

SEED CROP NOTES

AUGUST 1988

FIELD INSPECTION FOR CERTIFIED ALFALFA SEED

The California Crop Improvement Association inspected alfalfa and clover seed fields in Fresno County in early July. Reports from the inspectors have been favorable, but growers should be aware that it is their responsibility to submit an application for certification or renewal by the deadline. There were several calls late in the inspection period from growers who were not on the inspector's list.

This year, there was only one change in the guidelines for producing certified alfalfa seed. As of this year, replanting to thicken a stand or to fill in skips is permitted in row plantings. Replanted areas must be noted on the renewal application and a Foundation seed tag from the planting stock must accompany the renewal application.

26,600 acres of alfalfa seed were submitted for certification in Fresno County this year. The harvested acreage of certified seed for last year was 35,000 acres with yields averaging 620 lbs./acre. Non-certified alfalfa seed was harvested on 14,000 acres with an average production of 580 lbs./acre. (Source: Fresno County Department of Agriculture, 1987 Agricultural Crop and Livestock Report.).

PREPARATION FOR HARVEST

As most of you are aware, weed oil is no longer registered for use in California as a desiccant for seed alfalfa. However, there are management practices which can reduce the cost of desiccation and improve the success of the desiccants available for use in California seed production.

Under our typical summer conditions, it generally takes 20 to 28 days to develop mature seed after pollination, and about 14 days from the time the green pods show. This means that prior to September 15 - October 1, defoliation should be delayed as long as there are appreciable blossoms and green pods in the field. After these dates it is advisable to go ahead and spray cure so that harvest can be completed before rains begin. In late fields some green pods are usually sacrificed in order to complete harvest while the chance of rain is low.

INSECT CONTROL

Adult lygus can feed on immature alfalfa seed and destroy the seed's ability to germinate. The late season lygus populations often build up in the green spots of a seed field. It may pay to spot treat for lygus if the seed is not mature in these areas. Once the bees are removed (3-4 weeks prior to harvest), less expensive and more effective pesticides can often be used. Mite control is not recommended after pollination is complete if you have enough moisture in the plants to allow the seed to mature in spite of mite feeding, which causes plants to dry more quickly. Chalcid control is achieved primarily through post-harvest sanitation. Larvae are present within the seed pod and are not affected by spray treatments.

DESICCATION

There are two methods commonly used for curing alfalfa seed. Windrow curing is most often used when the field is late or when there are a lot of weeds. The advantage to windrow curing is that it allows a good percentage of the green seed to mature while it is in the windrow. To avoid shattering, windrowing should be done during periods of high humidity or when dew is present on the plants (before the seed pods open).

The second method is pre-harvest desiccation - spraying or curing of the seed crop with a chemical desiccant. This is done to dry the foliage to make direct combining possible. Spray curing avoids seed loss due to cutting and windrowing and reduces loss caused by wind damage. Use of desiccants also allows growers to influence their own harvest dates since harvest can be delayed until nearly all of the pods are ripe. Once the field is cured sufficiently, combining must not be delayed or extensive losses may result from shattering.

Spray curing works best if soil moisture is low, which minimizes new growth from the crowns. Regrowth from the crowns following desiccation occurs more rapidly in fields where there is available moisture in the soil due to late irrigation, high water tables, or soils with high moisture holding capacity.

Success of field desiccation will depend on the temperature, water table condition, and the density of the foliage. On warm days in open stands, where there is no water table problem, field drying and perhaps one application of a desiccant will suffice. On cool days later in the season, and on dense and matted fields, more than one application will be required to effectively cure the field.

MATERIALS FOR DESICCATION

Diquat, used with a wetting agent, has shown rapid and effective curing. The first application of Diquat rapidly desiccates the leaves of the alfalfa, and exposes the stems. The second spray then penetrates and covers the stems for improved desiccation. Two applications of Diquat at 2 to 4 day intervals, not exceeding the labelled rate, have been used successfully. Complete coverage is essential because only plant parts contacted by the desiccant are killed.

Fields are usually ready for harvest 3 to 5 days after application of the desiccation material depending on the weather and the condition of the field. Shattering may occur after a certain period, so be careful not to spray too many days ahead of the combine.

On the West Side of the San Joaquin Valley wind velocities in the late afternoon (6 p.m.) are higher, and wind directions are more variable, than in the early hours of the morning. In recent studies, the most effective desiccation was obtained when Diquat was applied at 6:00 a.m. Recommendations that late afternoon or evening application of Diquat would provide more effective desiccation could not be substantiated. Climatic conditions on the West Side of the San Joaquin Valley are more favorable for the safe application of desiccants in the morning reducing the hazard of drift.

Endothall (Trade name: Des-I-Cate) is recommended for use on alfalfa where growth is dense or where daylength and humidity do not favor rapid drying. This material is slower acting, but if given sufficient time (10 - 15 days) will cure the entire plant. Addition of a wetting agent or spreader is essential to insure the effectiveness of the chemical.

The desiccants can also be applied in sequence, for example an application of Diquat might be followed by an application of Endothall and a spreader to enhance desiccation of the alfalfa stems.

If a crop is desiccated prematurely with rapidly acting Diquat, when there are many green pods with immature seed, a reduction in yield can be expected since green seed will not mature once it is sprayed. Des-I-Cate is slower acting and immature pods can ripen.

COMBINE ADJUSTMENTS

Excessive cylinder speed is the greatest cause of seed damage and poor germination. But if the cylinder speed is too low, the loss of unthreshed seed will increase. Forward combine speed depends on both the amount of straw and seed fed into the machine and the humidity. The forward speed should

be varied so the amount of straw fed into the machine remains approximately constant. In harvesting spray cured fields, it may be necessary to reduce the auger speed on the platform to 50% of the manufacturer's recommended speed in order to avoid blocking the flow of materials into the machine.

To keep seed damage to a minimum, the recommended cylinder speeds for windrowed crops are 3600 to 4400 feet per minute if flax rolls are used, and 4200 to 4800 feet per minute without flax rolls. For spray cured crops the recommended speed is 4000 to 5000 feet per minute. Lower speeds should be used whenever possible to minimize mechanical damage.

Clearance between the closest cylinder bar and conclave should not be less than 1/8 inch or more than 3/8 inch. Check all cylinder bars to find the closest bar. On some combines it is possible to adjust the clearance at both front and rear conclave. Normally for these machines the front clearance is twice the rear clearance, but in no case should either clearance be greater than 3/8 inch or less than 1/8 inch.

Heavy crops in spray cured fields require a short vertical cutter bar on one end of the platform or header to reduce seed loss. The vertical bar can reduce shattering losses by an average of 45 lbs./acre. Properly adjusted lifter guards are recommended in row planted stands. A reel is not necessary except in very light seed crops. The use of a reel can result in the shattering of seed ahead of the cutter bar.

Fields with plants lodged in one direction can profitably be harvested in one direction going against the lodged plants. When this is done, it is easier to pick up all of the seed and usually results in fewer machine stops. The time used in "dead heading" one direction can easily be gained with the increased harvest efficiency. One way harvesting can also pay off with a light amount of plant growth. In this case, you can take advantage of any breeze by clipping into the wind to assist in picking up all of the plant material possible.

For more complete information on combine adjustments the University of California has a leaflet entitled "Adjustments and Operation of Self-Propelled Combines for Harvesting Alfalfa Seed". To obtain this leaflet, either write or call this office. A few minutes spent each day checking equipment settings and estimating seed losses from equipment damage or from seed left in the field can easily mean 20 - 50 lbs./acre yield.

COVER YOUR SEED HAULING TRUCKS

Trucks and trailers transporting seed from the field to processing plants should be seed-tight and covered to prevent scattering seed. This will help

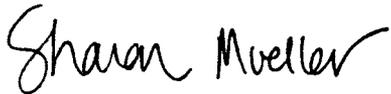
eliminate volunteer plants along roadsides. Alfalfa seed scattered along roads at harvest time is responsible for some early chalcid buildup, increased cost for roadside weed control, and reduces the grower's pay load before it reaches the cleaning plant.

1988-89 ASSESSMENT RATE

Upon recommendation of the Alfalfa Seed Production Research Board, the Director of Food and Agriculture has established the assessment rate for the 1988-89 marketing season for the Alfalfa Seed Production Research Program. The marketing season is from April 1, 1988, through March 31, 1989. The rate is 20 cents per hundredweight with 10 cents per hundredweight on producers, and 10 cents per hundredweight on processors.

There are many publications available through our office on alfalfa seed production which I would be happy to share with you. Please let me know if there are concerns you would like addressed either in a newsletter format or as a potential research project. If I can be of any help to you during the remainder of the season, or if you would be available to show me your production practices, give me a call.

Sincerely,



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