HOG PASTURES

CROPS FOR SOUTH DAKOTA

And a Plan to Provide
Clean Lots and Pastures

Published and distributed under Acts of Congress, May 8, 1914, by the Agricultural Extension Service, South Dakota State College of Agriculture and Mechanic Arts. W. F. Kumlien, Director, the United States Department of Agriculture cooperating.
1.

Hog Pastures in South Dakota.
Profitable pork production demands the use of good pastures. This circular deals with this problem.

Part one contains a list of the important hog pasture crops; their relative efficiency as pork producers; points on culture and sections in South Dakota where they can best be grown.

Part two contains a complete plan for a system of hog lots and pastures to provide clean land and the rotation of crops that best fit into such a system.

Good Pastures Mean Hog Profits.

A large part of the success with the spring litter will depend on getting the sow and littler on pasture when the pigs are ten days to two weeks old or as soon after that age as possible. Most of the losses of pigs, after they are three or four days old, are due to the pigs becoming infested with worms and mange and infected with necrotic enteritis and other disease germs during the first few weeks of their lives. Filthy, contaminated hog pens and yards around the hog house and barn are the sources of this trouble. Nature's tonics for young pigs are exercise, sunshine, plenty of green succulent feed, plenty of good water and clean surroundings. The man who will be the most successful and earn a high average number of pigs for each sow kept on the farm is the man who

Issued by the Extension Service,
South Dakota State College.

By
Ralph E. Johnston, Extension Agronomist.
Turner Wright, Extension Livestock Specialist.
2. will plan to take advantage of these tonics. Forcing the pigs to take exercise by chasing them up and down the feed alley in the hog house, in those cases when they are born too early in the year or when weather conditions will not permit getting them out on pastures, only half way solves the problem of exercise. It is just as important for the health and thrift of the litter that the mother get exercise as it is for the pigs to get exercise.

Experiment station results and the experience of successful hog growers prove beyond doubt that the use of pasture or forage crops adds materially to the profits. The Kansas Experiments station in a series of experiments involving a large number of hogs showed clearly several years ago that it does not pay to try to grow pigs in dry lots if pasture crops can be made available, even though good grain feeds may be used. Later experiments conducted at the South Dakota Experiment station have fully substantiated the Kansas results. Professor Morrison, in the book Feeds and Feeding, gives a summary of results obtained in eleven tests at several different experiment stations in which hogs fattened on corn and tankage in dry lots were compared with hogs fattened on corn and tankage, on alfalfa or clover pastures. The results shown in this summary are indicative of the results which may be expected from the use of pastures for fattening hogs. The pigs used in these experiments weighed an average of 52 pounds each at the beginning of the tests and were fed to market weight. The summary of the results showed that the use of an acre of clover or alfalfa pasture saved 20.5 bushels of corn and 468 pounds of tankage.

Crop For Hog Pastures.

ALFALFA - The best hog pasture. A perennial plant, staying on the land year after year and producing more pounds of good pasture than any other crop,
when given proper care. A legume, highly palatable and nutritious, rich in lime. A bone and muscle building food. Just what the sows, growing pigs and fattening hogs all need. Makes for economical pork production. Adapted for use in the permanent pasture which can be kept free of disease by pasturing one or two years, then used only for hay for year or two, then pastured again. Have plenty of alfalfa pasture - more than the hogs can possibly eat. One acre of good alfalfa will carry twelve or more 75-100 pound pigs during average season. Alfalfa makes excellent hay. Provide plenty of it for brood sows and fall pigs in the winter time.

Alfalfa will grow in all parts of South Dakota. The principal points to observe to secure a successful field are: 1-Firm seed bed, fine and free from lumps. 2-Clean seed bed, free from weeds. 3-Seed early, soon after small grains. 4-Seed shallow, not over one inch deep. 5-Plant clean, good quality, hardy South Dakota grown seed, 8 to 12 pounds per acre. For further information about alfalfa see Extension Circular 193, Extension Service, State College, Brookings, S. Dak.

A good field of alfalfa should never be over-pastured. Do not pasture the first year of its growth - except, possibly, just lightly during a very favorable season. Alfalfa should never be grazed close at any time. Avoid late fall grazing. Leave a good growth on the field for winter protection. A practical method of handling the alfalfa pasture is to have a field large enough so that one or more hay crops can be cut. This prevents over-pasturing and provides fresh green shoots, also alfalfa hay. Another method is to divide the field into two or more lots and change the hogs as one lot becomes eaten down.
RAI'E - An excellent annual forage crop. Probably the best single, one season pasture crop for South Dakota where there is sufficient rainfall. On good rape pasture hogs will make as economical gains as on alfalfa. One acre of rape, under favorable soil and rainfall conditions, will carry from 10 to 20 spring pigs. Rape will supply the earliest and best spring planted hog pasture. There should be much more rape planted in South Dakota, where conditions are right. This means especially the eastern one-third of the state.

Rape is a rank growing forage plant closely resembling cabbage. The seeds are small, round and black. The Dwarf Essex variety is the kind to plant. Buy seed of a guaranteed purity and germination test. Rape is best adapted to cool, moist climates. It will stand considerable cold weather and light frosts. Rape does best on rich, moist, loamy soils well supplied with vegetable matter. Rape should not be planted on light, sandy soils or heavy, clay soils. It is not a crop for the drier parts of South Dakota. Rape seeds are small; therefore make a firm, well prepared, seed-bed. When planted alone or with small grain on corn stalk or fall plowed land, the usual preparation of the seed bed is sufficient. Plant seed shallow - about one-half inch. Plant early in the spring for early pasture. Plant 4 to 5 pounds of seed per acre. Plant with grain drill or broadcast and cover with harrow. In the corn field plant 4 to 5 pounds at the last cultivation.

Rape should not be pastured until the plants are at least six inches high and then only by small pigs. When planted alone, for pasture, under favorable conditions, this will usually be from 6-8 weeks after seeding. Rape is a rapid growing crop and enough hogs should be kept on it to prevent too rank and coarse a growth. A good plan is to plant two lots of rape, one a little later than the other. Thus the hogs
can be changed about, grazing on one lot while the other is growing.

Small Grains; Rape; Field Peas:

Oats & Rape - A mixture of oats and rape, for early spring pasture, is excellent. Some farmers prefer barley instead of oats. The small grain is here planted for forage and not for grain production. The oats or barley will provide the earliest pasture while the rape is getting started. This mixed pasture can be used earlier than rape alone. If not pastured too closely, this mixture will furnish pasture until mid-summer, or until dry weather stops the growth of the rape.

For this mixture the seed-bed is given the same good preparation as for a small grain crop. Plant from 1 to 1 1/2 bushels of small grains and 5 pounds of rape seed. Plant early. Plant the rape seed shallow, the oats first.

Oats & Field Peas - A mixture of oats and field peas makes a very good short season hog pasture. Both furnish early pasture. The field peas are a legume, therefore rich in bone and muscle building materials.

Field peas require a cool, moist climate for their best growth. In the northeastern part of South Dakota more field peas, with small grains, for pasture, could be used. The high cost of seed is a big factor in preventing the planting of more acres. Prepare a good seed bed. Seed at the usual time for oats. Plant 1 to 1 1/2 bushels of oats and 45 to 60 pounds of field peas.

Oats, Field Peas, Rape - This mixture combines the good qualities of all three crops. It furnishes the
early feed from the oats and peas and the later feed of the rape. It contains a legume crop.

Seed this mixture at the usual time for oats. First plant the oats, 1 bushel per acre; then the field peas, about 45 pounds per acre. This mixture should be drilled. Next broadcast 3 to 4 pounds per acre of rape seed and harrow it in. This mixture is recommended only for the extreme eastern part of South Dakota.

**Red Clover** - An excellent biennial legume hog pasture. Red clover ranks next to alfalfa as a useful, all-around hog pasture crop. Red clover is a very good crop to use for hog pastures because the sod is usually plowed up every two years and the clover changed to another field. This keeps the hogs on clean land which is a very essential part of a good hog pasture. Red clover also provides a good legume hay for winter feeding.

Red clover is recommended only for the eastern one-third of South Dakota. Even in many places in this section of the state, sweet clover could profitably take the place of red clover as the legume crop in the rotation. If red clover is planted principally for a hog pasture, it has a much wider use than when planted as the legume crop in the rotation. Red clover may be planted alone, or with early maturing grain crops. When planted especially for hog pasture, red clover could well be seeded alone or with about one-half the usual seeding of early oats or barley. To make sure of a good stand of clover cut the grain crop for hay just after heading out. Medium red is the variety to plant. The principal points in planting red clover to secure a successful field are: 1-A firm, fine and well prepared seed bed. 2-Clean seed bed - free from weeds. 3-Seed early - time of planting oats or soon
1. 

thereafter. 4-Seed shallow - not over one inch deep.
5-Plant clean, good quality, northern home grown seed
- 8 to 12 pounds per acre. For further information se-
cure a copy of Farmers' Bulletin No. 1339, entitled,
"Red Clover Culture".

The small young red clover plants should not
be pastured too soon or closely during the first year.
Late fall pasturing should be avoided because this
tends to encourage winter injury especially during
hard winters. During the heat of the summer if the
clover field is pastured only lightly there will be
more fall pasture.

Sweet Clover - Sweet Clover makes a good hog pas-
ture. Sweet clover is a hardy, vigorous growing,
legume. It ranks close to alfalfa and red clover
as a hog pasture crop for South Dakota. This crop
is rich in bone and muscle building elements for hogs.
Sweet clover is a biennial plant, hence it is rotated
with other crops which means clean pastures because
of the plowing and cultivation given to the soil. One
acre of good sweet clover pasture will pasture 20
or more spring pigs.

Sweet clover has a very wide field of usefulness in South Dakota. It is recommended for growing
in all sections of the state. It is the legume crop
to use in the rotation. Successful stands can usually
be secured - especially in the eastern half of the
state - by planting 8 to 10 pounds with the small
grain. If sweet clover is planted especially for
hog pasture, it had best be planted alone or with a
light seeding of some early maturing grain crop, which
should be cut for hay just after heading out. Either
the white or yellow blossom can be used. Plant early
in a firm and fine seed bed. Plant shallow and use
Sweet clover is a rapid growing crop. For the best hog pasture it must not be allowed to grow too rank and coarse. If there is not sufficient stock to keep it down it should be clipped occasionally leaving a 6 to 8 inch stubble, to produce tender new shoots. A new sweet clover field can be pastured, lightly, when the plants are six inches high. This crop therefore provides about the earliest spring planted legume pasture for hogs.

Sudan Grass - Sudan grass is a fine stemmed leafy variety of sorghum. Sudan grass is recommended especially for hog pasture during the hot and dry part of the summer. It is an annual plant and therefore is good only for one season. Pigs like Sudan grass and they do well on it, especially during the hot summer, when other pastures are generally short. Sudan grass is not a legume - like alfalfa and clovers - and therefore does not produce as much bone and muscle building materials. Pigs on Sudan grass pasture will therefore require more of these materials to be supplied by such feeds as tankage, skim-milk or buttermilk.

Sudan grass should not be planted until the soil has thoroughly warmed up, about May 20th to June 1st. Prepare the seed bed same as for corn only somewhat firmer. Plant clean seed germinating at least 80 percent, broadcast or drilled like small grain, at the rate of 15 to 25 pounds per acre. On the higher, drier lands, use 15 pounds, on the lower wetter lands use 25 pounds. A grain drill set for seeding two pecks of wheat per acre will plant 20 to 25 pounds of Sudan grass. The seed must be planted shallow. For further information see Farmers' Bulletin 1126 entitled, "Sudan Grass".
Sudan grass will not furnish early pasture. Sudan grass fits in best as a hog pasture for the midsummer or not and dry part of the year. A small field of good Sudan grass pasture is generally very useful during this period. It is best not to pasture a new seeding of Sudan grass until the plants are about a foot high. Sudan grass does develop some prussic-acid after a drought or frost. Hogs however, are not susceptible to this form of poisoning. Caution and good judgment must be used however, with other kinds of livestock.

Small Grains - The spring small grains - oats, barley, wheat - either singly or in a mixture, will make a very acceptable early, succulent pasture. Such crops will furnish pasture the earliest of any spring planted crop. With such an early pasture, then by the use of Sudan grass or Amber sorghums, green pasture can be had from early spring until fall. Pigs on small grain pastures should receive, for best results, concentrated bone and muscle building feeds. Winter Rye is a very useful small grain for hog pasture because it will furnish late fall pasture and also the earliest spring pasture. This feature makes rye an admirable pasture crop for the sows and little pigs.

The small grains should be planted at their usual seeding dates, or a trifle earlier. They should be seeded a little thicker than for grain production. Oats is the best single small grain for pasture, followed by barley.

Sorghums or Cane - The sorghums are resistant to heat and drought and make acceptable annual hog pastures in the drier sections of the state. Such a pasture ranks about the same as the wild grass pastures when in their best condition. The sorghums however, will furnish pasture in mid-summer when the native grass pastures
10. Have dried up. Hogs on sorghum pasture should receive some kind of concentrated bone and muscle building feed.

Amber sorghums - properly called sorgos - are the best to plant for pasture. These are the sweet sorghums. The three best varieties are: Dakota Amber; Minnesota Amber; Red Amber. Sorghum seed should not be planted until the soil has thoroughly warmed up, or not until just after planting corn. Prepare seed bed same as for corn. Plant the seed shallow. Be sure of the germination of the seed because there is considerable sorghum seed of low germination. Plant good seed at the rate of 20 to 30 pounds per acre - less in the drier parts of the state and more in regions of greatest rainfall.

The sorghum pasture is ready as soon as the plants are about a foot high, or a little less. Sorghums are known to develop prussic-acid poisoning after a drought or frost, which is dangerous to most livestock except hogs. Care therefore should be exercised to keep other livestock off the sorghum pasture under these conditions.

Millet - The millets are not very desirable hog pasture crops. They can be used in an emergency however, for young pigs when other pastures are not available. Millets are not very suitable for pasture purposes because of their shallow root system which allows the plants to be pulled up very easily. Also millets do not renew their growth very quickly after being eaten off.

If millet is planted for hog pasture the foxtail type should be seeded. The Kursk, Gold Mine, Siberian and Common are recommended in the order named. The seed bed should be well prepared - fine and firm. The seed should be planted shallow. Plant from 15 to 24 pounds per acre - less in the drier parts and more in regions of greatest rainfall.
Rotating Hog Lots and Pastures.

Part Two

An abundance of good pasture on clean land makes it possible to wean a large number of thrifty pigs per sow. Such a pasture and pigs make for cheap and profitable pork production.

Hogs pick up many round worm eggs and disease germs in old lots and pastures which have been used continuously. Thus the worms and diseases are the direct cause of the loss of thousands of pigs and the stunted growth and lack of thrift in thousands of other pigs in South Dakota every year. The remedy for these troubles is to keep the pigs in clean pens and on clean pastures rather than to allow them to become filled with worm eggs and infected with disease germs. Trying to cure them with medicinal treatments, while keeping them in the old lots and pastures, which are the source of the trouble will never meet with success.

There are many hog growers in the State who did not have much success in raising pigs in the spring of 1923; the average number weaned for each sow being only three or four, or less, and who by using clean pens and pastures in 1924 increased the average number of pigs weaned from each sow to more than seven. Some of the essential and most important changes made in getting these results were:

1 - Keeping every sow and her pigs in a clean pen until the pigs were ten days to two weeks old after which time they were moved to clean pasture as soon as weather conditions would permit.

2 - Hauling the sows and pigs to the pastures instead of driving them through the old lots.
<table>
<thead>
<tr>
<th>Pasture A</th>
<th>Pasture B</th>
<th>Pasture C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong> - Spring plowed, seeded early to mixture of early oats about 1½ bu., and rape 5 lbs.</td>
<td><strong>First Year</strong> - Spring plowed, seeded early to early oats 1 bu.; clean and scarified sweet clover 10-12 lbs.; alfalfa 4-6 lbs. Do not pasture until Pasture A is getting short of feed.</td>
<td><strong>First Year</strong> - Spring plowed and seeded about the same as Pasture B, 1st year. Not pastured at all this year.</td>
</tr>
<tr>
<td><strong>Second Year</strong> - Spring plowed and seeded the same as Pasture B, 1st year. Not used this year.</td>
<td><strong>Second Year</strong> - Pastured. Keep sweet clover plants from forming seed either by close pasturing or cutting.</td>
<td><strong>Second Year</strong> - Pastured. In mid-summer the land should be disked and 10-12 lbs. of sweet clover and 4-6 lbs. of alfalfa seed per acre planted. Do not let old sweet clover plants produce a rank growth and make seed after pigs are taken out. Now close to ground all sweet clover stalks after planting new seed.</td>
</tr>
<tr>
<td><strong>Third Year</strong> - Pastured and then treated same as Pasture C, 2nd year.</td>
<td><strong>Third Year</strong> - Spring plowed and sweet clover plants are a few inches high. Spring seeded to oats and sweet clover the same as Pasture B, 1st year. Not pastured.</td>
<td><strong>Third Year</strong> - Pastured. Keep sweet clover plants from forming seed, either by close pasturing or cutting with mower.</td>
</tr>
<tr>
<td><strong>Fourth Year</strong> - Pastured. Keep sweet clover plants from forming seed, either by close pasturing or cutting with mower.</td>
<td><strong>Fourth Year</strong> - Pastured and then treated same as Pasture C, 2nd year.</td>
<td><strong>Fourth Year</strong> - Spring plowed after sweet clover plants are few inches high. Spring seeded to oats and sweet clover the same as Pasture B, 1st year. Not pastured this year.</td>
</tr>
</tbody>
</table>
14.
3 - Flowing and renovating the old pens and lots around the hog's house or barn and planting them to pasture crops, and using new pastures.

4 - Having the sows and pigs come to the watering troughs or fountains over clean ground.

The crops which come the nearest in providing and meeting these conditions or essentials will prove the best to grow. It is recognized of course that practical conditions on each farm must be taken into consideration in working out any changes for that farm. It also is recognized that any method of handling and growing hogs which might be suggested oft-times will have to be modified to meet existing conditions. One of the main things to consider on every farm is to get results without an extra expenditure, in the long run, of money and labor. A suggested plan for providing both sanitary conditions and feed in the hog lots and pastures.

I. Small Pens, used only for few weeks after farrowing.
II. Two Small Lots, used as feeding and watering places.
III. Three Small Pastures, used until pigs are turned into large pasture.
IV. Large Permanent Pasture, used by growing and fattening herd.

In considering the crops to be planted in these four different classes of pens, lots and pastures, two points are outstanding, namely:

A. The Small Pens and Lots are to grow crops mainly for the cultivation necessary to crop production,
which will help to control sanitary conditions and animal parasites; also to provide a plant covering to keep down dust and in so far as possible prevent the formation of mud holes.

B. The Pastures, both Small and Permanent, are to provide an abundance of good pasturage for the maximum period of the year.

The Crops and Their Culture.

I. The Small Pens. Immediately after the small pigs are removed from these small pens to the small pastures, the land is plowed, harrowed and seeded. The object here is to give this land a good "working-over" by plowing and harrowing, then get some crop growth upon it. The following crops are suggested for seeding:

<table>
<thead>
<tr>
<th>Eastern S. D.</th>
<th>Central S. D.</th>
<th>Western S. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture Small Grains.</td>
<td>Millets.</td>
<td></td>
</tr>
</tbody>
</table>

The oats and rape; oats and field peas and small grain mixture can all be seeded just as early as the land can be prepared, the earlier the better. Use about $1\frac{1}{2}$ bushels of oats and 5 pounds of rape; about 1 bushel of oats and 30 to 45 bushels of field peas; a mixture of one or more kinds of small grains (wheat, oats, barley, etc.) at the rate of 2 to $2\frac{1}{2}$ bushels per acre. Plant the amber sorghums at the rate of 20 to 30 pounds per acre, Sudan grass 15 to 20 pounds per acre and the millets about 20 pounds.

II. The Small Lots. There are to be two small lots. These are what would commonly be called "hog
lots", or the places near the other farm buildings where the hogs are fed and watered. These lots would be frequented by the hogs very often. They would be quite small, about 1/4 acre or less, and are not intended to furnish any quantity of feed.

Two of these lots are to be provided. They are to be known as Lots A & B. Lot A would be used for a year, while Lot B would not be used but be growing a crop for use the next year when it will be used and Lot A be unused.

In establishing a cropping system for these small hog lots, the following problems must be solved:

1. The land should have a growth of green forage for as long a period as possible during the year it is being used.
2. The lot which is used must be ready for use early in the spring. This means that it must be prepared the previous year.
3. Crop should be grown which will tend to discourage the pigs from "rooting-up" the soil, thus discouraging the formation of mud-holes.

The following two systems are suggested as being practical and meeting the needs.

**First Year.**

**Lot A**

Spring plowed, seeded to mixture of small grains, about 2 to 2 1/2 bushels; or mixture of oats 1 1/2 bushels and rape 5 lbs. This lot is then used the balance of the year.

**Lot B**

Spring plowed, seeded to mixture of one-half regular grain rate of oats, barley or wheat,
and scarified sweet clover at the rate of 10-12 pounds per acre. This mixture could be improved by the addition of alfalfa and Brome grass at the rate of 5 pounds and 10 pounds per acre. This lot is not used this year.

Second Year
Lot A
Spring plowed, seeded to a mixture of small grains and sweet clover (same as Lot B, last year). This lot is not used any this year.
Lot B
Used during entire season.

Third Year
Lot A
Used during entire season.
Lot B
Spring plowed, seeded to mixture of small grains and sweet clover (same as Lot B 1st year and Lot A 2nd year.)

This changing from Lots A & B, and seeding one lot the year it is not used, is carried on year after year. If it seems advisable however, each lot can be used for a part of each year. Thus the lot which is established in the spring of the year can be used in the late summer and fall of that year, and again the next spring while the newly seeded lot is getting established. This plan could be followed, especially in eastern South Dakota if it seemed advisable to do so. In central, and especially western South Dakota, the plan of using one lot the entire year would probably be better, except in years favorable for the starting of the new stands of sweet clover.

System No. II.
Lot A
Plowed in spring, seeded to mixture of small
12. grains and rape (Same as System No. I) Pastured until mid-summer, then plowed and seeded to fall rye at the rate of 4-5 pecks per acre. The rye will want to be pastured enough to prevent the forming of heads, if season is favorable for fall growth.

Lot B
Used as it is until the small grain mixture in Lot A is ready, then plowed and seeded May 10 to June 1st to Sudan grass at the rate of 20 pounds per acre. Pastured in late summer after Sudan grass is established, or beginning about June 10th to 20th, depending upon the season and whether in southern or northern part of state. (See Page 8)

Second Year:
Lot A
Pasture winter rye in spring until field of Sudan grass in Lot B is ready, which should be on average season about June 10th in Southern parts of the state and 10-15 days later in the Northern parts. Plow in mid-summer and plant to winter rye at the rate of 4-5 pecks per acre. Pasture rye in fall if necessary to prevent formation of heads.

Lot B
Plowed in early spring and seeded to Sudan grass between May 10th and June 1st, the early seedings in the southern part of the state, and the later in the northern parts. Pastured for balance of season, after Sudan grass is established.

Third Year:
Lot A
Same as Lot A, 2nd year.
Lot B
Same as Lot B, 2nd year.
III. The Small Pastures. The small pastures from 1 to 3 or more acres, are to provide feed for one or more sows and litters from the time the small pigs are 2 weeks old until they are near weaning time, or are weaned, after which they are put into the large pasture. At least three such small pastures should be provided where there are pigs of different ages, or where any large number of pigs are raised. Two of these pastures are in use each year and the third one is idle. This makes a change in pasture every 3rd year and gives one pasture for use each year, which has been idle for one year.

The Pastures By Years. Plan No. I.

(See pages 12 & 13)

First Year

Pasture A

Spring plowed, seeded early to mixture of early oats, 1½ bu., and rape 5 lbs. This will furnish as early pasture as can be obtained from spring seeding.

Pasture B

Spring plowed, seeded early to early oats 1 bu., clean, sacrificed sweet clover 10-12 lbs.; alfalfa 4-6 lbs. Do not pasture until pasture A is getting short of feed. Let clover and alfalfa grow as long as possible before pasturing.

Pasture C

Spring plowed and seeded the same as Pasture B, 1st year. Not pastured at all first year.

Second Year

Pasture A

Spring plowed and seeded the same as Pasture B, 1st year. Not used this year.
Pasture B

Pastured. Keep sweet clover plants from forming seed, either by close pasturing or cutting with mower.

Pasture C

Pastured. In mid-summer after pigs are taken from this pasture, the land should be disked shallow and 10-12 pounds of sweet clover seed and 4-6 lbs. of alfalfa per acre planted to insure a crop of new clover and alfalfa plants for the next year. Do not let old sweet clover plants produce a rank growth and make seed, after pigs are taken out. Mow close to ground all sweet clover stalks after planting new seed.

Third Year

Pasture A

Pastured and then treated same as Pasture C, 2nd year.

Pasture B

Spring plowed after sweet clover plants are few inches high. Spring seeded to oats and sweet clover the same as Pasture B, 1st year. Not pastured this year.

Pasture C

Keep sweet clover plants from forming seed, either by close pasturing or cutting with mower.

Fourth Year

Pasture A

Pastured. Keep sweet clover plants from forming seed, either by close pasturing or cutting with mower.
Pasture B.
Pastured and then treated same as Pasture C, 2nd year.

Pasture C.
Spring plowed after sweet clover plants are few inches high. Spring seeded to oats and sweet clover the same as Pasture B, 1st year. Not pastured this year.

Notes:
Red Clover can be used in place of sweet clover in eastern South Dakota if desired.

Much of the success of this plan depends upon getting a stand of clover the second year the land is to be pastured. If no stand is secured there will be no pasture. A stand can almost always be secured from the second seeding if the seed is planted early enough right after the pigs have been taken out of the pasture. The sweet clover plants then on this pasture must be cut close-to-the-ground, immediately after seeding, so that the new sweet clover plants can get the moisture and light. Such cutting will also prevent seed from forming - in most cases - a condition which is desirable.

Flowing the sweet clover land in the spring, after the plants have started to grow, will greatly help to keep this plant in check. Also preventing the sweet clover from forming seed in the fall of its second years growth, will help to keep the sweet clover in check. Flowing is absolutely necessary to the best pasture and to the success of this plan to provide clean, worm and disease free pastures. Any of the biennial sweet clovers can be used. The small white blossom - Grundy County, Crystal Dwarf, etc., is to be preferred. The common biennial white - large.
22. growing variety - can be used, also the yellow blossom. There is a tendency for the yellow blossom to become more of a weed than the white because of its seeding habits, once it becomes firmly established.

Another plan which might be more satisfactory in the regions of smaller rainfall. Plan No. II.

First Year
Pastures A, B, C, are treated same as in Plan No. I already outlined. (See Page 19)

Second Year

Pasture A.
Not used this year. Spring plowed and seeded to mixture of 1 bu. early oats and 10-12 pounds sweet clover.

Pasture B
Pastured, then fall plowed immediately after the pigs are taken off the land.

Pasture C
Pastured. Fall plowed immediately after pigs are taken off the land. Winter rye is then seeded at rate of 4-5 pecks per acre. If winter rye starts to head it should be pastured.

Third Year

Pasture A.
Pastured. Fall plowed immediately after pigs are taken off the land. Winter rye is then seeded at rate of 4-5 pecks per acre. If winter rye starts to head it should be pastured.

Pasture B
Not used this year. Spring seeded to mixture of 1 bu. of early oats and 10-12 lbs. of sweet clover.
Pasture C  
Pastured. Fall plowed.

Fourth Year.  
Pasture A.  
Pastured. Early Fall plowed.

Pasture B.  
Pastured. Fall plowed immediately after pigs are taken off the land. Winter rye is then seeded at the rate of 4-5 pecks per acre. If rye starts to head it should be pastured.

Pasture C.  
Not used this year. Spring seeded to mixture of 1 bu. early oats and 10-12 lbs. of sweet clover.

The above plan gives one field of sweet clover pasture each year and one field of winter rye pasture, while one field is establishing a stand of sweet clover.

IV. The Permanent Pasture.

When the young pigs are about three to four months old, and the period of most susceptibility to worms has passed, they can all be turned together into a large permanent pasture. This pasture is permanent only in that it can be used for a term of years. New "permanent" pastures will have to be provided as the old "permanent" pastures become less productive or are killed out by overpasturing.

The one best crop to use is alfalfa. A Pasture, much too large for the use of the average herd of pigs annually raised, should be provided. The excess of
Pasture tends to prevent overpasturing and the killing out of the alfalfa; also fresh shoots of alfalfa are provided because one or more hay crops can and should be harvested.

Just as soon as the "permanent" alfalfa pasture begins to thin out and grasses and weeds begin to come in, then a new field of alfalfa should be established and the old field put into a cultivated crop. Never plow up an old "permanent" alfalfa hog pasture however, until a new alfalfa pasture is ready for the hogs. Be sure however, to start the new "permanent" alfalfa hog pasture in plenty of time before the old pasture becomes unprofitable to use.

If for one reason or another it is impossible to have the "permanent" alfalfa pasture every year, sweet clover or red clover could be used. Seeded with small grain one spring, these clovers would provide pasture the next year. This plan would work in nicely when establishing a new "permanent" alfalfa pasture, especially if the season was unfavorable for getting a new stand. This plan would also work if the old alfalfa pasture was killed out during the winter by too close pasturing or other causes. The farm will of course, have to be fenced properly for such a plan to work. Sweet clover can be used in all parts of South Dakota. Red Clover should be planted only in the eastern one-third of the state.