1-1-1900

Certified Alfalfa

Purdue University Cooperative Extension Service
CERTIFIED ALFALFA

QUALITY FROM SEED TO FEED

Certified Seed is the First Step to Quality Alfalfa

Purdue University
Pamphlet AY36N
Certified Seed is the First Step to Quality Alfalfa

Windrowing for wilted silage May 16 (1st crop). Established May 23 of previous year. Forage varieties used were: Culver alfalfa, S-37 orchardgrass and Ladino clover.

START WITH QUALITY SEED

Plant CERTIFIED Seed for Varietal Assurance: The following table will help you choose your alfalfa variety.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield</th>
<th>Hardiness</th>
<th>Wilt Resistance</th>
<th>Leaf Diseases</th>
<th>Insect Resistance</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>CULVER</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
<td>Excellent</td>
<td>Fair</td>
</tr>
<tr>
<td>VERNAL</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>RANGER</td>
<td>Average</td>
<td>Good</td>
<td>Good</td>
<td>Poor</td>
<td>Very Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>BUFFALO</td>
<td>Average</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Good</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>NARRAGANSETT</td>
<td>Average</td>
<td>Good</td>
<td>Poor</td>
<td>Fair</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>DUPUITS</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>FD100</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>ORCHIES</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>ARNIM</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Therefore we recommend Culver and Vernal for stands of two (2) or more years, and DuPuits, FD100, Orchies, and Arnim for stands of one (1) to two (2) years.

Other Varieties:
There are other varieties available which are not listed in this leaflet. These may be used in Indiana; however, look to certification for assurance of varietal identity.

Non-Hardy Plow-Down Alfalfa:
The following varieties are satisfactory for fall “plow-down” but will not normally survive Indiana winters: African, Caliverde, Moapa and Sonora.

Varieties Not Adapted to Indiana:
Baltic, Cossack, Grimm, Ladak, Lahontan, New Mexico 11-1, New Mexico Common, Nomad, Orestan, Rambler, Rhizoma, Talent, Teton, and Zia, which are certified and recommended in some other states, but not in Indiana.

Other Alfalfas:
“Common” alfalfa is of uncertain origin and highly variable in performance. “Affadavit” seed carries a grower’s declaration of variety, but is not certified. “Blends” are mixtures whose performance will approximate that of the average of varieties blended.

DETERMINE FERTILITY NEEDS

Alfalfa is best adapted to productive, well-drained soils. Poorly drained and shallow soils are not suitable for alfalfa production.

A soil test is the best guide to fertilizer and lime requirements for alfalfa. The optimum pH for alfalfa production is between 6.5 and 7.0. Lime should be applied several months before planting due to the fact that most liming materials react slowly with the soil in neutralizing acidity. If four or more tons are
needed, it is usually preferable to split the application and apply half before plowing and half after, with thorough mixing of the lime with the soil.

A five ton alfalfa crop removes seven times more potash, twenty times more calcium, and the same amount of phosphate as a 100 bushel corn crop. Therefore, high fertility levels are needed for high yields and long term stand maintenance. Fertilizer should be chosen according to soil test results. The greatest amount of potash and phosphate should be plowed down, but at least 40 pounds of elemental phosphorus should be used in the row at seeding time when band seeding.

In order to maintain established stands of alfalfa, annual topdressings (after first cutting) of both phosphates and potash are recommended. Usually 200 to 400 pounds of 0-10-30 will maintain stands for several years. The soil should be retested every four years or each rotation to insure that proper pH and fertility are maintained.

Boron deficiency or "yellow top" occurs on alfalfa on some sandy soils in northern Indiana and on many soils of southern Indiana, particularly during dry weather. Symptoms are yellowing of the tops and stunted growth. The symptoms usually occur on the second and third cuttings. Prevent deficiencies by topdressing with two to four pounds of boron (fifteen to thirty pounds of borax) to the acre, either in a boron-containing "alfalfa" fertilizer or as a separate broadcast application of borax. One application may last several years.

ASSURE DEPENDABLE STANDS

A firm seedbed is necessary for holding moisture around the germinating alfalfa seeds especially in August seedings. Many seedings often perish as the roots grow into air pockets. Fall plowing (about five inches) in non-erodible soils or shallow r1-wing in the spring develops a firm seedbed. The corrugated er is a helpful machine to firm the seedbed before and after seeding, but it will not firm the lower horizons of a soil deeply plowed in the spring or fall. Many small clods help to prevent excessive crusting and baking of heavy soils. Overworking heavy soils tends to break down the structure.

Band seeding followed by press wheels or a corrugated roller is the most effective way of correctly placing the seed and fertilizer. Eight pounds of alfalfa seed is the maximum needed with either four pounds of orchardgrass, eight pounds of fescue, five pounds of bromegrass or four pounds of timothy per acre. Add four pounds of red clover and ½ pound of Ladino if needed because of soil type or utilization purposes.

Straw should be clipped and removed from the field and tall weeds clipped later. Do not clip or pasture after September 7th in northern Indiana, September 10th in central Indiana, and September 15th in southern Indiana the first or subsequent years.

Chemical weed control is now an effective method of seeding alfalfa in lieu of seeding with a companion crop.

Manage for Quality

Animal performance is an expression of forage quality. Forage intake, digestibility and utilization by the animal are all yardsticks in measuring forage quality. The amount of productive energy consumed in a balanced ration determines the size of the animal's response to weight gain, milk and egg production.

Some measurable management factors which affect forage quality are 1) time of harvest as related to growth stage, 2) leaf-stem ratio, 3) extent of forage damage caused by weather and handling at time of harvest and 4) the physical form in which it is fed. Time of cutting or growth stage is the most important management factor associated with rate of hay con-

sumption by animals. Ruminants consume as much as 35 to 40 percent more harvested forage cut in early June as compared to a month later. Digestible matter declines about half percent daily in first growth forages after they reach their optimum stage and level off around 50 percent.

Leaf content of hay is usually a good index as to palatability. Ruminants usually consume greater quantities of those hays with the higher leaf content. The leaf portion of hays suffers greater harvesting damage and loss than do the stems. Grinding and pelleting of hays has increased ruminant intake as much as 10 to 25 percent believed due to increased acceptability and more rapid digestibility.

Weeds and Insect Control

The best annual weed control is a heavy stand of alfalfa or alfalfa grass mixtures. Perennial weeds should be controlled prior to seeding. Alfalfa varieties such as Culver, which have insect resistance, should be used. Control of insects are important to successful alfalfa production. Infestations of spittle bugs, aphids and leaf hoppers may cause considerable damage and reduced yields. For control measures for spittle bugs and leaf hoppers see Purdue mimeos E-28 and E-36.

Time of Cutting

First cutting of alfalfa should be at the time the heads of the associated grass appear. In case of orchardgrass the later maturing varieties allow the alfalfa to be cut in the bud stage. To restore alfalfa root reserves in an orchardgrass mixture allow the second cutting to reach full bloom to increase longevity of the stand.

The safe dates for the last cutting are the first week in September in northern Indiana, the second week in central Indiana and third week in southern Indiana. After a killing frost, grazing is preferred to cutting for hay because more stubble remains for winter protection.

PREPARE FOR HIGH PRODUCTION

Harvested alfalfa contains less nutrients than the living plant, therefore, it is imperative to employ the most advanced methods in harvesting and storing. For example, scientific use of weather information, correct stage of maturity, moisture determination at harvest and satisfactory storage mean the difference between an alfalfa hay that contains 50 percent TDN and 8 percent digestible protein or hay from the same field that contains 67 percent TDN and 16 percent digestible protein. Transferring these two hays to performance in the feed lot may show a three fold difference in favor of the higher analysis hay.

Now let's examine these new methods. The odds of making hay without rain damage are 9 out of 10 if a hay conditioner is used on alfalfa mowed immediately after a cold front passes. This is exemplified by 10 or more degrees drop in temperature, a trace or less of precipitation or widely scattered showers of less than one quarter inch, a wind-shift from a southerly to a westerly or northwesterly direction, low humidity and rising barometric pressure.

Moisture content of grass silage should be between 50 and 60 percent and for low moisture silage 45 to 50 percent. Fine chipping and exclusion of air improve the quality of alfalfa silage.

5 STEPS TO QUALITY ALFALFA

START WITH QUALITY SEED
- plant certified alfalfa seed of an adapted variety

DETERMINE SOIL QUALITY
- test your soil
- lime and fertilize according to soil needs

ASSURE QUALITY STANDS
- plant on firm seed bed
- plant inoculated seed
- place seed at proper depth
- control weeds

MANAGE FOR QUALITY
- maintain soil fertility
- control weeds and insects
- cut at right time
- schedule last cutting to best maintain stand

PRESERVE QUALITY
- preserve quality by proper handling and storage

CERTIFIED ALFALFA The Base for QUALITY from Seed to Feed!