



Feeding Wheat to Hogs ☆

IN THE COLUMBIA BASIN AND BLUE MOUNTAIN
COUNTIES IN OREGON IN CONNECTION WITH THE

☆ *National Defense Program*

By *H. A. Lindgren*
A. W. Oliver
D. E. Richards

Oregon State System of Higher Education
Federal Cooperative Extension Service
Oregon State College
Corvallis



Figure 1. First-prize Duroc barrow at the Oregon State Fair, 1940.

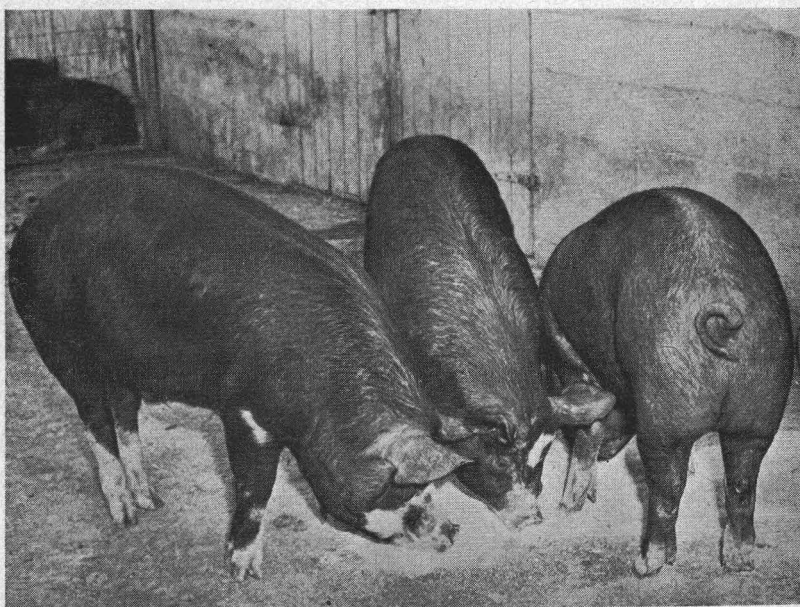


Figure 2. Three modern-type market hogs.

Cover picture:

Inexpensive type of housing.

Feeding Wheat to Hogs in the Columbia Basin and Blue Mountain Counties in Oregon in Connection with the National Defense Program

By

- H. A. LINDGREN, Extension Animal Husbandman,
Oregon State College
- A. W. OLIVER, Associate Professor of Animal Husbandry,
Oregon State College
- D. E. RICHARDS, Superintendent of the Eastern Oregon
Branch Livestock Experiment Station, Union, Oregon

THE general points of swine management in the state as a whole have been included in Extension Bulletin 550, but the special problems on the management of hogs in the wheat area of the Columbia Basin and the Blue Mountain counties are discussed in this bulletin.

Investigators in Oregon have long considered wheat a valuable feed for swine, and many years ago stressed its value in comparison with barley and corn. In connection with the national defense program of marketing surplus wheat, it is believed that there is an opportunity in Oregon to assist the wheat grower in marketing some wheat through this channel provided the price of wheat and pork are in the proper ratio.

In Extension Bulletin 527, dealing with marketing of surplus wheat in the Pacific Northwest through livestock, it was pointed out that the surplus wheat produced in the Northwest would have to be shipped to eastern states, exported to foreign countries, or fed to livestock. It was also noted that marketing surplus wheat would follow largely through the channel of feeding hogs. Interest in feeding this wheat to hogs and other livestock has been increased through an educational program carried on by the Extension Service.

Demand for pork in the western states. The states in the Pacific trade area, which includes the 11 western states except Arizona and New Mexico, import 2,600,000 hogs a year from the Corn Belt. If all available feeder cattle and feeder lambs in the Northwest were fattened on wheat, they would consume approximately 2½ million bushels of the 40-million-bushel surplus. If all the surplus wheat

in the Pacific Northwest were fed to hogs, it would produce about 2,500,000 hogs annually, or approximately the number shipped in. This indicates the possibility of utilizing wheat, but it is not to say that this objective is practical because of many related factors, including freight rates and shifting market conditions for both wheat and hogs.

Value of wheat-fed hogs is high. From information obtained from northwest packers substantiated by experimental work where slaughter tests have been run, it is definite that the value of wheat-fed hogs is very satisfactory. The meat is firm and juicy and the lean meat has excellent color. The bacons and hams rank with the best. It has been stated often by those in the packing business and by the Danes that wheat-fed pork is a superior product.

QUALITY OF PORK FROM HOGS FATTENED ON GROUND WHEAT OR GROUND CORN
OREGON EXPERIMENT IN 1940

Refractive Index

Lard from hogs fed ground corn.....	1.4602 (average)
Lard from hogs fed ground wheat.....	1.4593 (average)
Indicates that corn produces a fat or lard with a lower melting point than wheat.	

Consistency as Tested with Penetrometer

Lard from hogs fed ground corn.....	17 millimeters (average)
Lard from hogs fed ground wheat.....	15.4 millimeters (average)
Indicates that corn produces a fat or lard that is a softer lard than that produced by wheat.	

Value of wheat as a feed in comparison with other feed grains. In tests run in Oregon, as well as in other regions where wheat is an important crop, the conclusion has been reached that wheat is equally as valuable as corn or barley as feed grain for swine. In many cases tests have shown wheat to produce larger gains, and less grain was required in putting on 100 pounds increase in weight. Upon averaging the tests, however, it may be said that corn, wheat, and barley are approximately of equal value pound for pound.

Feeding value. A feeding experiment in 1909 gave the following results on a 60-day trial at the Experiment Station in Corvallis.

	Average initial weight	Average final weight	Daily feed in pounds		Daily gain	Feed used per 100 pounds gain	
			Grain	Skim milk		Grain	Skim milk
<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Chopped wheat and skim milk	231	348	6.38	6.75	1.95	327	346
Chopped barley and skim milk..	208	322	6.38	6.75	1.91	332	354

Advantage of chopped wheat over chopped barley: 2 per cent.

The following data from "Feeds and Feeding" by F. B. Morrison give feeding values of the common grains.

	<i>Digestible protein</i>	<i>Total digestible nutrients</i>
Pacific Coast wheat	8.5	83.6
Rye	10.3	80.1
Pacific Coast winter oats	7.5	75.4
Corn (well-dried)	7.4	83.7
Corn (No. 3 grade)	7.0	79.0
Barley	6.9	78.8

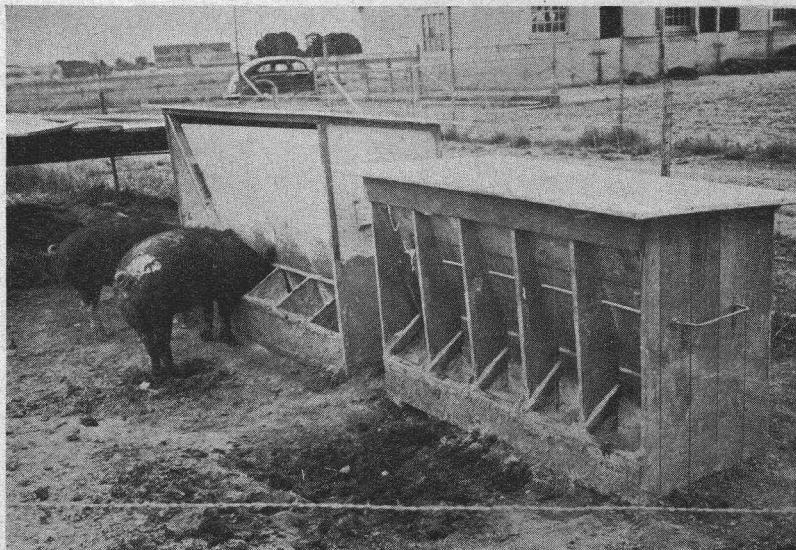


Figure 3. Self-feeders are practical and economical.

Wheat, a very palatable grain for hogs. Experimental results have shown that wheat is extremely palatable to hogs. It is usually fed dry in a self-feeder. If fed in a self-feeder it is not necessary to grind the wheat, but if fed in troughs, it should be ground medium fine. If ground too fine, it is not palatable.

Methods of feeding. Wheat, like other grains, should be fed in proper balance. In order to produce the best results, for every 100 pounds of ground wheat there should be available a ration of some good protein supplement, preferably of animal origin. This may be in the form of tankage, fish meal, or skim milk, or it may be a combination of tankage or fish meal with linseed meal. A 10 per cent ration of protein supplements is satisfactory and is economical, as the animals gain much more readily when they have this supplement. The proportion of protein supplement may vary with the age

and weight of the hogs and availability of legume pasture. For instance, if the hogs are on alfalfa or clover pasture, 5 per cent protein supplement is adequate.

In addition to the protein supplement in dry lot feeding, it is advisable to supply 5 per cent alfalfa meal in the ration or to provide good, leafy, green-colored alfalfa, in an open rack where the hogs can help themselves to it at will. This feed provides the necessary vitamins, including A and D, which aid greatly in keeping the hogs in a thrifty condition. Hog raisers, even though they live in the Wheat Belt, can well afford to ship in either alfalfa meal or a green, leafy alfalfa for their hogs.

Some growers in the Wheat Belt may have access to skimmed milk or buttermilk, which is the most valuable protein supplement for swine feeding. The particular proteins found in these products are utilized by the animal's system more efficiently than those from the other protein carriers. When it is possible to provide as much as $\frac{1}{2}$ to 1 gallon of skimmed milk or buttermilk a day to each pig, no other protein supplement is required.



Figure 4. Hogs rooting pasture due to lack of protein in ration.

Pastures. In order that production costs be lowered to enable the use of wheat in the Wheat Belt, it is essential that some type of pasture be provided. Alfalfa is most desirable, but in the wheat-producing counties this type of pasture often cannot be produced to advantage. Pastures of other kinds, however, are valuable as a means of saving grain in the production of pork. Where alfalfa cannot be grown, field peas, sweetclover, wheat or oats can be used.

Alfalfa runs high in protein content, and less protein supple-

ment is required where this pasture can be made available. In the case of grains, including wheat or oats, double the amount of protein supplement is required in the grain mixture in order to balance the ration.

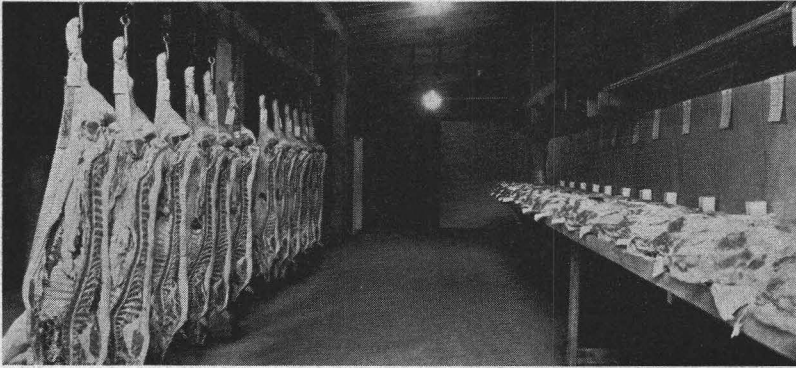


Figure 5. Wheat produces excellent quality pork.

Minerals. Minerals are extremely important in all hog feed lots whether wheat or some other grain is being fed. It is true that hogs will get a large amount of minerals from alfalfa pasture or alfalfa hay, but as they are gaining rapidly, it is desirable to supply additional minerals. Minerals suggested as economical and effective for a mixture in most parts of the state are as follows: 100 pounds of ground limestone, 100 pounds of sterilized steam bone flour or meal, and 100 pounds of salt. This mineral mixture is placed before the hogs in the feed lot where they have access to it at all times. Under these conditions they satisfy their own appetites and thrive better than when it is not used. If the hogs are not accustomed to salt, it would be wise to satisfy their appetites by adding a small amount of salt to the grain ration each day for a week or ten days before this mixture is placed out for free access.

Danger from tarweed. Tarweed seed, found in a number of counties in the Columbia Basin area, has been found to produce a hardening of hog livers and results in heavy losses to the hog grower. Considerable work has been done experimentally by the Washington State College Veterinary Department in this connection. Investigators there say that the severe losses experienced where wheat has been fed have been due to the prevalence of tarweed seed. The hogs develop a hardening of the liver, become unthrifty, and the fat turns yellow and shows through the skin. It was sometimes referred to as "yellow jaundice" years ago and Oregon growers have sus-

tained losses from this condition. It is important, therefore, that wheat fed to hogs be screened to free it from this weed seed.

Water and shade. Plenty of water is required. It can be supplied in barrels with automatic cups, if necessary.

Hogs require shade during the hot weather; otherwise there will be loss due to overheating. A straw roofed or a boarded shade is satisfactory.

It is advisable to locate self-feeders, water, and shade near each other on pasture for growing and fattening pigs.



Figure 6. A good type of waterer, showing automatic cup.

Fences and buildings. A farm or ranch where hogs are raised must have several pastures with hog-tight fences. This makes it possible to rotate the pastures so the sows and litters will be on pastures that have not been used for hogs the preceding year in order to control intestinal round worms in the pigs.

The buildings for hogs do not need to be elaborate. They should not be too open or drafty during the winter. A combination of a medium sized farrowing, or central barn, with portable houses is adequate. The portable houses can be used in the pasture.

Proper combination important. *Success in feeding wheat to hogs hinges on the proper combination, as has been mentioned previously.* Protein supplements, pastures, minerals, and plenty of drinking water are important to success in the feeding of wheat.