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Grow More Rape

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Grow More Rape

Abstract
Rape, rape, rape and more rape—that should be an important part of the crop program on Iowa farms that carry livestock, particularly swine, sheep and calves.

Keywords
Animal Husbandry, Agronomy, Farm Crops

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences | Animal Sciences
GROW MORE RAPE

Rape is the greatest annual swine forage of the corn belt. Rape is highly relished and cuts down the concentrated feed bill, an acre saving as much as $60 worth of $1.50 corn and $110 meat meal tankage.

AGRICULTURAL EXPERIMENT STATION
IOWA STATE COLLEGE OF AGRICULTURE
AND MECHANIC ARTS

ANIMAL HUSBANDRY SECTION
AGRONOMY SECTION
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GROW MORE RAPE

BY JOHN M. EVYARD AND W. R. HECHLER.

Rape, rape, rape and more rape—that should be an important part of the crop program on Iowa farms that carry livestock, particularly swine, sheep and calves.

Rape makes wonderfully good forage, being one of the greatest annual emergency pasture crops of the corn belt.

An acre of rape recently pastured with young growing pigs by the Animal Husbandry Section of the Iowa Agricultural Experiment Station, saved 366 pounds of corn and close to half a ton of meat meal tankage, actually 881 pounds. Valuing the corn at $1.50 a bushel and the meat meal tankage at $100 a ton, this rape acre replaced $53.86 worth of these high priced feeds.

Rape is an exceptional forage crop for Iowa conditions. This is all the more appreciated when we emphasize that in good rape years, pigs pastured on this forage require less grain feed for 100 pounds of gain than when grazed on alfalfa. This is an "efficiency" commentary on the rape, because alfalfa is the greatest American pasture and forage crop.

To get an adequate idea of the relative value of rape and alfalfa pastures, it is well to give a few figures upon some weanling pigs, taking them from about 50 pounds in weight up to the handy, marketable size of 225 pounds, these pigs being fed respectively on alfalfa and rape pastures.

RAPE PASTURE ALMOST EQUAL TO ALFALFA FOR HOGS

One group on each pasture was self-fed, "free-choice" style, being given shelled corn, meat meal tankage and rock salt in separate feeders. On alfalfa pasture, it took 148 days for them to gain from approximately 53 pounds to 225 pounds; on rape pasture, it took 121 days, or practically the same time. The feed requirement for 100 pounds of gain on alfalfa was 342.7 pounds of shelled corn plus 31.7 pounds of meat meal tankage, a total of 374.4 pounds; on rape the showing was even better, the requirement being 342.5 pounds of shelled corn plus 22.4 pounds of meat meal tankage, a total of 364.9 pounds, or a little less corn and practically 9 pounds less of meat meal tankage was required on rape as compared to alfalfa pasture. Notice particularly that actually less of this high priced $100 a ton material from the packing house was required on rape than on alfalfa pastures, thus indicating that rape is a very high protein and mineral supplemental feed.

Where the pigs were carried through the summer on about a three-fourths corn ration and then put on full-feed after the forage season closed, the results show up even better in favor of rape. The results in brief are these: On alfalfa pasture it took 148 days, but on rape only 145 days, or three days less. On alfalfa pasture it took 353.4 pounds of corn, but on rape only 335.2 pounds of corn, or 18.2 pounds less than with alfalfa for each 100 pounds of gain. On alfalfa it took 35.1 pounds
of meat meal tankage for every 100 pounds of gain but on rape only 25.8, a saving of 9.6 pounds of tankage in the putting on of each 100 pounds on foot.  
This evidence in itself is enough to convince those who realize the high value of alfalfa pasture that rape is a superior forage crop. But it is well to bear in mind, of course, that altho the above results demonstrate the high quality of rape pasture when it is used for balancing the corn and similar grain rations, yet they do not bring home to one’s mind just what is the carrying capacity of rape as compared to alfalfa pasture, or in other words the relative yields.

In the Ames experiments, a yield of "five tons field cured hay to the acre" alfalfa pasture grown on 50 bushel corn land will yield enough to carry, if pastured to the limit, from 30 to 50 pigs from weaning time in Juno on to the close of the season, or about the middle of November, when a very liberal grain ration is fed. Ordinarily, tho, we pasture only about one-third to one-half as many pigs as this on such alfalfa, or from 10 to 25 or possibly 30, so that we can take off our regular first, second and sometimes the third cuttings. On rape pasture, we practically count on the carrying of from 20 to 30 pigs to the acre under similar conditions.

Of course, if one limits the ration very severely, then he cannot pasture so many to the acre on either alfalfa or rape. Generally speaking, however, our results have shown that it pays to feed a very liberal ration on both of these pastures, particularly to young growing pigs that are being pushed for market, and quite decidedly so on those fall shoats that are being rushed for August, September or October markets.
VALUABLE FORAGE FOR ALL KINDS OF LIVESTOCK

Rape is an all-around live stock forage, being adaptable particularly to swine and sheep, but also good for calves, cattle and horses. Its greatest field of usefulness, however, is for swine and sheep. It is palatable to all of these animals. Rape is adaptable to Iowa soil and climate, doing particularly well on the corn lands, especially when there is an abundance of moisture and the weather is not too hot. Rape yields heavily of digestible protein to the acre. It analyzes high in good quality protein, running up to 37 per cent of this muscle-building, blood-making, nerve-forming material in the dry matter (this being the determination upon young edible rape after the moisture has been entirely dried out). Alfalfa cannot be said to run any higher than this under similar conditions. Of course, rape varies some, ranging from 37 per cent protein in the dry matter when young and tender down to perhaps 20 per cent in the edible portion of older, taller and more woody rape. Inasmuch as it is protein that is needed to balance corn on the farm, rape, therefore, is splendid for this.

BALANCES CORN RATION

Rape runs relatively high in mineral matter, more especially in calcium and phosphorus, the two elements that go to make up the major portion of bone. Rape leaves as eaten run low in crude fibre (woodiness) and this makes it of much use in replacing grain in the ration. Rape is a general all-around heavy yielder, netting as much as 40 tons of green materials to the acre under favorable conditions. Rape is splendid in that it balances the great corn belt concentrate, namely, corn, supplying its deficiencies. Thus rape makes the corn crop more efficient for livestock production. Rape is superior as a corn balancer, ranking alongside of alfalfa and medium red clover in this respect. Rape provides a long pastureage season, or from early June to about the middle of November, sometimes even later, depending upon the severity of the late freezes, and furthermore it stays green during July and August if the soil is rich and moisture plentiful. Rape endures trampling and grazing splendidly, particularly when small animals are used, while for cattle and horses it is not so satisfactory. Anyhow, the cattle and horses should be turned out on rape only to clean up in the late fall, and thus prevent waste, provided of course that there are not enough swine and sheep on the farm to consume it before the heavy freezes.

GROWN EASILY

Rape is easily seeded and furnishes quick pasture. It has many leaves and inasmuch as the leafy portions are particularly valuable for young growing stock, it is superior in these respects. Rape should be much more appreciated than it now is. It really has not been given one-tenth the emphasis it deserves. Practically every corn-belt farm which raises swine and sheep should have its patch of rape, particularly so in July and August when the blue grass is dry and hard, or when the second growth of clover fails to come, and thus in those dry hot months insure that the pig and the sheep "keep coming" so they do not have a set back, as is only too often the case. Foresight is more gratifying than hindsight, particularly to him who, depending on blue grass and red clover pasture, finds that in late summer when these are dry and hard, his rape has come on beautifully.—he profits thereby in that his pigs and sheep keep doing finely, their gains are kept up, and they go to market at an earlier date. Thus indirectly precious human
labor is conserved in that they are fed to marketable weight and condition in less time.

FOR SHEEP

Sheep do splendidly on rape, it being particularly adapted to the fattening of lambs. There is much less chance for them to pick up worm infection on rape than on blue grass, because they eat of the leaves that are high from the ground. The same is true of pigs. Lambs, being rapidly growing animals, find rape with its "growth producing" chemical composition particularly adapted to them. When lambs are fed on rape, however, it is a good plan to give them some shelled corn in addition, which stimulates them to fatten more readily in that they are able to utilize the rape to better advantage. Rape, in itself, is almost too rich a protein feed to be used alone, altho it can be so handled.

For flushing the ewes at breeding time, rape is a superior feed. It makes it possible for them to gain rapidly in nutritional and reproductive tone, and thus less breeding services are required and a large average number of lambs per ewe are more likely to result. It can be used as a flushing feed for brood sows also by feeding a liberal grain ration of corn and a little tankage or milk in addition. With sheep likewise we like to add a little corn on rape pasture at breeding time especially if the corn is not too high priced. Sheep, however, can get along much better without grain than can swine.

FOR SWINE

In pasturing rape with pigs, it is advisable to feed them a little protein supplement such as skim-milk, meat meal tankage or oil meal in addition to the corn that is allowed, altho very creditable pigs can be made upon rape pasture when they are fed corn without the use of any high priced supplements. The dairy farmer knows full well that milk is splendid whether fed as skim or buttermilk. Rape is better adapted to young growing pigs than to dry brood sows, altho it is fine for both. One may pasture from 15 to 30 spring pigs, whereas under the same conditions only 3 to 5 dry brood sows could be handled. The dry brood sows do not need such an abundance of high protein and mineral feed, altho of course it must be emphasized that sows that are dry do particularly well on rape pasture when they are fed liberally of corn, grain or barley or similar grain feed in conjunction. The addition of meat meal tankage or buttermilk, or linseed oil meal is worth while for the milk producing sows.

PASTURING PRECAUTIONS

In pasturing, let the rape keep ahead of the pigs and sheep — in other words, do not graze too closely. Some good herdsmen like to alternate the rape pastures and this is a good practice, but somewhat bothersome. By alternating, one gets the advantage of the very new growth, one pasture being used while the other is regrowing. This insures a tender growth continuously, but if not done cautiously and wisely is likely to decrease the yield because there is a tendency to over-pasture before changing to the recuperated field.

SWINE BLISTERING

The blistering of swine has been the unhappy experience of some of rape’s most enthusiastic advocates. Blistering of white swine is much more common than of the black or red ones. Why? The black and red pigments in the skin of some breeds are protective in nature, screening
out the harmful blistering rays. Black hogs with white belts may blister over the white portions when conditions are just right. The thin haired hogs are most susceptible, and we often find our heavy haired individual blistered over the ears, nose and tail because the hair is practically absent there. In some eight years experience with rape for swine at Ames, we have had blistering on a small scale in three different years, but not at all serious. If these pigs had been kept off the rape when it was wet and "dewy" they would not have been sealded. We have had blistering on alfalfa and red clover also, but we go right ahead each year as usual and if the hogs tend to blister a little, then give them a coating of black crude oil or dark colored vaseline over the injured area. But keep the hogs out of the wet rape on hot sunshiny days, else there is a chance they may blister as much as does the white boy who goes swimming in June or July, and spends too much time on the bank sunning himself. The rape itself is not to blame; the water and the rays of the hot sun work the havoc.

LITTLE DANGER FROM BLOAT

There is very little danger on rape from bloat, altho there is some. The swine can be turned right in but to be absolutely safe with sheep, it will be well to accustom them to the rape. taking a few days to do this, preferably turning them on the first time after they have had a good feed of other nutritious materials. But if bloat does occur, one of the best home remedies for lambs or ewes affected, or even calves, is drenching with a pint or two of good fresh milk drawn directly from the cow. Repeat the dose in case the animal does not show signs of fairly quick relief.

It is well to remember the exhortation of Frank Kleinheinz, sheep instructor of the Wisconsin Agricultural Experiment Station: "Remember
that the milk must be warm from the cows udder. Cold milk does not absorb the gas as warm milk does. Give the milk as warm as possible and be careful not to choke the sheep when drenching it in this bloated condition.' Bloating is most likely to occur when the plants are quite young, tender and most succulent, more especially when the dews are heavy or when the weather is damp and muggy feeling and ground and plants wet as is often the case the day following thunder showers and heavy rains. Be very careful on such days to handle the sheep cautiously to promote safety. The running of the sheep on blue grass on these sultry, damp days is a suggestion that may be practiced profitably.

We have never heard of swine bloating because of rape feeding, and do not believe it occurs.

FALL CARE OF RAPE

In the fall just before freezes come, in order to conserve the rape which has grown luxuriantly to a surplus state, it is a good plan to clean up the entire field with the surplus livestock of the farm — swine, sheep, cattle or horses — because if the rape is not consumed before the very heavy freezes come about the middle of November, it becomes foul smelling like rotten cabbage and worthless thereafter.

Rape is primarily a pasture crop but can be used for soiling. It is not suitable for hay or silage purposes on account of the large amount of moisture which it contains. The seed costs less than that of other forages; approximately seventy-five cents will buy five pounds of rape, the average amount sown on an acre. Under favorable conditions of early spring, rape grows so rapidly that it is ready to pasture in from six to nine weeks after seeding. A small acreage of this rapid growing, palatable and nutritious forage makes for better all-around and more profitable farm management.

GROWTH OF THE PLANT

Rape is closely related to cabbage, turnips and rutabagas. The seed, the root system and the smooth, large succulent leaves resemble those of cabbage — but there is no tendency to form a head. The plant grows from one and one-half to two feet tall under average conditions and when produced under particularly favorable environment will measure three, four or more feet in height.

METHODS OF GROWING THE CROP

Three common methods of seeding rape in Iowa are: (1) alone on specially prepared land, (2) with small grain in the spring and (3) between the rows of corn at the last cultivation.

Rape seeded in the early spring usually produces the largest returns, because the plant grows best during cool, moist weather and then, too, the entire growing season is taken advantage of in one seeding. Fields can be sown satisfactorily as late as mid-summer, but the success of late seedings is doubtful,— depending largely on the rainfall during July and August. Summer seedings may not make a profitable growth every year, yet the average returns in all parts of Iowa more than justify the necessary expense and labor of seeding.

SEEDING ALONE

Seeding rape alone on specially prepared land guarantees more sure and more rapid growth than when put in with other crops. When this system of seeding is followed the crop can be utilized either for pasturing or for soiling. The largest returns are obtained when pasturing is delayed
Fig. 3. Some good rape pigs. These pigs ran on rape pasture all summer. They required considerably less corn and less high priced tankage for every hundred pounds of gain than similar pigs not on rape. In one year the rape saved 28 pounds of "hundred and ten dollar a ton" meat meal tankage for every 100 pounds of gain made and saved also 12 pounds of corn. This is contrasted with straight corn and meat meal tankage feeding. The rape pays regular annual dividends in livestock farming. Try it and be convinced of its high merit, as have been thousands upon thousands of others who have learned of its sterling worth thru pleasing experience.

until the plants are about a foot high and when close grazing is avoided through the season so that growth will continue until late fall. Very young pigs, however, can be turned into rape when the plants are 6 to 8 inches high, inasmuch as they do not tear up the plants or devour them entirely, but generally consume only the tender leafy portions.

In seeding rape alone, the most common plan is to broadcast or drill like small grain, at the rate of three to eight pounds to the acre, using more seed when broadcasting. It is not advisable to sow too thickly, because when crowded the plants do not have sufficient moisture, plant-food and sunshine to make a thrifty, high yielding growth. The seed can be distributed and covered most uniformly by drilling from the seeder attachment of a grain drill, but may be broadcasted and covered by a light harrowing. When drilled it is preferably piped into the main grain hose, using care not to cover the rape deeper than necessary to have sufficient moisture for germination. Under most conditions a depth of not more than one-fourth to three-fourths of an inch is satisfactory.

Seeding in rows from 24 to 36 inches apart with three pounds of seed per acre, and cultivating to conserve moisture and to keep down weeds are occasionally practiced. The use of a grain drill with sufficient spouts closed to place the rows the desired distance apart is the most practical method of "row" seeding. This method, compared to seeding like small grain, has this advantage: it gives rape more opportunity to secure sun-
shine, air and fertilizing constituents and thus it grows more rapidly and livestock may waste relatively less by trampling; yet it is doubtful whether the difference is sufficient to justify much increase in the cost of production, unless it be on poor, rather sandy lands which are inclined to lose moisture easily or on fields that are particularly weedy.

SEEDING WITH SMALL GRAIN

Rape is frequently sown to much advantage in small grain and pastured after the grain has been harvested. It grows rapidly after the harvesting of the grain, furnishing a large amount of excellent pasture in late summer and fall, at which time other pastures, especially blue grass and red clover, are often times inclined to be dry and hard, and of relatively little value as succulent and high protein feeds. When mixed with early and short strawed varieties of small grain there is a tendency for the rape to grow so high that the succulent tops are cut by the binder and tied in the small grain bundles, where they may interfere with drying and curing. But even with this difficulty such seedings are successfully practiced.

When rape is put in with early varieties of oats, it is frequently seeded two or three weeks later than the oats in order to give the grain crop the advantage in growth.

Rains are usually depended upon to cover the rape seed, tho if the oats have been drilled the ground may be harrowed lightly.

Rape alone makes an economical forage for an all-season hog pasture but from \( \frac{1}{4} \) to \( \frac{3}{4} \) bushel of oats may be added to increase the variety and quantity of feed. For sheep, calves and colts a combination of crops consisting of three pounds of rape, one bushel of oats, one-half bushel of one or two other small grains, and ten to twenty pounds of early amber sorghum will supply feed until late in the fall. Ten pounds of sudangrass may be substituted satisfactorily for the sorghum. With such a mixture the oats are at their best during the spring and early summer months; the sorghum or sudangrass makes the most growth during late summer, while the rape furnishes excellent pasture until very late in the fall. The addition of red or sweet clover at the rate of eight pounds per acre should increase the feed for fall pasture, but it may be difficult to obtain a stand of clover if the rate of seeding the other crops is as heavy as suggested above and the clover seed is costly. In the northern sections of the state Canadian field peas at the rate of 1½ bushels together with 3 to 5 pounds rape to the acre is a fair mixture particularly for swine, but straight rape for both sheep and swine is preferred to mixtures.

SEEDING BETWEEN THE CORN ROWS

Rape is one of the most valuable pasture crops which can be seeded in the corn at the last cultivation. The corn and rape growth can be harvested profitably by "hoggimg down" or by pasturing with sheep in the fall. The leafy plants also tend to shade the ground sufficiently to keep the land free of weeds. The seed is generally scattered with a hand seeder at the rate of about three to five pounds per acre, immediately preceding the last cultivation. It may be sown a little later with a one-horse drill, but the delay in time of seeding and the additional labor are objections which probably more than offset the advantage of providing a more uniform distribution and covering of the seed.
Fig. 4. "Hogging down" corn in the bare corn field. This weedless corn field should not have been "rapeless"—Yes, the pigs did well but they ate about a half pound of tankage daily, costing about 2½ cents each day for each pig. This could have been largely replaced, and the corn would have "gone further."—A good stand of rape in the corn field that is to be "hogged down" should be worth at least $15 at present prices of corn and hogs, as contrasted to the same field "hogged down" straight without rape. Put rape in the corn field every summer, and reap the beneficial, economic harvest. Such advanced methods make the American swine farmer more efficient and makes each corn acre yield more pork and other meat food.

SEED

There are two types of rape, the winter or biennial and the summer or annual. The biennial kind lives two years where the winters are extremely mild, as in the south and on the Pacific coast, but in the corn belt the plants are killed by hard freezes in late fall, so it is necessary to make new seedlings every year. The summer or annual type, which is also known as "bird seed" rape, produces seed the first season but the plants do not make sufficient growth to be of value for forage. The winter or biennial kind, usually known as Dwarf Essex rape, is the only one recommended for cornbelt seeding. Although war conditions have made it difficult to obtain large supplies of the English and Holland grown seed, reports from dealers indicate that large amounts of this variety obtained from Japan and Manchuria are available throughout the United States at the present time. This seed apparently gives practically the same results as that on the market three or four years ago.

SEEDED

The largest yields of rape are produced on deep, fertile and well drained loam soils. Neither stiff clay or light sandy lands are well adapted to the crop because growing conditions on such soil are seldom favorable for satisfactory growth throughout the season. Good corn land usually provides favorable conditions for a luxuriant growth of the crop. Conveni-
ently located feed yards, which are not needed during the summer months, make excellent places to sow rape. The plant draws heavily on soil fertility and responds well to the application of manure, particularly when added to land which has been cropped for a number of years. The most rapid and thrifty growth results on a well pulverized and firm seedbed. A thoroly prepared soil favors tender and succulent foliage which is relished by all classes of livestock. When the crop is sown alone, fall or early spring plowing is advisable; although on stalk land a mellow seedbed can be prepared by thoroly diskimg and harrowing.