CLIPPING AND IRRIGATING ALFALFA FOR SEED PRODUCTION

There are 11 varieties of certified alfalfa being grown in a seed yield nursery here at Davis. The varieties Africa, Williamsburg, Caliverde, and California Common 49 ranked first with similar high yields. Ranger, Buffalo, Du Puits, and Lahontan were in a second group with slightly lower yields. The low yielding varieties were Vernal, Naragansett and Atlantic with yields 20-40% below the high yielding varieties. Vernal has consistently been 10-20% below Ranger.

Yield variations and differences between varieties in seed production are caused by a great many factors such as light, moisture, plant competition, lodging, seed shatter, pests, pollinators, and population. Cultural treatment and date of cutting back for field clean-up also affect seed yield.

Seed setting in alfalfa is favored by continuous warm, dry, calm weather in which the pollinators work best. Cool nights and mild days tend to slow down cross-fertilization and encourage stripping of flowers.

In the main seed producing areas, favorable seed-setting conditions usually follow a seasonal pattern. The period of maximum seed set can be controlled by varying the date at which a field is cut back in the spring.

Kern County: May, June and July are favorable seed production months. Clipping should be done during early April.

Fresno County: Stand cut back during the April 10-20 period have produced more seed of better quality over a three year trial period. Clipping later than April 26 and earlier than early April decreased seed yields. June and July are the favorable seed producing periods.

Stanislaus County: July and August have regularly been the favorable seed producing months. However, in 1959 August and September were best. Cutting back should be done during the April 15 to May 15 period.

Sacramento Valley: The most favorable response to cutting back was during the April 23 to May 23 period. The period May 5 to 10 was superior. Better yields were obtained when cutting occurred earlier than May 10 rather than later. Clipping later than June 1 should not be done. Earlier clipping caused lodging, dark seeds, and required extra insecticide treatments.

In the Central Valley, plants begin actual growth about February 20. Cultural treatments prior to this date do not influence seed yields. After active growth begins; any treatment, such as disking or cultivating will reduce yield if the stand is not allowed to reach maturity before clipping. If you do nothing to the stand after February 20, then you can cut back when new crown buds appear or when full bloom is reached. If one clips the 1st or 2nd time when the alfalfa is in the bud stage, yield of seed can be reduced 25-50%.

On deep soils best seed yields occur when the alfalfa is irrigated heavily in the winter, allowing the plant to grow slowly and continuously without stressing during the summer. Summer irrigation must be small just before wilting occurs. Wilting will cause flowers to open on a shoot, and no new ones will come on these racemes. New flowers must then come from regrowth. If no stress occurs, flowers will continue to develop on old culms for 75-90 days. Over irrigation will reduce yields as similarly to under irrigation.

When growing alfalfa seed on a shallow soil, good yields can be obtained by irrigating every 12-20 days, similarly to an annual crop. The plants will turn a dark green color just before they wilt. This is a good field observation to use in timing irrigations.

Vernal, Naragansett and Atlantic naturally set seed later than other varieties. Adequate moisture should be maintained later for them by a July irrigation to give good yields.

Agronomy Notes - March 31, 1959