

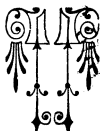
The Agricultural Experiment Station

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Hog Raising in Colorado

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The Best Breed of Hogs for Colorado

WHAT is the best breed of hogs for Colorado? The breed you like the best. A good individual, well bred from a prolific strain of any popular breed of hogs, will make money for the Colorado farmer, if handled right.

There are four breeds that have been found to be particularly adapted to Colorado conditions: Berkshire, Duroc-Jersey, Poland-China, and Tamworth.

The Berkshire is a prolific breed, adapted to any conditions favorable for hog raising. It will fatten at almost any age, and by feeding can be developed either into a lard or a bacon hog. It is an active hog, a good grazer, and will take care of itself in the feed lot with cattle. It takes a better fence to hold the Berkshire than it does some of the lazier breeds.

The Duroc-Jersey, as now bred, differs but little from the Poland-China, except that it is red in color and is more prolific. Records collected from thousands of sows of each breed by the U. S. Department of Agriculture show that the Duroc-Jersey sow averages two pigs more to the litter than the Poland-China sow. The hogs of this breed mature quickly, are good feeders, and prolific.

The Poland-China is nearly a perfect machine for converting feed into pork. It is an easy keeper, a quick fattener, and when handled properly, is ready for the market whenever the price is right at any time after it is five months old.

The chief objection to the Poland-China is that many strains are not prolific, the sows having only one to four pigs at a litter. This has largely been caused by overfeeding with corn in the corn belt. Where the sows have been properly fed on nitrogenous feeds and prolific ones kept only for breeding, the Po-

land-China is as prolific as any breed. On the Colorado Agricultural College farm, three Poland-China sows farrowed thirty-one live, strong pigs.

The Tamworth is a bacon hog with long, deep, thin body, long nose, and long legs. It looks like a "razorback," but will put on as much weight in a given time for an equal amount of feed as a hog of any of the other three breeds. The meat has a large proportion of lean and is well marbled. On the Colorado Agricultural College farm the sows for several years have averaged ten pigs to a litter. The Tamworth is a profitable hog, if pushed from birth until marketed; but if once stunted, will never recover and make a profitable feeder.

White hogs are not generally profitable in Colorado. The intense sunshine blisters and cracks the tender skin of the white hog, so that he usually becomes a runt. A few Colorado farmers have made good profits from white hogs by keeping them in pastures where there was heavy shade.

Selection of the Individual

THE selection of the breed is a matter of fancy; the selection of the individual animals for the foundation of the herd is the basis for profits or losses.

The first consideration should be to get both boar and sows from prolific strains. Except during the few weeks when the pigs are suckling, it costs as much to keep a sow that has one to three pigs in a litter as it does to keep one that has eight to ten pigs. The first cost of the new-born pig is determined by the cost of keeping the dam, divided by the number of pigs in the litter.

There are three serious defects to avoid in selecting animals for breeding stock: Weakness through the heart, weak or swayed back, and weak pasterns. These are faults which the swine growers of the corn belt have learned

from years of costly experience to avoid, and no other good qualities will compensate for these defects.

Most of the stockmen of Colorado have had but little recent experience with hogs and look only for good development in ham and shoulder. Breeders in the corn belt have learned this, and ship to Colorado breeding stock that on account of light heart girth, weak back, or pasterns, is unsalable at home.

In selecting breeding animals for meat production of either the Berkshire, Duroc-Jersey, or Poland-China breeds, the chief characteristics should be a broad, well-arched back; deep, thick meated sides; heavy hams and shoulders, and short and thick meated neck and jowls. The chest should be deep and broad, the ribs well sprung, and the legs short and sturdy. The animal should stand up well on its toes. Fine hair and small ears fine in texture, indicate quality. Avoid hogs with coarse hair along the top of the neck and shoulder. The different parts of the body should blend smoothly into each other and be evenly covered with flesh. The sow may be longer bodied than the boar and she should have at least twelve good teats.

In selecting Tamworths, the animals should be strongly of the bacon type; the body of great length between shoulder and ham, the sides deep, and the shoulders and hams light and uniting evenly with the body, so that a straight edge placed on the ham and shoulder will touch the side along its entire length. The back should be arched, and the ribs should spring out well directly from the backbone, and then drop almost straight down. The jowl and neck should be light fleshed. The body should be long, smooth, deep, and evenly covered with flesh with only a light thickness of fat—not over an inch on the hog ready for slaughter.

Uniformity in type is essential for the largest profits. No two breeds or types feed exactly alike, and where there is a mixture

there is a variation in finish and weight that lowers the selling price. To top the market, a car load of hogs must be alike in age, weight, fatness, and form. Uniformity in color affects the buyer favorably. Both the boar and all the sows should be pure bred, of one breed, and of the same type. Miscellaneous cross-breeding is a sure way to reduce the profits.

Handling the Boar

AS soon as the newly purchased boar arrives, he should be thoroughly dipped or washed with some of the coal tar dips for destroying lice, and given the same treatment after ten days. For three weeks after arrival he should be kept at a safe distance from all other hogs on the farm; then, if found free from disease, he may be placed in quarters near them. Dipping and quarantine should be applied to every hog or pig that is brought to the farm, as it will often prevent serious losses from lice and disease that would otherwise be carried by the new purchase to the swine already on the farm.

The boar pig should be pushed with growing feeds, so that he will make a gain every day until he reaches full, mature weight. A mixture of any two or more of the following grains is good: Corn, barley, or milo maize, with wheat, peas, or shorts. A liberal supply of skim milk is especially good. He should have all the alfalfa he will eat every day, either pasture or hay. A small feed of roots or cooked potatoes is good. Stunting, even for a short time, will permanently injure his value.

After reaching full growth, the boar, when not in service, should be given bulky feeds that will keep him full, satisfied, and in good condition, but that will not put on fat. Alfalfa, roots, and a small daily ration of any kind of grain.

A few weeks before the beginning of the breeding season the grain feed should be gradually increased, giving a mixture the same as when he was growing, and the amount of roots and alfalfa should be slowly reduced. The animal should be put in perfect condition and good flesh, but not made fat. The best results are not secured from a sire that is either fat or thin.

During the breeding season the boar should have an abundance of food, using the same combination as recommended for him while growing, except that just sufficient succulent feeds (alfalfa and roots) should be given to keep his bowels in good condition. A full supply of succulent feeds at this time is likely to make him infertile.

A boar should not be used for much service until he is at least twelve months old. A fully matured boar produces the most vigorous pigs, other things being equal, and if properly fed and handled, may be profitably kept for several years. His tusches should be cut or knocked out as often as they show considerable size.

The boar should serve a sow but once, and two sows a day should be the limit for a mature boar. Handled in this way, a mature boar is sufficient for fifty sows. Over service results in pigs that are dead, weak, or puny at birth.

The boar should have comfortable shelter at all times—dry and free from draughts. His surroundings should be kept free from vermin. Remember, that from a breeding standpoint, he is half the herd. He should have daily exercise to keep him healthy and muscular. A half-acre pasture will furnish this. He will keep better natured and be easier to handle if allowed to run with the barrows outside the breeding season. If allowed to run with the sows during the breeding season, he will weaken himself by over service. At other times there is danger that he will injure the sows.

The Brood Sow

ALARGE litter of heavy, vigorous pigs at weaning time is the foundation of profits. The sow should be selected and from birth should be fed and handled to produce such litters.

The sow pig intended for a breeder should be pushed for the first year and given feeds that will make rapid growth, but that will not fatten. Such feeds as milk, alfalfa pasture, or hay, and moderate quantities of grain, such as wheat, peas, barley, milo maize, and shorts. Ample exercise every day is necessary for health and to develop muscles and lungs. If the sow has made a good growth, she may be bred to drop her first litter when she becomes twelve months of age. The gestation period for the sow is 112 days.

While pregnant, the sow should be given muscle and bone-making feeds that will develop in the unborn pigs size and strong vital organs. The same feeds are needed for this purpose that are required by pigs after weaning. When the sow has good alfalfa pasture, only a small quantity of grain is needed. The sow should be kept in good flesh, but not fat. A heavy condition of flesh is favorable if it is put on with muscle-making feeds. Under feeding is extremely detrimental. The pigs from a half-starved sow are weak and undersized, at birth, and are stunted while suckling from lack of sufficient milk.

Constipation in the sow while she is pregnant, or suckling, must be avoided. Pig eating is often caused by constipation. Laxative and bulky feeds, such as pasture or alfalfa hay, will prevent this trouble, and should form part of the daily ration. Exercise is necessary to keep the bowels in good condition. Small feeds of roots are good. Heavy feeding of roots is often the cause of weak or dead pigs at birth. Feeding frozen roots is likely to cause abortion. The pregnant sow should be fed, sheltered, exercised, and handled in such

a way as to keep her in good flesh and health. Everything that facilitates this condition tends to secure pigs with greater vigor and more profitable as feeders.

A blow or a strain of any kind to the belly of the pregnant sow is likely to result in pigs dead at birth, or pigs born the wrong way, with the consequent injury to the sow, or her death. Sows had to step over a six-inch board in passing through an opening between their yard and pasture. There were many dead pigs at farrowing, and some of the sows died from trouble while giving birth. The ground next to a hog pen was eight inches lower than the floor, and the brood sows had to climb over this step—dead pigs and dead sows at farrowing time was the consequence. Potatoes were dug with a plow and the land left in ridges. Pregnant sows had to travel over these to get to a pea field. At farrowing time there were many dead pigs, and two sows died. A boar allowed to run with sows that are bred will frequently knock them around and bring the same trouble. Horses or cattle running in a lot with brood sows will often injure the sows the same way. Not over five to ten bred sows should be allowed to sleep together, as crowding in cold weather may result in losses at farrowing time.

A breeding record should be kept, and two weeks before the pigs are expected the sow should be placed in a farrowing pen connected with a dry yard large enough to allow her to exercise. The feed should be somewhat reduced, without any sudden change, and her bowels kept loose. She should have dry, sunny shelter, free from draughts. The sow should be petted so that she will like to have her feeder handle her.

The successful hog raiser watches his hogs day and night during farrowing time. There should be just enough bedding for comfort and dryness. Cut straw or chaff is best. Little pigs often get tangled in deep straw and are either crushed by the sow or die from exposure. Give

the sow as little attention as possible while she is farrowing, unless she must have assistance. In severe weather place the pigs as fast as they come in a basket in which a blanket is laid over a warm stone. Keep them well covered and, after all are born and have become warm and dry, take them to their mother and place each one at a teat. Then cover the mother and pigs. During the first forty-eight hours watch carefully, and if a pig strays from its mother, put it back against her body where it will be warm.

Give the sow all the water she wants for the first twenty-four hours after the pigs are born, but no grain. Take the chill off the water in cold weather. For three or four days after the first twenty-four hours, give plenty of water, but feed grain and milk sparingly. Then slowly increase until, when the pigs are three weeks old, the sow is having all the feed she will consume.

When the sow is given a warm, rich slop or other milk-producing feeds just after her pigs are born, a strong milk flow is forced. The new-born pigs get too much and have diarrhoea, which often kills them. They can not take all the milk, and the sow's udder becomes inflamed and caked. When the pigs suckle, the pain becomes so intense that in desperation she jumps up, kills, and eats them.

Overfeeding and lack of exercise cause the thumps in young pigs, but usually in Colorado, when pigs are thought to have the thumps, they actually have pneumonia, due either to damp beds or exposure to draughts.

A well fed, mature sow, with a strong constitution, can profitably have two litters a year. Mature sows usually have several more pigs to the litter than year-old sows, and should be kept as long as they produce strong pigs in good numbers. This will often be until they are six to eight years of age.

Management for the Growing Pig.

PIGS should not be weaned until they are at least eight weeks old, and if the sow is not to have a second litter, or if there is time enough in case she is, it is better to let the pigs suckle until they are ten to twelve weeks old. Farmers often get in a hurry and wean pigs when six weeks old; but unless there is an abundant supply of milk, and especially good care is given, the pigs are likely to become stunted, sometimes so severely that they never recover.

The cheapest way to put gains on young pigs is through the sow. She has a strong digestion and can turn coarse grains and pasture into easily digested milk. Careful experiments show that a pound of weight taken from the sow will make more than one pound of grain on the pigs, the flesh of the young animals containing more water.

The sow should be fed to produce a high yield of milk, and the pigs should be kept with her until they get to eating a full feed of both grain and pasture. The boars should be castrated before being weaned.

When the time comes to wean the pigs, cut down the sow's ration to water and alfalfa hay. She will dry up without injuring her udder. When she is giving a large supply of milk and all the pigs are taken away at once her udder is often ruined and she becomes unable to suckle another litter.

When first weaned, feed the pigs from three to five times a day. While with their mother, they took their meals at least every two hours, and too sudden a change is detrimental. After they get to growing vigorously, cut down to two meals a day, and when they weigh 75 pounds each and are on good pasture, feed once a day, and that at night.

When first weaned, feed the pigs some skim milk, if possible. It makes the change from mother's milk easier. Whole milk is good, but as butter fat is worth \$400 to \$740

a ton, it is expensive pig feed. Tankage will take the place of milk, when made about one-fifth the total weight of the grain fed.

A variety of feeds will give larger and cheaper gains than will any single feed. Peas, barley, wheat, rye, milo maize, and corn are the grains to use in Colorado. Soak from 24 to 48 hours, each time, feeding a mixture of at least two grains.

Do not sour the feed, and keep the troughs, pails, and barrels used in feeding sweet and clean.

Half the weight of a two-hundred pound pig should be made from pasture. Alfalfa makes the best pasture, followed by rape, clover, and a mixture of wheat, oats, and barley sown thickly.

Keep the pasture short for young pigs, as fresh growth is the most easily digested, and tall pastures, when wet, often make the pigs have sore skins. Have two pastures and change from one to the other, so that the pigs will always have clean feed.

They need fresh, clean water always before them. If a well is not convenient, the water can be supplied cheaply in barrels to which are attached hog waterers. Do not water directly from a stream. It often carries disease.

They must have warm, dry, clean shelter, free from draught every night in the year, and they need a shade from the midday sun.

If the pigs are lousy when weaned, dip them twice, ten days apart. Put up short posts in the feed lot and pastures. Wrap these posts with old sacks, and once a week saturate the sacks with crude oil or kerosene. The pigs will rub on these and the oil will kill the lice.

Fattening the Hog

THE Colorado market wants a well finished hog from 190 to 220 pounds live weight. A hog of this size furnishes the right sized hams and bacon. The cuts from heavier hogs carry too much fat.

There are four distinct sections in Colorado for fattening hogs: 1. The pea-growing mountain valleys having an altitude of 6,500 to 8,000 feet. 2. The irrigated grain-growing regions with an altitude of 6,500 feet and lower. 3. The fruit sections. 4. The Plains.

The chief pea-feeding section in Colorado is in the San Luis Valley. Field peas are seeded in fields of 40 to 320 acres each, drilling them in on unplowed ground. No further attention is given except to irrigate. The vines grow and bloom and the pods fill until killed in the fall by frost. They cure in the field without being cut. Hogs are turned into the field, gather the crop, and when fat are shipped to market. It costs, including the rent of the land, from \$3 to \$6 an acre to raise peas, and feeders estimate that an acre of good peas will put 400 pounds of gain on hogs when pastured off.

Sometimes the peas are harvested and stacked and the unthreshed vines fed from the stack to hogs confined in yards. An acre of good peas fed in this way will put from 600 to 800 pounds of gain on hogs.

Pork from pea fattened hogs has the most delicious flavor that is produced by any kind of feeding. Hogs fed peas alone fatten unevenly, some finishing quickly, while others gain, but become unthrifty, showing that a diet of this one grain does not agree with them. It is probable that they would do much better if fed crushed barley or ground wheat and some roots once a day.

Alfalfa does not thrive in parts of the San Luis Valley, and Dwarf Essex rape, or a mixture of wheat, oats, and barley may be sown for pasture for growing pigs, using peas, wheat,

or barley to supplement the pasture. Dry shetler without draughts is necessary at this high altitude every night in the year.

Barley is the most profitable grain to grow for fattening hogs in the irrigated sections having an altitude of 6,500 feet or lower. The yield per acre of well-bred barley is sufficient to put from 600 to 800 pounds of gain on fattening hogs. About 108 pounds of barley have a feed value equal to 100 pounds of corn. Owing to the dry atmosphere and the intense sunshine, Colorado barley is hard and flinty, and should be either rolled or soaked. When ground, it is broken into sharp pieces that irritate the digestive tract. Hogs fed barley should have all the alfalfa pasture or hay they will eat. Barley makes a white fat and gives the pork a choice flavor.

Wheat will put on as many pounds of gain on hogs as an equal weight of corn. The fat has a dingy color and the pork shrinks excessively in cooking. Wheat fed hogs should be fed barley or peas the last 60 to 75 days of fattening. This will give the proper color, flavor, and firmness to the meat.

Middlings make good hog feed, but are usually too expensive. Bran is not a profitable feed. It is too coarse and contains too much woody fibre. The meat of the oat is excellent hog feed, but the husk is valueless. Usually the high price and the per cent. of husk make it unprofitable to feed oats to fattening hogs.

In experiments made on the Colorado Agricultural College farm, hogs fed all the sugar beets they would eat, and no other feed, just maintained their weight. Hogs fed grain and all the sugar beets they would eat made less gains than those fed the same amount of grain and no beets. A small quantity of beets fed as a conditioner were valuable, one ton taking the place of 200 pounds of grain.

Hogs daily fed a little grain during the pasture season will make from 500 to 1,000 pounds of gain per acre of alfalfa pasture,

after the gains which the grain could make are deducted. Hogs fattened on grain alone, gained 400 pounds, while those fed grain and alfalfa hay gained 600 pounds. Several lots of hogs were fattened with different grains, and others with the same grains and alfalfa hay. One ton of the hay took the place of 1,000 pounds of peas and of 1,460 pounds of wheat. Early cut, leafy alfalfa hay should be fed to hogs, and is best fed in racks. They should eat the leaves only; the woody stems are detrimental. There is a loss in either cutting or grinding alfalfa hay for hogs, as these methods compel the eating of the indigestible stems.

An acre of Dwarf Essex rape pastured by hogs will put about 400 pounds of gain on them during the season. Grain must be fed daily with it.

In the fruit sections the same feeds are available as in other irrigated districts at the same altitude. Cull fruit often forms a considerable portion of the ration, and lowers the cost of production. In some parts of the fruit section hogs are finished on squashes. Good gains per acre are reported, but the meat has an objectionable yellow color.

On the Plains bald barley, wheat, rye, and milo maize are the surest grain crops. Dwarf Essex rape, seeded as early as the ground can be worked, is fairly reliable for pasture. It must be cultivated. Rye and wheat make fair pasture, as does sorghum sown broadcast. Carefully cured sorghum makes a good roughage for winter feeding. It must not be fed frozen to brood sows, or it may bring on abortion.

General Management.

TWO grains will give greater gains when mixed than will an equal weight of either fed alone. Grinding increases the feeding value of grain about 10 per cent., and soaking has the same effect.

Ground grain should be fed in a thick slop, made with milk or water at the time of feeding. Soaked grain should not be allowed to become either sour or frozen. Sufficient bulky feed should be given daily to keep the bowels in good condition.

When well-fed hogs are not thrifty, look for lice. The average change in temperature each 24 hours in Colorado is 20 degrees. For hogs this necessitates a dry shelter, free from draughts every night, both summer and winter. Hog cholera is found in Colorado only in localities where it has been brought from other states; but the losses in hogs from pneumonia and rheumatism are as great in Colorado as the losses in the corn belt from cholera, and are caused by needless exposure.

Raising hogs in Colorado requires constant daily attention and an accurate knowledge of local conditions. The man who has had no experience with hogs should start with one choice brood sow. His herd will increase as fast as his ability to manage it.

Books and Bulletins.

Farmers' Bulletin, No. 205—"Pig Management."

Farmers' Bulletin, No. 164—"Rape as a Forage Crop."

Farmers' Bulletin, No. 183—"Meat on the Farm: Butchering, Curing, and Keeping."

These bulletins will be sent free on application to the Secretary of Agriculture, Washington, D. C.

"Swine," Prof. Geo. E. Day; Kenyon Press, Des Moines, Iowa—90 cents.

"Swine in America," F. D. Coburn; Orange Judd Co., New York—\$2.50.

"Feeds and Feeding," Prof. W. A. Henry, Madison, Wis.—\$2.00.

"Profitable Stock Feeding," Prof. H. R. Smith, Lincoln, Neb.—\$1.50.

"Feeding Farm Animals," Prof. Thos. Shaw; Orange Judd Co., New York—\$2.00.

"Judging Live Stock," Prof. John Craig; Saunder's Publishing Co., Chicago—\$1.50.

The Colorado Experiment Station has published bulletins on Soils, Field Crops, Potatoes, Stock Feeding, Orchard, Garden, Irrigation, Dry Land Farming, Plant and Animal Diseases, Insects, Insecticides, and Weather Reports. They will be sent free on request to Prof. L. G. Carpenter, Director, Fort Collins, Colorado.

