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Alfalfa in South Dakota

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ALFALFA
IN
SOUTH DAKOTA

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A L F A L F A
In
South Dakota

By
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Extension Agronomist.

Acknowledgment is hereby made of assistance
received from :-

- Dr. A. N. Hume, Brookings, S. Dak.
Agronomist, State College.
- Mr. Nick Caspers, Rapid City, S. Dak.
Mgr. Alfalfa Seed Growers Exchange.
- Mr. H. F. Hansmeier, Bristol, S. Dak.
Extensive Alfalfa Grower.

Alfalfa in South Dakota

1.

Alfalfa is a hardy, deep-rooted, long-lived drought resistant legume, belonging to the same family of plants as sweet clover, red clover and soybeans. Alfalfa is nearly a perfect forage. Alfalfa is very important as a crop for South Dakota. There should be a fair proportion of nearly every South Dakota farm planted to alfalfa.

Alfalfa-
Premier
Hay Crop. Well cured alfalfa hay excels all grass hays in feeding value and is readily eaten by all classes of farm animals. Alfalfa is the best legume hay for South Dakota. Good alfalfa hay is nearly equal to wheat bran. Alfalfa hay furnishes a palatable feed high in digestible protein.

Digestible Nutrients of Different Hays

| Name of Forage | Digestible Nutrients in | | | | |
|--------------------------------|-------------------------|-----------|-----------|----------|----------|
| | Total dry: | Crude | Carbo- | Protein: | Total |
| | matter in: | hydrates: | hydrates: | Fat: | |
| | 100 lbs. | 100 lbs. | 100 lbs. | 100 lbs. | 100 lbs. |
| Alfalfa Hay (All Analysis) | 91.4 | 10.6 | 39.0 | 0.9 | 51.6 |
| S. Clover Hay (Biennial White) | 91.4 | 10.9 | 38.2 | 0.7 | 50.7 |
| Red C. Hay (All Analysis) | 87.1 | 7.6 | 39.3 | 1.8 | 50.9 |
| Soybean Hay | 91.4 | 11.7 | 39.2 | 1.2 | 53.6 |
| Timothy Hay (All Analysis) | 88.4 | 3.0 | 42.8 | 1.2 | 48.5 |
| Corn Fodder (Dry ears on) | 91.0 | 5.5 | 51.7 | 1.5 | 53.6 |
| Oat Straw | 88.5 | 1.0 | 42.6 | 0.9 | 45.6 |
| Brome Grass | 91.5 | 5.0 | 42.2 | 0.9 | 51.2 |
| Western Wheat Grass | 94.1 | 4.2 | 50.5 | 0.9 | 56.7 |
| Sudan Grass | 88.4 | 3.7 | 45.7 | 0.9 | 51.4 |

This home grown hay reduces the feed bills and makes for profitable livestock production. Feed alfalfa hay to dairy and beef cattle, horses, sheep, hogs and poultry. Feed it especially to growing young animals. A mixture of 6 to 8 pounds of alfalfa and 10 to 12 pounds of smooth brome grass, makes a good hay mixture where a grass is desired. The same is true with timothy and alfalfa.

Alfalfa-
Best Hog
Pasture.

Alfalfa makes a better pasture for hogs than for any other class of livestock. Profitable hog production in South Dakota demands the use of pasture and alfalfa meets the demand. A practical method of handling the pasture for hogs is to have a large enough field so that all the hogs can be turned into it and still harvest one or more crops of hay. Another method is to divide the alfalfa field into two or more lots and change the hogs as one lot becomes eaten down. One acre of good alfalfa will graze twelve or more 75-100 pound hogs during the average season. Alfalfa pasture and a light grain ration means rapid and economical pork. Alfalfa pasture is rich in muscle and bone building elements. Hogs on pasture - especially young pigs - are better and healthier than when not on pasture. Alfalfa should not be pastured the first year of its growth. Never graze alfalfa close at any time. Avoid late fall grazing. Do not pasture later than 30 days before first killing frost. This will allow for growth of alfalfa for winter protection.

Alfalfa
Seed
Production.

The production of alfalfa seed is a very important business in South Dakota. A separate circular takes up this phase of alfalfa culture.

Alfalfa
Benefits
The Soil.

Alfalfa is a soil builder. Because alfalfa is a legume crop it adds nitrogen to the soil. The large roots go deep into the soil and use plant food not touched by the shallow rooted grains and grasses. Use sweet clover in the short rotation of crops.

Plow up the alfalfa fields when it begins to thin out and put it into corn.

Alfalfa
Destroys
Weeds.

A good thrifty field of alfalfa is one of the most practical methods of eradicating lands foul with bad weeds such as Canada thistle, morning glories and other noxious and common weeds. Work the land well to eradicate the weeds. This prepares the land for the alfalfa which finishes the eradication of the weeds.

The Soil
For
Alfalfa.

Alfalfa will thrive in all parts of South Dakota.

There must be plenty of lime in the soil. Most South Dakota soils have plenty of limestone but if the soil is suspected of being sour - lacking sufficient lime - write to the Agronomy Department, State

College, Brookings, for directions on securing sample of soil for testing. Apply limestone to sour soils. The field for alfalfa must have a good surface and subsoil drainage. Select good fertile soil well supplied with humus. Don't plant on poor soil.

The Seed
Bed For
Alfalfa.

The seed bed must be well prepared. It should be FINE, FIRM and CLEAN. Never plant in the cloddy, lumpy, loose, weedy seed bed. These are common mistakes. A seed bed poorly prepared never makes a successful alfalfa field. The young alfalfa plants are poor weed fighters. Make the seed bed FINE and FIRM so that the small alfalfa seeds can come in close contact with the soil particles. This FINE and FIRM seed bed makes for quick and successful germination and also enables the roots of the small, young alfalfa plants to "take hold" of the soil and get a good start. Plant alfalfa on land that was into a cultivated crop - kept clean - the year before. Corn or potato land is given first choice. Fall plowed land well firmed in the spring makes a good seed bed. Spring plowed land is the last choice. If this is used, plow early, PACK WELL, and seed a little late. In central and western South Dakota alfalfa is often planted on "new breaking", the alfalfa being the first crop put on the land. This method has been successful.

The
Alfalfa
Seed.

Plant seed produced in South Dakota. South Dakota produces absolutely the best seed to plant in South Dakota. Never buy just alfalfa seed. Buy South Dakota grown alfalfa seed. Insist on this class of seed. Take no other kind. Do not buy from out of the state seed companies who advertise cheap seed. You can secure a list of sources from which you can purchase South Dakota grown seed by making inquiry of the State College, Agronomy Department, Brookings.

Millions of pounds of alfalfa seed have of late years been imported into the United States from foreign countries. Much of this seed is being offered as hardy northwestern grown seed. There is also much southern grown seed on the market. This seed should never be planted in South Dakota. Buy clean seed free from weed seeds and dirt. Know what your seed will germinate.

Varieties
of
Alfalfas.

Our Common South Dakota No. 12 alfalfa gives good results in all parts of South Dakota. Vale - a variety of common - is a good alfalfa. The Grimm, Baltic and Cossack are all very excellent varieties. Seed of these varieties is higher in price than the S. D. No. 12. Genuine Grimm, Baltic or Cossack, will stand more severe conditions than will the S. D. No. 12. When buying seed of any of these three varieties, BE SURE to get genuine seed and not common, southern, or foreign seed, selling under a false name.

Inocula-
ting The
Seed.

The alfalfa plants should be inoculated. Over much of South Dakota inoculation comes naturally. This is especially true in the more western parts of the state. In eastern South Dakota where alfalfa is being sown for the first time on a piece of land, the SAFE plan is to inoculate. A satisfactory method is to purchase reliable commercial cultures. Otherwise soil from an old, well inoculated field, can be used at the rate of 200 or more pounds per acre.

Methods
Of
Seeding.

Many methods are used. The ideal to strive toward is to plant the seed SHALLOW in the FIRM soil just beneath the surface mulch. From one-half to one inch is the right depth. There are different makes of special alfalfa drills on the market. These and the regular grain drills equipped with grass seeding attachment, make it possible to properly plant the seed. Where it is not possible to use any of these drill machines, the seed can be broadcasted, using machine broadcasters and the wheel barrow seeders or the small hand operated machines. If small hand operated seeders are used, great care must be used to see that field is planted uniformly. Use the harrow after broadcasting. Mixing the alfalfa seed with small grain in the drill is not satisfactory.

The Use
Of A
Nurse
Crop.

A "nurse crop" of flax, wheat, barley, early oats is generally desirable on the average field in eastern South Dakota. Cut the seeding rate of the nurse crop from one-third to one-half. The nurse crop should be taken off the land EARLY if drouth threatens to hurt the alfalfa. It is better to have a nurse crop than to have a big crop of weeds. If flax is used, seed it early. In some sections of eastern South Dakota, good fields of alfalfa have been secured by planting the seed between the rows of growing corn, in clean field, at time of the last cultivation.

Generally in western South Dakota, and with many farmers in other sections of the state, a nurse crop is not desirable. A nurse crop is not absolutely necessary in any section of the state, especially when the field is clean of weeds, and soil does not crust on surface or blow easily.

Date of Seeding.

Seed alfalfa in early spring, with very few exceptions. Plant at the time the small crops are seeded, or a trifle later. Early seeding is generally better than June 1st to 15th, or later seeding, except on new lands, or where field has been given special cultivation to kill the weeds. Late summer seeding is not recommended.

Rate of Seeding.

The amount of alfalfa seed to plant depends very largely upon the following points: 1. Purity and germination of seed. 2. Location and condition of seed bed. 3. Use of crop. Alfalfa seed that is free from weed seeds and of 90% or higher germination is the kind to plant. From 8 to 12 pounds to this kind of seed should be planted for pasture and hay on the average farm in central and eastern South Dakota. If soil is fertile, seed bed is well prepared and free from weeds, the 8 pounds is sufficient. For the more western parts of South Dakota, and for seed production purposes, from 5 to 8 pounds of good seed put into good seed bed is sufficient. On new lands in central and western South Dakota, good fields have been established with amounts as low as 2 and 3 pounds per acre, especially when sown in rows.

Care of Field Leave the field of alfalfa alone as much as possible the first year. If a nurse crop is used, take it off First Year. as soon as possible, even cutting it EARLY, for hay, if necessary to save the moisture for the alfalfa.

If the alfalfa is seeded alone and the weeds become numerous, the field can be cut high when the alfalfa plants are just coming into bloom. Don't cut if there are only a few weeds. Frequent cuttings when the alfalfa plants are young is injurious. Do not pasture alfalfa the first year. Occasionally, a crop of hay is secured the first year under favorable conditions, but this is not to be expected as a usual thing. Leave a good stubble on the field to go into winter.

Care of Field The second year the crop is ready to return yields of Second Year. both hay and pasture. Recent experiments indicate that the proper time to cut alfalfa is when the plants are nearing the full bloom stage and before the stems get too woody and coarse and the leaves begin to drop off. Under this plan two cuttings of hay per year, in eastern South Dakota, results in as large a yield per acre, and keeps a better stand of plants on the fields and for a longer term of years. Some growers decide the time of cutting by the new shoots at the crown of the plant. When these have started and are from one to two inches tall, they cut the crop. In eastern South Dakota the practical plan is to examine the crowns of several plants when about one-tenth of plants are in bloom letting the crop grow until the basal shoots are

least two inches tall. If it is not possible to cut then, do not worry, but plan to cut as soon as possible, not waiting longer than the time when the majority of the plants are just coming into full bloom. In the drier parts of South Dakota it is advisable to cut earlier than where there is more moisture. The plan in these parts should be to cut early enough so that during the average season the alfalfa plants will obtain sufficient moisture to make a quick second growth. Cutting the alfalfa plant is harmful rather than beneficial. Never try to exact the last straw of alfalfa from your field. Don't be too greedy. Be fair to your alfalfa. Late fall cuttings, really early spring, and frequent summer cuttings, all tend to weaken the alfalfa plants and makes possible winter killing and a thinning of the stand, thus bringing in weeds and grasses. This makes an unprofitable alfalfa field. Some growers mow the alfalfa field in the morning, then rake in the afternoon - if the day is a drying one. Some mow in the forenoon and rake the next morning.

Curing
Alfalfa
Hay.

Most of the feeding value of alfalfa hay is in the leaves, therefore save the leaves. Handle the hay as little as possible. Get the hay into the wind-row as soon as possible. The side delivery rake makes for

proper handling of hay and quick curing. Most of the curing should take place in the windrow. The hay must be dry before storing in the barn or in the stack. Hay wet with dew or rain must not be stored or stacked. On large acreages use hay loaders and slings for storing in barns and sweep rakes and stackers for putting in stacks.

Cultiva-
ting The
Crop.

Cultivating the alfalfa field by disking and harrowing has long been advocated. More recent experiments indicate that over most of South Dakota there is little or nothing to be gained by cultivating the alfalfa field for pasture or for hay. So long as the stand of plants is satisfactory and they are making good growth and yielding good crops, leave the field alone. Where weeds or grasses, or where the field becomes hard and baked because of soil conditions, or pasturing, or other causes, cultivation helps. The indiscriminate use of the disk harrow is to be condemned. If necessary to use the disk harrow use it lightly and in combination with the spike tooth harrow. The spring tooth harrow, or one of the newer machines equipped with special alfalfa teeth, are much better.