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Interseeding Alfalfa in Corn

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Management Practices for Western Nebraska

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E. F. FROLIK, DEAN · J. L. ADAMS, DIRECTOR

INTERSEEDING ALFALFA IN CORN

MANAGEMENT PRACTICES FOR WESTERN NEBRASKA

Clifford Ashburn1/ and Lionel Harris 2/

Where irrigation water is available, corn can be used as a companion crop for starting alfalfa. Corn offers more total value as feed and cash income than does small grain.

Table 1. Comparison of total digestive nutrients, digestible protein and estimated net energy values for various feeds.

Crop	Yield per acre	TDN Lb.	D.P. Lb.	Est. N. E. Therms a/
Corn Silage	20 Ton	6880	440	6520
Alfalfa	5 Ton	5140	1120	4150
Corn Grain	100 Bu.	4485	375	4485
Barley	65 Bu.	2424	312	2199
Oats	75 Bu.	1682	225	1577

a/ One hundred thousand British Thermal Units.

ALFALFA IN THE ROTATION

It is a good practice to grow alfalfa in the crop rotation on all irrigated soils. Alfalfa furnishes some nitrogen for following crops, helps control erosion and improves physical condition of the soil. Alfalfa also improves the water-holding capacity and rate of water entry into the soil.

1/ Agricultural Extension Economist (Farm Management) Scotts Bluff Station.
2/ Superintendent, Scotts Bluff Station.

Alfalfa provides an opportunity to realize profits in the livestock industry.

You can seed alfalfa in corn on most soil types. In western Nebraska, the practice works well on fine sandy loam and loamy sand soils.

CULTURAL OPERATIONS

Cultural Practices

Level the land before planting on benched or border fields to obtain uniform and efficient irrigation. Level the field where necessary to permit good uniform irrigation by corrugation method.

Fertilizing

Fertilize to produce a maximum yield of corn and a good growth of alfalfa the following years. This will require enough nitrogen to produce 100 to 150 bushels of grain. The phosphorus level should be adequate for the corn and alfalfa. Apply fertilizer on the basis of a soil test.

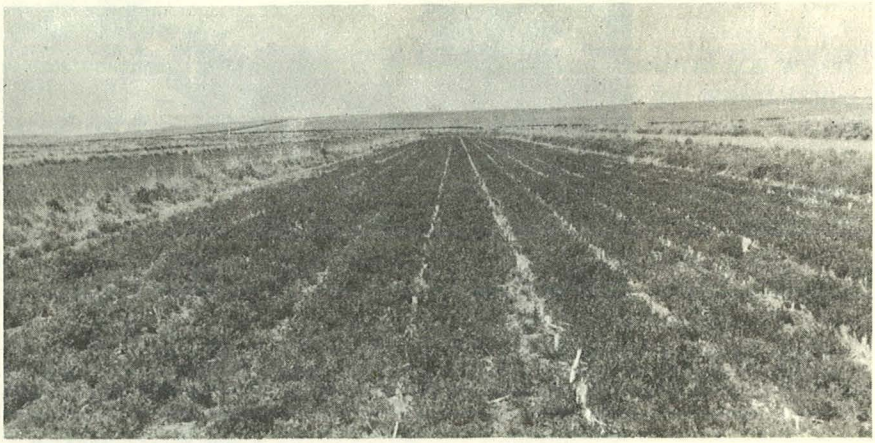
Corn Row Spacing 3/

Plant the alfalfa in corn rows spaced 42 inches apart. Corn yields of 141 bushels per acre were obtained with a plant population of 20 to 25 thousand plants per acre in row spacing of 42 inches. The alfalfa seedlings survived and became established.

Alfalfa seedlings did not survive well in corn rows spaced 30 inches apart.

Alfalfa seedlings grew vigorously in corn rows spaced 60 inches apart but corn yields were 20% less than in rows spaced 42 inches apart.

3/ Results of research work by O. W. Howe at Scotts Bluff Station.



First growth of alfalfa seeded in corn the previous year.

Time of Seeding Alfalfa

Seed alfalfa during the last week in June when the corn is about 12 inches to 14 inches tall. Later seeding may result in equipment damage to the taller corn. When seeded too early (when corn is 6 to 8 inches tall) weeds can become a problem.

Rate of Seeding

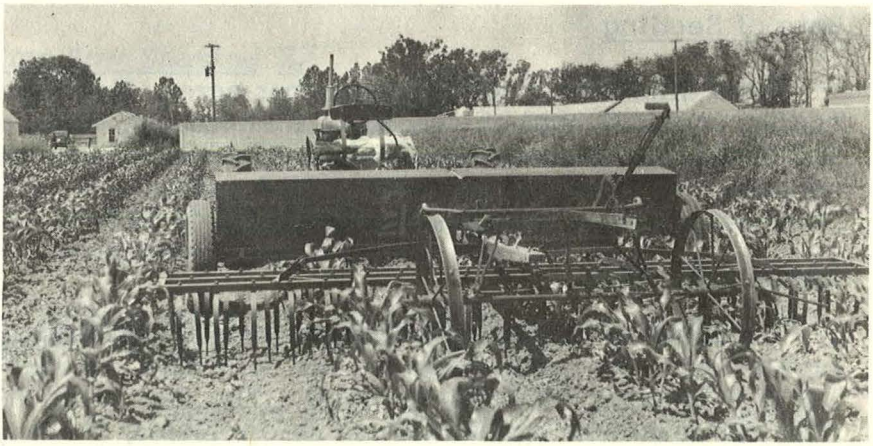
Seed alfalfa at 8 to 12 pounds per acre. Use high quality certified seed of a recommended variety. Alfalfa and grass may be mixed and seeded at the rate of 8 to 12 pounds of each per acre.

Seeding Methods

A number of implements can be used for drilling or broadcasting the alfalfa between the corn rows. A regular alfalfa grain drill can be used. The disk over the corn row should be removed so as not to destroy the corn stand. Successful seedings have been made by bolting the alfalfa box seeder to the front or back of a tractor and using a chain from the tractor axle to run the seeder mechanism.

A finger weeder or similar tool is pulled behind the drill to cover the seed.

Furrow openers successfully used by the Scotts Bluff Station.



Equipment used at the station to seed alfalfa and brome grass in corn. Alfalfa and brome grass were mixed and broadcast with a fertilizer spreader at rate of 10# alfalfa and 12# of brome per acre. A finger weeder was pulled behind the spreader to work the seed lightly into the soil.

Chemical Weed Control

Good cultural practices are the best method for weed control. However, chemicals can be used for weed control.

When the corn is 6 to 8 inches tall and before seeding alfalfa, spray broadleaf weeds with 2,4-D. Spray at least seven days before seeding the alfalfa.

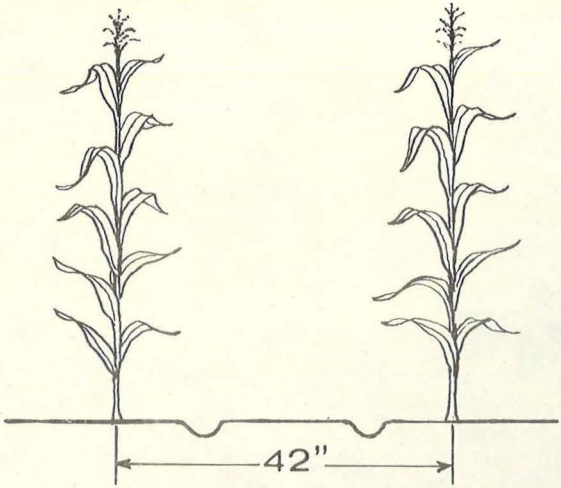
The recommended amount of 2,4-D is one half to one pound of Amine or one-fourth to one-half pound of Ester per acre. Read the label.

Recommendations for chemicals change from year to year.

IRRIGATION

For gravity irrigation, establish furrows immediately after seeding. If alfalfa germinates before furrows are made, many plants will be killed by power and furrow opening equipment. If seeded after furrows are made, the small furrow would be filled with loose soil causing gravity irrigation problems.

Establish two small furrows 22 inches apart between each two rows of corn.



Shallow ditches between corn rows carry a small stream of irrigation water.

Furrows are not needed on level bench terraces or where sprinkler irrigation is used.

For gravity irrigation on sloping fields, establish cross ditches every 250 to 300 feet and irrigate the corn as though it were a field of alfalfa. On fine textured soil and moderate slope, cross ditches may be farther apart.

Run a small head of water in each furrow to avoid excessive soil erosion and avoid washing out or covering deeply the newly seeded alfalfa.

Fill the soil profile to the root depth of the corn. For the first irrigation corn roots will be down 18 to 24 inches. For the last irrigation fill the soil profile to the 5 or 6 foot depth.

HARVESTING CORN

Corn can be harvested for silage or grain. If harvested for grain, remove the stalks. The best method for removing the stalks is to chop with a chopper-blower combination. Where this method is used, little damage will occur to the alfalfa. The chopped corn stalks can be used for bedding.