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THE UNIVERSITY OF NEBRASKA
AGRICULTURAL EXPERIMENT STATION

LINCOLN, NEBRASKA, MAY 5, 1917

CIRCULAR NO. 4

PORK PRODUCTION IN NEBRASKA¹

BY E. A. BURNETT, *Director*

Seventy-eight million dollars paid Nebraska farmers for hogs in 1916—Nebraska stands fourth in the United States in number of hogs produced. We grow more hogs than all the New England States with New York, Delaware, New Jersey, Pennsylvania, Maryland, and Virginia added.

At the present time, pork is selling at from \$14 to \$15 per hundred on farms, and the price may increase as the war continues. Grains are also abnormally high, so that every effort should be made to utilize pasture and by-products to lessen the cost of production.

Breed for fall litters this year—The present high prices for pork and other meats will make it profitable to produce an extra large crop of pigs in the fall of 1917. Farmers should save the good brood sows for another litter, especially if it can be farrowed in September or early October. A good fall pig may very likely be worth \$40 when it is 8 or 10 months old. We can help to keep our food supply up to the normal by growing as much pork as possible upon Nebraska farms. The demand for food is likely to be greater rather than less before these pigs can go to market. You can help supply the nation's needs and incidentally make a profit upon your labor.

¹A circular on Treatment of Hog Diseases may be had upon application to the Bulletin Clerk, Nebraska Experiment Station, Lincoln.

Pasture pigs for profit—Experiments have shown that it is not profitable to grow pigs in summer without pasture even in normal years. The advantage of pasture in this year of abnormally high prices for grain will be apparent. The cost of fattening pigs is very much higher when fed in a dry lot than when corn or other grains is fed on pastures. Only a few farmers in Nebraska now attempt to confine their hogs to small yards and feed them upon grain alone. All agree that the profits are much greater and the cost of production is lower where hogs have a run on pasture with grain in summer and are fed alfalfa hay with their grain in winter.

Substitutes for alfalfa pasture—This year a considerable acreage of alfalfa has been killed by the severe winter. Many farmers will find their alfalfa pastures short and will need to grow substitutes for pasturing hogs. Barley and oats sown together will make a good early pasture. Dwarf Essex rape sown broadcast with a light seeding of oats at the rate of 6 pounds an acre, or sown in drills 20 inches apart at the rate of 3 pounds an acre, will make a good summer pasture. Where rape is sown in drills, it should be cultivated and kept free from weeds.

Sorghum may be used for pasture purposes during the latter part of the season. It should be sown upon well-prepared land about the first week in June, sowing with a press drill at the rate of about 2 bushels an acre.

How to balance a ration—Corn is our most valuable fattening food, but it does not make a balanced ration. When corn is fed alone, the pig does not secure a sufficient amount of protein (or flesh forming material) in the food. When alfalfa pasture is fed alone, the pig does not receive enough starch and sugar (fat forming material) nor enough dry matter in proportion to the water and the indigestible parts. By using these two classes of food in the right proportion, the best and cheapest gains are produced. This is the reason why corn and alfalfa make a cheap and profitable ration. Corn, barley, and other common grains have an excess of starch and sugar but are deficient in protein. Alfalfa hay, tankage, dried blood, cottonseed meal, linseed meal, and such products have an excess of protein material but are deficient in starch and fats.

Tankage has come to be used extensively to supplement corn in fattening hogs. It increases the daily gain, and, when corn is high priced, frequently lowers the cost of gain even when alfalfa hay is fed.

Feed grain with pasture—Unless grain is very scarce and high priced, do not think you are making more money by growing your young pigs on alfalfa pasture alone. They do not gain fast enough to be profitable. Buy corn, barley, or shorts if necessary to feed

to your young pigs on pasture. They will be larger and in much better flesh in the fall. They will fatten more readily and reach an earlier market than if they are fed wholly on pasture in summer and on a heavy corn ration in winter. By feeding one-half or two-thirds of a full grain ration on alfalfa pasture, the pigs make a good gain at a low cost.

Alfalfa balances the corn ration—Alfalfa can rightly be called our greatest hog forage. It combines palatability with an abundant supply of protein and mineral compounds. The limiting materials in most foodstuffs are protein and lime. Pigs must have protein to supply body waste and build up new tissues. Lime is necessary for making bone. In growing or fattening animals there should be a proper relation between the food nutrients which supply material for growth and those which produce fat. Roughly speaking, these nutrients are divided into two general classes: those that contain protein, which helps to build up the blood and the muscle of the body; and those that contain starch, sugar, fats, etc., which furnish the energy of the body and help to build up fat. The starch and sugar elements of the food are important, but they cannot be fully utilized without the protein necessary to balance the ration. Mineral matter is also necessary to develop the bones and provide for growth.

Corn alone not profitable—Experiments at the North Platte Station showed that it required 43 per cent more corn to fatten mature hogs in a dry lot than when running on alfalfa pasture (Bulletin 99, Nebraska Station). Where corn fed on pasture returned \$1.00 a bushel, corn fed in a dry lot returned \$0.57 a bushel. On the basis of gains made at the North Platte Station, hogs at 10 cents a pound (fed corn on alfalfa pasture) will pay \$1.70 a bushel, and at 15 cents a pound \$2.50 a bushel for corn.

At the Kansas Experiment Station (Bulletin 192) where two lots of pigs weighing fifty pounds each were put upon experiment—one upon a corn ration in a dry lot for 180 days, and one upon a corn ration with alfalfa pasture for the first 80 days and alfalfa hay for the last 100 days—the pigs fed in the dry lot weighed 75 pounds at the end of the experiment, while those fed upon pasture and alfalfa hay weighed 185 pounds at the same date. Corn did not furnish the food nutrients necessary to make a profitable growth.

Barley and emmer substitutes for corn—Ground or cracked barley can be used in place of corn with good results. On the average, when fed to fattening pigs, 10 pounds of barley is equal to 9 pounds of corn. However, for feeding brood sows or young, growing pigs, barley is often found equal to corn, pound for pound.

Mature sows live on cheap rations—Brood sows which have weaned their litters do well on alfalfa pasture without grain during the remainder of the season. If they are to farrow fall litters, a little grain just before farrowing may be desirable. Ground barley with 10 per cent of tankage is excellent to feed along with the green corn. Shorts are excellent if not too high priced. New grains are likely to be cheaper than present prices on old grains. After weaning litters, old sows may be wintered cheaply on alfalfa hay (or ground alfalfa) and a small grain ration. The amount of grain fed will vary from 1 to 2 per cent daily, depending upon the condition of the animal. More grain will be required, however, than where a fall litter is not raised.

Young sows should be well grown—Where breeding stock is selected from the spring litters and has not yet been grown to maturity, more grain is necessary. The amount can be determined by the rate of growth. Young brood sows should gain about one pound each daily from weaning time up to farrowing time and should receive a ration which will produce about this rate of growth. Corn and alfalfa in the right proportions will do this.

Green feed in winter is very desirable—Green pasture can generally be secured by sowing a field of wheat or rye rather early in the fall so that it gets a good stand with plenty of top before the winter season sets in. Pasture reduces the amount of grain required to keep the herd in good condition. It stimulates exercise which is so desirable in keeping stock thrifty and growing. Any farmer who can provide such green pasture in winter will find it greatly to his advantage.

Exercise your brood sows—The care of the brood sow at farrowing time is very important. Most of the troubles at this time come from the animal being too fat or having received too little exercise, too much corn, and too little alfalfa hay or pasture, or from being bred while too small and immature.

Take good care of young pigs—During the first two or three days after farrowing, the brood sows should receive but little feed and that of a light character with no corn. Alfalfa hay and a little shorts or bran, with skimmed milk if available, makes an excellent ration at this time. There is more danger of overfeeding a pig by overfeeding the sow during the first three or four weeks than of stunting him with too little feed. Where the weather is cold and the yards muddy so that it is difficult to secure exercise, heavy feeding is especially to be guarded against.

Increase the feed as the pigs grow—The ration for the brood sow should be increased gradually after the first week. By the time the pigs are three or four weeks old, she should be receiving

a full ration (fed at least twice daily), made up of corn, shorts, ground barley, or other ground feed, and a little oil meal or tankage to make a balanced ration. A mixed grain ration is much better than corn alone at this time.

Where tankage can be secured at a reasonable cost, one quart of tankage may be fed to each bushel of ear corn. This can be fed in the slop, or it may be fed dry in a clean trough. Under some conditions, it may be economical to allow the brood sow to eat tankage at will from a self-feeder in the lot. Where alfalfa hay is cheap and tankage is high priced, the tankage fed should be limited.

Care of fall pigs—In caring for fall pigs, it is quite necessary to have clean, dry, and warm houses where they can nest and have sufficient room so that they will not pile up in the nest. Warm water is very desirable if it can be given continuously by the use of a tank heater or some method which provides heat regularly.

More protein is necessary in the ration for young pigs than for mature animals. When pushing fall pigs for market, they may profitably have access to a self-feeder containing different kinds of grain and tankage. For young pigs, tankage or oil meal with some shorts or ground barley in addition to corn makes an excellent feed.

Use home grown feeds—The farmer's problem is to consume as much of the feeds raised on the farm as possible and to buy concentrated feeds only when he cannot raise the necessary feeds to make a good ration. Protein purchased in tankage and oil meal costs about three times as much as when secured from alfalfa hay worth \$10 a ton, so that all possible use should be made of the home grown protein feeds.

Hogging down corn—Pasturing the corn field with hogs is coming into use on many farms. Before turning hogs into a cornfield, they are generally brought up to a nearly full grain ration to prevent disease by a sudden change in feed. A portion of the field is fenced off and the hogs allowed access to pasture in addition to the cornfield.

At the Scottsbluff Station, irrigated corn without alfalfa pasture produced 744 pounds gain an acre. With alfalfa pasture as a supplement, 930 pounds of gain an acre was produced. Where tankage was fed as a supplement, 1029 pounds of gain an acre was secured. Where no supplement was used, the hogs paid \$1.34 a hundredweight for estimated yield of corn compared with \$1.55 a hundredweight where hogs had access to alfalfa pasture, and \$1.50 a hundredweight where tankage was used. Hogs were figured at \$7.00 a hundred.

Self-feeder saves labor—The self-feeder is coming into favor on many farms. A long feed box is made with a trough at the bottom into which the feed will run until the box is empty. The rate of feed is regulated by movable slides so that a constant supply is available without waste. Sections are provided for corn, for tankage, and for other feeds. The pig is allowed to eat at will. It has been found that the pig fed in this way will adjust his ration to produce maximum gains without waste of feed. The principal question in the use of the self-feeder is in getting a sufficient use of cheap roughage. Where the pig is being crowded for the market, the self-feeder may be used to advantage. Where the gains are to be secured mainly upon alfalfa pasture with a small additional grain ration, this should be fed by hand once or twice daily.

Self-feeders may be used for brood sows in winter by mixing alfalfa meal with grain in such proportion that the sows will grow out with the right degree of flesh at farrowing time.

While suckling pigs, sows may be self-fed after the first two or three weeks by mixing shorts with the corn in such proportion as to limit the corn ration but still give practically a full feed of grain. In this case, tankage in a separate feeder or compartment will be desirable.

Cheap houses for shelter—If the pigs are to come after grass is available, cheap shelters are sufficient; if they are to come in March or April, then good, warm shelters, and additional care are necessary. A good house for this purpose is built with a single row of pens facing south or southeast, having an alley at the back of the pen and an outside yard in front of each pen. Concrete floors are very desirable. There should be a window for each pen to give light and ventilation.

Where the farmer is so situated that this house can be built into a bank or sidehill with a southeastern or southern slope, this protects the pigs against the cold winds and insures dry yards and warmth, which are a great advantage in raising early spring pigs.

Pure water is important—Hogs like to drink water frequently, especially in warm weather, and the farmer should try to keep a constant supply of clean water available or to water not less than three times daily. Pigs frequently suffer from thirst in summer when the drinking place is too far from the shade or shelter. So far as we provide for the comfort of the pig, we make him do extra work for us and increase our profits. Recent experiments tend to show that the use of warm water in winter is profitable.

Dry beds important—A dry, clean bed is as much relished by the pig as by the working man. Do not let the bedding get wet and cold. Be careful also to have plenty of room, so that the pigs

will not pile up in the shed. Wet bedding and piling up in the shed are the two most frequent causes of coughs, colds, and pneumonia.

Keep pigs free from vermin—Dip or spray your hogs frequently, and keep the pens clean and disinfected. There is nothing better than crude oil applied either with a brush or by dipping in a tank. Where crude oil is applied by dipping, fill the dipping tank with water and put two inches of oil on top of the water. Drive the pigs thru the tank. When carbolic dips are used, follow the directions given by the manufacturers.

Health necessary for profits—Watch your pigs for coughs, and if these are caused by dust, sweep out your pens and keep the floors clean and free from dust by sprinkling with crude oil. If houses are movable, haul them to a clean place. By keeping the pens and yards clean and sanitary, much trouble from disease will be avoided, and the profits will be proportionately increased.

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