eat give a thin slop of the same feed she used to be fed before farrowing. The consistency of the slop feed and the amount should be gradually increased from day to day so that in about a week she can be given the regular amount which is all she will eat in two or preferably three feedings. Frequent visits and judicious surveillance are necessary during farrowing and for several days after in order to see to it that the sucklings are not crushed by the dam.

In the fourth day after farrowing and even on the third, if the pigs are strong and healthy, allow the dam to roam in a fenced yard or tether her in an open field for sunning and exercise. The pigs at this time begin to root and are able to obtain some minerals from the ground. In the soil there may be traces of copper necessary to prevent anemia. Every precaution should be taken to let them roam in clean ground where pigs have not been kept for sometime. They should have no access to muddy places. Such steps will greatly reduce intestinal worm infestation. It is desirable that three feedings be given two weeks after farrowing because the suckling pigs begin then to nibble. At three weeks they join the dam more regularly. When it is noticed that the sucklings try to crowd the dam it is better to let them eat in a separate feeding trough, preparatory to the day when they will have to be weaned. Some people in fact build creepers, which are contraptions so built that the young may go in and out to eat peacefully without being bothered by the dam. This is not necessary when the dam is tethered, as the feed trough for the sucklings can be placed at a distance far from the dam's reach.

It is better to keep the dam and young in-doors during heavy or continuous rain but clean clods of earth should be thrown in for the pigs to root.

17. When is the best time to wean?

When the pigs are eight to ten weeks old. At this stage the important thing to observe is whether they are eating heartily of the slop feed fed to the dam and if the pigs look strong and healthy. Weaning at this age helps the dam to recuperate quickly and enable her to breed and produce pigs earlier.

18. How is weaning done?

In weaning it is the dam that is taken away from the sucklings and placed where the young can not hear her grunts. In this way the young do not fret so much, as they are used to their surroundings. They will only miss their dam.

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PROGRESSIVE FARMING

USE HYBRID CORN FOR SEEDS

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The practical development of varieties that are inherently more productive than those now used is of great importance to Philippine agriculture. The improvement of corn through breeding and better cultural practices has occupied the attention of growers, especially of government agencies who have the technical men and the resources to conduct such experiments on crop development. In the United States, the Department of Agriculture has discovered that the utilization of two breeding methods, mass selection and breeding within inbred lines, produce hybrid corn. This latest development in corn breeding technique has produced hybrids which have established their superiority in productiveness and in resistance to wind, diseases, and other unfavorable conditions.

Upon this basic knowledge, the Filipino farmer is offered an opportunity to augment his income through the use of hybrid corn seeds suitable to his locality. The question arises, from what sources will farmers obtain their seeds? Knowing the peculiarity of behavior of hybrid seeds, it is of paramount importance that centers of distribution be established, wherein a particular hybrid corn seed has been developed, adapted to the local conditions. Only the first filial generation may be used to produce the desired results in productiveness, and other desirable features.

Methods Used to Control Pollination

The following technique of corn hybridization is being described:

"The development of inbred lines and their later use in the production of hybrid corn necessitates controlled pollination. During the inbreeding period and the period of experimental crossing, pollination usually is controlled by hand-bagging of the ears and tassels.

In the large-scale production of hybrids, the pollination is controlled by isolation and detasseling.

Self-pollination or "selfing" consists in pollinating the silks of selected plants with pollen from the tassels of the same plants. Two quite different methods of accomplishing self-pollination are in common use. Both methods require that the young ear shoot be covered to exclude foreign pollen before the silks emerge. Shall glassine bags are very convenient for this purpose. Later operations differ widely for the two methods and will be described separately.

In one procedure, (which for convenience may be called the "tassel-bagging method,") when the silks appear, the glassine bag is removed, the young shoot is cut back by trimming off the silks to three quarters of an inch of the tips of the husks, and the glassine bag is replaced. The tassel is enclosed in a large bag at this time. In 24 to 48 hours an even brush of fresh silks 1-1/2 to 2 inches long will have grown out. The pollen is collected in the tassel bag and dusted on the silks, then the shoot is again covered with the large tassel bag, which remains over the ear until harvest.

A second method, usually designated as the "bottle method" was developed. When the silks appear under the protecting glassine bag, the bag is removed and the shoot is trimmed back as in the previous method. A 2-ounce bottle of water is hung from the stalk at the ear-bearing node. The tassel is cut from the stalk, its shank is inserted in the bottle of water, and tassel and shoot are enclosed in large paper bag. The tassel should be arranged directly above the ear shoot. The bottle of water serves to keep the tassel alive while new silks appear, and as fresh silks

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struction of houses, sheds, fencing, purchase of breeding stock, appliances, selection and culling of stock, castration, caponization and other topics on animal culture that may be of interest to the public.

39. Can swine be raised in the Philippines in large groups by private enterprises?

Yes. Before this war there were already quite a number of persons in many provinces who raised pigs in large groups of not less than fifty head, mostly grade or purebred stock. These were raised largely under conditions favorable to the cheap acquisition of the bulk of feed fed.

40. Where were some of these located?

In Rizal, Nueva Ecija, Pampanga, Pangasinan, Occidental Negros, and Davao. However, as far as the condition of the land was concerned, many were not satisfactorily located but the promises could be greatly improved by draining pools or filling up the mud holes. They were either near rice mills, corn mills or coconut plantations or coconut oil factories where copra cake, or copra meal were cheaply available. Some were near and took advantage of the garbage from restaurants, hotels or army barracks; some were able to obtain brewer's grain practically free; and some had a combination of these feed facilities.

41. What is a satisfactory condition of land in the raising of pigs?

In the raising of pigs, especially in larger numbers where the home left-overs do not suffice to feed them, it is necessary to have land that drains easily and, if possible, of sufficient size so that forage and even pasture plants may be grown to reduce expenses.

42. What kind of land drains easily?

High or rolling land easily drains, or may be easily drained; and land with sandy, loam, or sandy-loam soils that permit water to filter through in a short time.

43. Why is that necessary?

Because it is important to prevent mud pools to form so easily as they become sources of infection especially of intestinal parasites.

44. How is the best way to start a swine project larger in size than a home unit?

There are really many ways to start such projects. But the more ordinary ways are as follows:

(a) By buying from a reliable party the desired number of selected gilts or sows and a boar. The chances of starting with selected stock that are not sick of a contagious disease can be easily ascertained. It may be mentioned here that buying from different sources expose the project to more chances of disease, especially if the stock is bought from sources that are not properly attended or organized.

Progressive Farming . . .

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grow they are pollinated by pollen from the enclosed tassel. It has been found advantageous to use a mild disinfectant in the water to retard the growth of micro-organisms and thus lengthen the life of the tassel. A solution of sodium bisulphite 1:2,000, which must be fresh, has proven very satisfactory for this purpose. After 48 to 72 hours the tassels may be removed and the bottles collected. These may be used again for other pollinations."¹

Several satisfactory methods of hand crossing are in common use. The young shoots must be protected from stray pollen as in selfing. When the silks appear the plants may be crossed in a manner similar to either the tassel-bagging method or the bottle method described above. Where larger quantities of seeds are required, it is usual to mix the pollen collected from several plants of one line and apply it to the silks

¹The Year Book of Agriculture, 1936 of the Dept. of Agriculture, U. S.

of the desired number of plants in other lines.

The larger scale or commercial production of crossed seed is accomplished by planting alternate blocks of the two parents in a field isolated from other corn and removing the tassels from all of one kind before pollen has been shed. The seed picked from these detasseled rows is hybrid seed. The ratio of pollen rows to detasseled rows varies from 1:2 to 1:4 depending on the vigor and pollen-producing ability of the pollen rows. Where inbred lines are being crossed, the more usual ratio is 1:2 and where single crosses are being crossed to produce double crosses the proportion of pollen rows, under favorable circumstances, may be reduced to 1:4.

This description of hybridizing corn may well be followed in agricultural schools thus enabling the different localities to produce the hybrid seeds adapted to the locality. It is evident that work along this line necessitates a considerable time before satisfactory results may be obtained. However, this work can be conducted in cooperation with the Bureau of Plant Industry Experiment Stations in order to hasten results and avoid duplication of work.

This is the right time to start experiments on corn hybridization with the objective of discovering a hybrid that will greatly redound to the benefit of our farmers. The corn production of this country is undeniably very low mainly due to the fact that our farmers do very little seed selection and in several instances they just resort to buying their seeds from the market because whatever they have produced and saved for seeds for the next planting had been consumed for food or fed to animals.

With the production of hybrid corn for seeds in the different localities where experiment stations and agricultural schools are established the use of hybrid corn for seeds would be then an established practice of progressive farming in this country.

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HOME GADGETS

Mechanizing of farming in the Philippines often gives the wrong conception to many people. Many have the belief that when we say "mechanize our agriculture" it means the revolutionizing of our farming by big capitalists by the use of big motors, tractors, machineries be-

(c) A system followed by a number is to buy a good boar, usually a purebred boar, and advertise among his neighbors that a successful breeding is payable at the rate of one selected newly weaned gilt resulting from the breeding. In a year, from 50 to as high as 100 gilts may be collected. In this connection it is well to warn that it is not advisable for new swine raisers or those without sufficient experience to go at once into the production of a large number of pigs.

(To Be Continued)