4-1913

Soiling Crops to Supplement Iowa Pastures

H. H. Kildee
Iowa State College

Follow this and additional works at: http://lib.dr.iastate.edu/iaes_circulars
Part of the Agriculture Commons, and the Animal Sciences Commons

Recommended Citation
http://lib.dr.iastate.edu/iaes_circulars/19

This Article is brought to you for free and open access by the Iowa Agricultural and Home Economics Experiment Station Publications at Iowa State University Digital Repository. It has been accepted for inclusion in Circular (Iowa State College. Agricultural Experiment Station) by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Soiling Crops to Supplement Iowa Pastures

Abstract
The pastures upon most Iowa farms do not furnish enough feed for the cattle during the hot, dry months of summer. The problem of supplying the necessary feed most economically is important and may be solved by one or a combination of the following methods: 1. Better care and management of pastures. 2. Use of summer silo. 3. Use of soiling crops.

Keywords
Animal Husbandry

Disciplines
Agriculture | Animal Sciences

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/iaes_circulars/19
Soiling Crops to Supplement Iowa Pastures

By H. H. Kildee

The pastures upon most Iowa farms do not furnish enough feed for the cattle during the hot, dry months of summer. The problem of supplying the necessary feed most economically is important and may be solved by one or a combination of the following methods:

1. Better care and management of pastures.
2. Use of summer silo.
3. Use of soiling crops.

Better care and management of pastures is absolutely necessary to secure the best results from our farms. In every neighborhood practical demonstrations may be found that a little care given to a pasture will greatly increase its production of feed for live stock. But this in itself is not enough for dairy farmers or for many beef cattle growers. To secure the greatest possible returns from their farms, they find it to their advantage to keep more cattle than they can properly pasture without the aid of silage or soiling crops. The use of silage or soiling crops upon dairy farms results in a saving of land, fencing, food and manure and in greater and more profitable production of milk.

SILAGE OR SOILING CROPS.

Whether corn silage or soiling crops will be more economical and efficient in supplementing the pasture will depend somewhat on specific conditions. The experimental work which has been conducted along this line has not furnished very conclusive evidence in favor of either.

Evidently a silo small in diameter filled for summer use is the most satisfactory and economical solution of the problem on the average Iowa farm. Most of the soiling crops require more labor in getting them to the animals than the average farmer, who practices mixed farming, wishes to spare from the field work in the busy season of the year.

However, the man who has a large herd of dairy cattle and wishes to secure the best possible returns from his acreage will find it to his advantage to grow some soiling crops. There is nothing better than fresh, palatable, nutritious green feed to stimulate milk production. Then, too, by having in each mixture a leguminous plant, soiling crops can be grown that are superior to corn silage in balance of nutrients. Another class of farmers who would profit by the use of soiling crops
Is the renters who can not persuade their landlords that silos are necessary fixtures upon farms. To these classes must be added the men who have not put up silos yet and who wish to grow crops to feed in addition to their pastures during the coming summer. All of them may adopt the common practice of cutting green oats, sweet corn and field corn to tide the cattle through the short pasture period, but that is not as satisfactory or profitable as to grow crops that are adapted for this purpose and can be cut at the proper stage of maturity.

In answer to the many questions which are being received at the Iowa Agricultural Experiment Station, this circular on soiling crops has been prepared.

SYSTEM EMPLOYED ON COLLEGE DAIRY FARM.

During the past three years soiling crops have been successfully grown and used upon the Iowa State College dairy farm at Ames. Such varieties have been grown as would furnish a succession of green feed to supplement the limited acreage of blue grass pasture. Under this system the cows have been turned into the pasture nights and forenoons and then put in the barn about 2:30 p.m. and given a liberal allowance of the freshly cut green feed. Under ordinary dairy farm conditions the above, or partial, soiling system is more satisfactory than to keep the cows confined all the time and haul all the green feed to them as is done on some of the larger dairy farms. It is also much more satisfactory than to feed the cows the green feed on the ground in the pasture as is sometimes done with much soiled and wasted feed as a result.

RESULTS OBTAINED.

Increased production of milk from decreased acreage has been the result secured from this system of soiling crops. By bringing the cows into the barn at the time of day when the heat and flies are especially troublesome and spraying them to remove flies, it is made possible for them to eat their feed in comfort. Thus they are enabled to keep up a normal flow of milk when they would ordinarily decline seriously. We have also found that because these palatable green crops are used, less grain needs to be fed our heaviest producers and that ordinary producers may be kept up in production and condition without grain.

In 1911 thirty-seven cows were kept on 19²/₄ acres of pasture and in addition were supplied with the soiling crops from 8 acres. Counting the land devoted to both pasture and soiling crops each cow was kept the entire season on .74 of an acre. The value of the soiling crops may be fully realized when it is remembered that the summer of 1911 was one of scanty rainfall and many farmers in the vicinity of Ames were allowing 2½ or 3 acres of pasture for each cow. In 1912, 45 cows were kept on the 19²/₄ acre pasture and in addition were allowed a trifle over 6 acres of soiling crops—or each cow was kept on about .6 of an acre. In addition to this, in 1912 the cows grazed on a 15 acre meadow for a few weeks, beginning about the middle of August. It was found in 1912 that the entire cost of pasture and soiling crops for each cow, counting rent of land, labor, seed, etc., was only $6.62 for the entire pasture season.

LABOR.

The objection usually raised to growing soiling crops is the amount of labor necessary to cut and haul the feed to the cows each day. We have found that this takes two men about one and one-half hours each day. In 1912, with the larger number of cows, it was found that a team and mower could be used to good advantage in cutting the daily
allowance of feed. Considering the value of sowing crops in increasing production and decreasing cost of production of dairy products, it will be found that excellent returns are secured for time spent.

CROPS GROWN.

OATS AND CANADA FIELD PEAS: We have found it most satisfactory to make two sowings of this standard crop. We put in the first plot as soon as the ground is ready for oat seeding in the spring and the second about two or three weeks later. We use an early maturing variety of oats in sowing first plot and a late maturing variety in the second seeding. This first sown plot is usually ready for cutting about June 15 and the second about July 5. When sown at the rate of 1½ bushels of oats and 1½ bushels of Canada field peas per acre, excellent results have been obtained. Some, however, advocate using ½ bushel less of the Canada field peas. The grain drill is the most satisfactory to use in putting the crop in. It is best to sow the peas first and deeper than the oats. However, excellent results were secured where the two were sown together.

In 1912 the yield from the first sown plot was 5½ tons of green feed per acre and from the second sown plot 4.38 tons per acre. In 1911, due to lack of rainfall, the yield was somewhat less, ranging from 4 to 4½ tons per acre.

The question of how large a plot should be sown for a certain number of cows is oftentimes asked. However, this is a question that should not cause worry as that part of the crop not utilized as green feed will make excellent hay. In 1912 for the 45 cows on 19½ acres of pasture we had 1.71 acres in first plot and .8838 acres in second.

FODDER CANE: This is an excellent and widely grown forage plant. In our work we have found it to yield very heavily and to be very palatable and nutritious. Cattle eat it readily and waste but little of it if fed in a manger, except when the cane is advanced in maturity when the animals will leave some of the larger stalks if heavily fed. If sown early in May the cane will be ready to start cutting about July 10. It should be sown in limited areas so that part of it will not become mature before it is fed. Upon rich ground it is best to drill the seed in with a grain drill using all the drills as a dense growth results in finer stalks with less fibre. Sowing in this way requires about 70 pounds of seed per acre. In 1912 the yield of green cane was 22.28 tons per acre.

FODDER CANE AND COW PEAS: This combination has proved to be one of the best we have tried. As a feed it has given better results than either cane or cow peas alone. This is due to the fact that the combined crop is more palatable than cow peas alone and more nearly balanced in nutrients than cane alone due to the protein in the cow peas. This crop can not be safely put in until the ground has become warm. We drill it in soon after corn planting. Our experience would indicate that from the time the ground is warm enough for the cow peas until the first frost comes in the fall that no better crop can be grown for sowing purposes. It is best to drill the cow peas and cane separately; the rate of seeding used has been one bushel of cow peas (Whip-poor-will or New Era varieties) and 30 pounds of cane seed per acre. The yield of green feed per acre in 1911 was about 10 tons while in 1912 it ranged from 7.1 tons upon rather poor soil to 14.62 tons upon good soil.

MILLET: This is not as good a crop for sowing purposes as the ones just mentioned but as it is not materially injured by a light frost it may be used later in the fall than the cane and cow peas. The plot of ground used for the first sowing of oats and Canada field peas may be plowed after the removal of the crop early in July and sowed to millet,
By sowing the millet about July 8 in 1911 a fairly good yield of millet was secured and due to the delayed heavy frost, it was used until October 26. In 1912, however, the heavy killing frost came so early that practically none of the millet could be used for soiling, but was cut for hay. Millet has been sown at the rate of 3 pecks per acre and has yielded from 2 to 3½ tons per acre.  

**Alfalfa:** Green alfalfa may be utilized for soiling three times each season and it is needless to say that it is one of the best crops. It is first ready early in June just before the oats and Canada field peas and then again just before the cane and cow peas are ready for use. The third cutting comes on just when the cows appreciate a change from the cane and cow peas.

**Other Crops Grown:** Rye has been tried but found to be inferior as a soiling crop. While it is of value as an early pasture it is deficient as a soiling crop because it comes on when it is not usually necessary to supplement the pasture and it is in proper stage of maturity for soiling but a very short time and it lacks palatability.

Cow peas and Soy beans have not been found to be especially valuable as soiling crops when grown alone, although when grown with cane the cow peas are excellent. While they make excellent hay, as green crops they seemed to lack palatability.

Because upon most farms sufficient pasture is allowed to give the animals the necessary feed until the middle of June at least, the following outline of a succession of soiling crops will doubtless prove of value.

### Succession of Soiling Crops Used on the Iowa State College Dairy Farm

<table>
<thead>
<tr>
<th>Approximate time of Cutting</th>
<th>Crops</th>
<th>Approximate time of Sowing</th>
<th>Rate of seeding per acre</th>
<th>Average yield of cured hay per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 10 to June 15</td>
<td>Alfalfa</td>
<td>Spring or Aug.</td>
<td>20 lbs.</td>
<td>*8 tons</td>
</tr>
<tr>
<td>June 15 to July 5</td>
<td>Oats and Canada Field Peas</td>
<td>April 5</td>
<td>1½ bu. oats</td>
<td>5 tons</td>
</tr>
<tr>
<td>July 1 to July 10</td>
<td>Oats and Canada Field Peas</td>
<td>April 20</td>
<td>1½ bu. oats</td>
<td>5 tons</td>
</tr>
<tr>
<td>July 10 to July 15</td>
<td>Alfalfa</td>
<td>Spring or Aug.</td>
<td>20 lbs.</td>
<td>*4 tons</td>
</tr>
<tr>
<td>July 10 to July 20</td>
<td>Amber Fodder Cane</td>
<td>May 5</td>
<td>70 lbs.</td>
<td>20 tons</td>
</tr>
<tr>
<td>July 15 to August 15</td>
<td>Fodder Cane and Cow Peas</td>
<td>May 15</td>
<td>30 lbs. cane</td>
<td>12 tons</td>
</tr>
<tr>
<td>August 15 to September 20</td>
<td>Fodder Cane and Cow Peas</td>
<td>June 10</td>
<td>30 lbs. cane</td>
<td>12 tons</td>
</tr>
<tr>
<td>September 20 to heavy frost</td>
<td>Millet</td>
<td>July 10</td>
<td>3 pecks</td>
<td>3 tons</td>
</tr>
</tbody>
</table>

*The first cutting of alfalfa yielded 2.96, the second cutting 1.46 and the third 2.61 tons of cured hay per acre in 1912.*