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The Economy of Forage Crops in Pork Production

By JOHN W. WUICHET
Department of Animal Husbandry

Growing and fattening hogs in the summer time without the use of some pasture crops is usually an uneconomical practice, and with the present extremely high prices for grain feeds, the economy of pork production will be in the substitution, as far as possible, of forage crops for grain feeds. A saving of 15 to 25 percent of the total amount of grain and supplements may be expected thru the use of forage. Pasture crops when combined with grain feeds will produce the cheapest rations for both breeding and fattening hogs, and the cost of gains will range from one-sixth to one-fourth cheaper than when the grain is fed in a dry lot.

It may be possible in some cases with an abundance of good forage, to obtain fairly satisfactory gains for a time on such forage alone, but the greatest returns have been obtained when grain was fed in addition to the forage at the rate of 2 to 3 percent of the weight of the hogs per day. The number of hogs that may be kept on an acre of forage will depend on several things. In the first place, it will depend on the size of the hogs and the abundance of the forage. It will also depend upon the amount of grain fed in addition to the forage; the heavier the grain feeding, the more hogs can be supported on an acre of forage.

In order to supply plenty of pasturage all thru the season, it will be best to supply several kinds of forage crops if possible, as no single pasture crop fulfills the forage requirements for an entire season. Change of pasture is good for the hogs and the pasture as well, for it gives the pasture a rest and adds variety to the ration for the hogs, both of which are good practices.

There are several requirements of good forage crops. They should either provide abundant growth in a short time, or continuous growth for a fairly long season, and they should be palatable. The palatability will be increased by turning in the hogs when the crop is young and by keeping the crop pastured down fairly well. Care should be taken, however, that they are not pastured so closely that the new growth is injured.

Some suggestions regarding our best forage crops, follow.

The Ohio State University, Cooperating with the United States Department of Agriculture, Agricultural College Extension Service, H. C. Ramsower, Director, Columbus, Ohio.
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ALFALFA

Alfalfa pasture will produce more pork per acre, on the average, than any other forage crop. It is one of the earliest pasture crops to come along in the spring and if kept clipped during the summer, it will provide good forage until late in the fall. Alfalfa is a crop that is high in protein and mineral matter, two very necessary factors in animal growth which are lacking in corn, and for these reasons, corn when fed on alfalfa pasture will need little or no supplementary feeds. Under average conditions an acre of alfalfa will pasture from 10 to 20 shoats, depending upon the conditions mentioned before. Alfalfa should not be pastured too closely as it does not stand heavy foraging and it probably would be best to pasture it in such a way as to permit the cutting of two small crops of hay during the season in addition to the pasturage furnished. Alfalfa when fed alone will about maintain a hog without much gain or loss, and when corn is added, the corn may be expected all to go toward producing gain in weight.

RED CLOVER

Red clover makes an excellent pasture for hogs and ranks close to alfalfa as forage. From the standpoint of the average farmer or hog feeder, it will probably be the most used forage crop, particularly because it fits better into almost any system of crop rotation than does alfalfa. However, it will not support quite so many head per acre, nor will the forage season be quite so long, but if not pastured too closely and not allowed to go to seed, it will produce an abundance of good forage all summer. An acre of clover pasture will take care of from 8 to 16 shoats if properly handled. Little or no supplementary feeds, such as tankage, middlings, etc., will be needed with corn when fed on clover pasture. In fact, when clover is at its height in growth, very little grain of any kind will be needed to maintain satisfactory gains.

RAPE

Rape is also one of the valuable forage crops for pork production. It grows rapidly, producing a large succulent growth that is usually quite palatable to hogs, and it serves to add variety to the ration. Rape ranks close to alfalfa in feeding value and with good growth and a favorable season, it will support from 10 to 20 shoats per acre. However, it does not have the beneficial effect on the soil that is obtained from alfalfa and clover.

Rape may be sown any time after the danger of hard freezing is past, and if sown early, it should provide pasturage by the middle of May or a little later. It is advisable to sow rape several times during the season so that continuous pasture will be provided. Rape, however, does better in the early spring and late fall as it is a cool weather plant. The Dwarf Essex rape is the variety which should be used and broadcasted at the rate of about 5 to 8 pounds per acre on a well prepared seedbed. Rape does particularly well on rich ground. An old feedlot is an ideal place in which to sow rape.

While rape is usually quite palatable, complaint is sometimes made that it is difficult to get hogs to eat it. However, if they are kept on the rape pasture continually, they will usually learn to like it before receiving any serious set-back. Pasturing hogs on rape will sometimes cause scabs and sores on the ears and backs. If such a thing occurs, remove the hogs to some other pasture for a time and apply sulphur and lard to the sores.

The great value of rape lies in the fact that it can be sown almost any time during the growing season and will make abundant growth quickly.

Rape and oats together are preferred by some hog feeders, and some feeding experiments give this method as preferable to rape alone. If this practice is followed, the rape should be sown ahead of the drill at the rate of 4 to 6 pounds per acre and the oats drilled at the rate of 1½ bushels per acre.

SOYBEANS

The best results from the use of soybean forage may be expected when they are sown in connection with corn and both crops hogged down, but some good results have been obtained by pasturing soybeans alone. The month of June is the best time to sow them and they should be sown with a grain drill about 1½ inches deep and at the rate of from 1 to 1½ bushels per acre. The hogs should be turned on the beans when the pods are well formed, and about a three-fourths full feed of corn should be fed in addition for satisfactory results. By following this plan, an acre of soybeans will furnish forage for from 10 to 12 shoats.

RYE

Rye when sown in the early fall will furnish later pasture than almost any other grass crop, and will also furnish good pasture quite early in the spring. However, its value as a pasture crop is limited because it so soon becomes woody, which renders it unpalatable and indigestible.

Hogging off rye after it has become ripe has proved a successful practice. If this plan is to be followed, the rye should be allowed to become thoroly ripe and the heads crinkled down. The grain does not shatter easily, which makes it an ideal crop for hogging down. About the same returns may be expected from rye harvested in this way as when harvested for the grain.

BLUEGRASS

Probably bluegrass is used more extensively as pasture for hogs than any other grass crop, and during the spring and fall, it makes fairly good forage. However, during the summer it is very likely to become quite dry, which renders it unpalatable and of little value as a feed, but even during the summer, it is likely to prove much better than feeding in a dry lot.

TABLE SHOWING RELATIVE ECONOMY OF FORAGE CROPS

(Missouri Bul. 110.)

Forage	Pounds grain per pound gain	Pounds gain per bushel corn fed
Bluegrass	4.50	12.4
Alfalfa	3.07	18.2
Clover	2.95	18.9
Rape	2.74	20.4
Rape and Oats	3.60	15.5
Soybeans	3.00	18.6
Rye (ripe)	1.96	28.5
Average	3.11	18.9

This table shows that about 3.11 pounds of grain were required to produce one pound of pork when the hogs were fed on some good forage. The results on a number of feeding trials show that an average of about 5.11 pounds of grain are required to produce a pound of gain when hogs are fed in a dry lot. This would show a saving of close to 40 percent in the grain when fed on forage.

SUGGESTIONS ON THE GROWING OF FORAGE CROPS

Crop	Time of Planting	Amount of seed per acre	Time required for pasturing or hogging down	Amt. of forage furnished or length of time it may be pastured	Varieties best adapted for pasturing hogs	Regions of state where crops may be used	Place in rotation
CORN	May 1 to May 25	If drilled, 1 stalk every 12 to 14 inches If planted in hills, 3 stalks per hill—7 to 8 lbs. per acre. If sown thick with grain drill 1 to 2 bus. per acre.	For hogging down 80 to 115 days. When sown thick 6 to 8 weeks.	40 to 80 bus. of grain, 2 to 3 tons fodder. May be pastured 4 to 8 weeks. Sept. 1, to Oct. 30. When sown thick, 3 to 5 tons, may be pastured 8 to 12 weeks, July 1 to Sept. 30.	Minnesota 13, Clarage, Golden Surprise, Silver King, and Calico. Any variety may be used, but it is better to have an early maturing one. For sowing thick, any variety.	Adapted to entire state	Fits nicely into any rotation. Does particularly well following alfalfa, or clover sods.
ALFALFA	In spring Feb. 15 to May 1 In fall July 15 to Sept. 1	10 lbs. of seed per acre.	Spring seeding may be pastured some in the fall but should not be pastured much. The following spring and summer it will be ready for pasture.	3 to 5 tons per acre. May 15 to Nov. 1.	Common alfalfa. American grown seed is probably best or as good as any for Ohio	Alfalfa better adapted to western Ohio than to eastern side of state	May be seeded on wheat in spring, or with oats or spring barley. May also be seeded on rye in spring.
SOY-BEANS	May 20 to July 15	When planted in rows 2 to 3 pks. When drilled solid 1¼ bus. to 2 bus.	10 to 12 weeks. To furnish best pasture soybeans should not be used until beans are pretty well formed. They will make a good growth long before this time.	2 to 3 tons per acre if cut for hay. 15 to 25 bushels of seed per acre. May be pastured from 5 to 10 weeks. Aug. 15 to Oct. 30.	Ito San, Elton, Manchu, Ohio 9100; it is desirable to have an early maturing variety.	Adapted to entire state	May be sown after corn to replace oats in rotation. They do well after almost any crop. Must be sown in spring or early summer.
RAPE	Apr. 10 to July 30	5 to 8 lbs. May be seeded in rows or broadcasted.	6 to 8 weeks.	6 to 18 weeks. Will continue to furnish pasture until freezing weather stops its growth. Should not be pastured too close. June 15 to Nov. 15.	Dwarf Essex.	Over entire state	May be seeded in corn at last cultivation. Better to seed in spring alone or mixed with other forage crops.

FIELD PEAS	April 25 to April 30	1 bu. to 1¾ bu. per acre. With grain drill.	6 to 8 weeks.	1½ to 2½ tons per acre. 3 to 5 weeks. June 1 to July 10.	Canada field peas.	Over entire state.	
FIELD PEAS AND OATS	Mar. 25 to April 30	Peas—1½ bu. Oats—1 bu.	6 to 8 weeks.	4 to 6 weeks. June 1 to July 15.	Canada field peas. Sixty-day oats or Ohio 7009.	May be used anywhere in Ohio.	
FIELD PEAS, OATS AND RAPE	Mar. 25 to April 30	Peas—1 bu. Oats—1 bu. Rape—5 lbs. Drill oats and peas, sow rape broadcast.	6 to 8 weeks.	Canada peas and oats will furnish pasture from 4 to 6 weeks. After which rape will furnish pasture until freezing weather if not pastured too close.	Canada field peas. Sixty-day oats or Ohio 7009. Dwarf Essex rape.	Over entire state.	
RED CLOVER	Feb. 15 to May 1	8 lbs. per acre. 6 lbs. enough when seeded with disk seeder.	Will furnish some pasture in later summer or fall. Should not be pastured close.	Might be pastured during September.	Medium Red.	Entire state. Eastern half of state needs plenty of limestone to insure success.	May follow wheat, rye or oats, as it may be seeded with any of them in spring.
SWEET CLOVER	Jan. 15 to May 1	8 to 10 lbs. recleaned, scarified seed per acre.	Will furnish pasture in late summer and fall. Then early following spring as it comes into growth sooner than most crops.	Aug., Sept. and Oct., following spring seeding. April, May and June of following spring or until it is turned under or cut for hay. Not so good for hog pasture second year.	White blooming (Melilotus alba)	Entire state. Requires plenty of limestone in soil. Should be inoculated when grown for first time.	May be seeded on wheat, or rye in spring. Can be seeded alone, but better practice to seed with small grain. Disk seeder or disk drill satisfactory.
OATS	Feb. 25 to April 30	2 bu. per acre.	May be pastured in from 6 to 8 weeks.	Pasture season a short one. June 1 to July 15.	Any variety may be used.	Entire state	Follows corn. Oats land might be plowed and seeded to rape for late fall pasture.

Crop	Time of Planting	Amount of seed per acre	Time required for Pasturing or hogging down	Amt. of forage furnished or length of time it may be pastured	Varieties best adapted for pasturing hogs	Regions of state where crops may be used	Place in rotation
BARLEY	April 15 to May 30	1½ to 2 bu. per acre.	5 to 7 weeks.	Pasture season fairly short. June 15 to July 15.	Oderbrucker barley probably best variety for Ohio.	Entire state	Would take place of oats in rotation. Furnishes almost same number of pounds of grain per acre as oats.
RYE	Aug. 15 to Oct. 15	1 to 1½ bu. per acre. Drilled	Following spring. Sometimes it furnishes some pasture same fall.	May be pastured during April, sometimes to May 10. Has heavy carrying capacity.	Any variety.	Over entire state	May be seeded in corn either before or after cutting.
CORN SOY- BEANS	May 1 to May 30	Corn—7 to 8 lbs. per acre. Soybeans—1 gal. per acre.	80 to 115 days.	6 to 8 weeks. Sept. 1 to Oct. 30.	Corn, early maturing variety. Minnesota 13, Clarage, Silver King, Golden Surprise. Soybeans, Ito San, Elton, Manchu, Ohio 9100.	Entire state Entire state. Best to have yellow seeded variety	Fills regular place in rotation that corn alone fills.
CORN SOY- BEANS RAPE	May 1 to May 25	Corn—7 to 8 lbs. Soybeans—1 gal. Rape—5 lbs. seeded broadcast last cultivation.	80 to 115 days.	6 to 12 weeks. Sept. 1 to Nov. 30. Rape will afford pasture after corn and soybeans are gone.	Same varieties of corn as named above. Same varieties of soybeans as named above. Dwarf Essex rape.	Entire state	Fills regular place in rotation. Rape would interfere with seeding land to wheat.
*RAPE AND OATS	Mar. 25 to April 30	Oats—1½ bu. Rape—5 lbs. Rape may be seeded two weeks later than oats and land harrowed lightly.	4 to 6 weeks when oats are not harvested for grain. If oats are harvested for grain it would require longer period for rape to furnish pasture.	If pastured while oats are green, this will furnish pasture for from 4 to 6 weeks. After which rape will come on for late fall.	Dwarf Essex rape. Any variety oats if pastured green. If oats harvested for grain crop. Sixty-day for southern Ohio.	Entire state	Seeded on land following corn crop.

*This mixture of rape and oats is probably not much better than rape alone.

RYE AND VETCH	Aug. 25 to Oct. 10	Rye—1¼ bu. Vetch—½ bu.	Might afford some pasture same fall. Early next spring.	May be pastured during April, May and June. Has heavy carrying capacity.	Rye, any variety. Vetch—Hairy vetch (winter.)	Entire state Vetch seed should be inoculated	May be seeded on corn land either before or after cutting corn crop.
†BLUEGRASS	Sept. 10 to Oct. 10 or at time of seeding wheat	4 to 5 lbs. per acre along with other grasses.	Affords very little pasture until second year after seeding.	Well adapted to pasturing during spring months, May, June, and very often again in fall. Very little pasture during July, August, and September.	Kentucky bluegrass is best.	Entire state	
BARLEY AND ALFALFA	April 15 to May 30	Barley—1½ bus. per acre. Alfalfa—8 to 10 lbs. Alfalfa seeded at same time as barley.	5 to 7 weeks.	June 15 to July 15. After barley is gone alfalfa should afford considerable pasture if not pastured too close.	Oderbrucker barley or beardless spring barley. American grown common alfalfa.	Entire state Where sufficient limestone for alfalfa	Replaces oats in rotation.
OATS RAPE CLOVER	Mar. 25 to April 30	Oats—1½ bus. Rape—5 lbs. Red Clover—6 to 8 lbs. 4 to 5 lbs. if alsike is used.	4 to 6 weeks.	May be pastured June 1 to July 15. Oats will come on first. Then rape. In late summer clover will furnish some forage.	Sixty-day oats. Dwarf Essex rape. Red Clover or alsike clover.	Entire state	Regular place in rotation occupied by oats. Presence of rape and clover interferes with seeding to wheat.

†Bluegrass is never sown alone in this state but is included in grass mixtures for permanent pastures.

PLAN FOR A FORAGE CROP ROTATION

A plan of handling hogs on forage which has proved quite successful in some sections is as follows:

A plot of ground, the size of which will depend upon the number of hogs to be fed, is selected for the feeding operation. This lot is first divided equally and then one half is again divided equally. If the plan is started in the fall, one of the small sections is sown to rye, which will furnish some late fall pasture if needed and will furnish the earliest pasture in the spring.

As soon as possible in the spring the second small plot is sown to oats and rape, or some similar crops, and when ready, the hogs are turned from the rye to the oats and rape. The next step is to plow the rye plot and sow rape, or some other good forage crop, and change the hogs to it when it has attained a good growth.

At the proper time the larger lot should be planted to corn and soybeans, to be hogged off when ready.

By this method good forage is obtained all season and the hog feeding operations are handled with the minimum of effort. Where careful, accurate records have been kept on this method of feeding, including all costs for labor, fencing, etc., the plan has proved highly successful and profitable.