

Forage Queen



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Dear Forage Grower;

The Forage Queen is the first issue of an alfalfa hay newsletter being sent to you by your Fresno County Forage Crops Farm Advisor.

The term "Forage Queen" refers to the queen of the forage crops, "alfalfa". It is anticipated that the Forage Queen will become a bi-monthly publication designed to help you keep up on some of the latest developments in alfalfa hay production.

Its primary purpose is to send on to you information received in the Agricultural Extension Office which you may not have access to elsewhere. Items that will be included are announcements of coming meetings and tours, results of current research, plot work, and other items that will be of interest to Fresno County hay growers.

The only justification for a letter of this type is that it be of use to its readers. For this reason, we welcome your criticism and suggestions on how to improve its usefulness.

WHEN TO CUT NEW ALFALFA FOR THE FIRST TIME

It is important not to cut young alfalfa hay before the plants are well established. Premature cutting is often detrimental to the stand.

Young alfalfa should have a definite crown formed before it is cut. The plants should have at least three mature stems and some regrowth at the base of the plant.

Cutting new hay before it forms a crown weakens the plant by removing the plant's food source before an adequate root system is developed. The plant needs time to store excess energy in the roots to feed young stems during early stages of regrowth.

Young plants will take a long time to recover from a premature cutting. This lowers yields and may result in poor stands, especially if there is a weed problem in the field.

WEED CONTROL IN ALFALFA

Excessive weeds in young alfalfa often result in poor stands. Weeds also reduce the value of alfalfa hay and rob plants of the necessary water, plant nutrients and light which are essential for top hay production.

Weeds in second year or older alfalfa hay are generally the result of poor stands rather than the cause.

With the proper use of herbicides weed control in alfalfa hay fields can usually be achieved. For the most effective and economical use of herbicides, a grower should be able to anticipate the type of weeds that will infest a new field before planting.

GRASS

If the weeds are primarily annual grasses EPTC (Eptam) will give effective control for approximately 6 weeks after application.

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Co-operative Extension Work in Agriculture and Home Economics, U.S. Department of Agriculture, University of California, and Fresno County Co-operating

It may be applied pre-plant (at the rate of 3-4 lbs. active material per acre). It is Federally registered for application in the irrigation water (at 2-3 lbs. active material per acre).

In pre-plant applications the material should be incorporated into the soil immediately after it is applied.

Applied in the winter months, it will not control watergrass or other weeds germinating late spring or summer. It gives good control on mineral soils but is not effective on light sandy soils.

For control of annual grasses in older stands of alfalfa (1 yr. or older) Diuron is registered for use on alfalfa hay. The recommended rates of application range from $1\frac{1}{2}$ lbs. per acre on lighter soils to 2.4 lbs. per acre on the heavier soils.

Do not use it on light, sandy soils or areas of poor drainage. Diuron must be put on when the crop is in the dormant or semi-dormant stage of growth (December or January) and should not be applied to non-dormant varieties.

It should be applied only to fields with 1 year or older stands that will not be taken out within 1 year of treatment. Treated plant parts should not be grazed nor fed to livestock until after first cutting.

BROADLEAVED WEEDS

Broadleaved weeds can be controlled by the use of 2,4-DB ester (Butoxons ester or Butyric ester). This material should be applied at the rate of $\frac{1}{2}$ - $\frac{3}{4}$ lbs. per acre when the weeds are in the 1-3 leaf stage.

Shepherds purse, fiddleneck and knotweed become more tolerant to the herbicide as they get older.

It was observed in trials conducted during 1962-63, that the addition of a wetting agent, 6 oz. per 100 gals., improved the effectiveness of 2,4-DB ester

in controlling knotweed, fiddleneck and Basia. Pineapple weed was not controlled with 2,4-DB ester.

Rates of $\frac{3}{4}$ to 1 lb. per acre will retard the rate of growth of alfalfa, but this retardation is temporary.

The amine formulation of 2,4-DB is also registered on alfalfa hay. Extensive field trials show the amine to be much less effective than the ester formulation. When the amine is used it is recommended at 1 lb. of active material per acre.

Do not graze nor feed treated plant parts to livestock within 30 days of the application of 2,4-DB.

RESULTS OF ALFALFA VARIETY TRIALS

A large-scale alfalfa variety trial was started in the spring of 1963 on the J. G. Boswell Ranch at Corcoran in Kings County. This trial is a cooperative project between Bill Sallee and O. D. McCutcheon, Farm Advisors in Tulare and Kings Counties.

Yield data has been taken for two years along with readings for resistance to the spotted alfalfa aphid, green pea aphid and Downey Mildew.

Stand counts have also been taken over the past two years as an estimate of longevity of stand.

The varieties that were tested and the yield in tons of dry hay per acre for the first and second year, along with a two-year total is shown on the following page.

Variety	Yield in Tons Dry Hay Per Acre			
	1st Year	2nd Year	Total of Both Years	Yield % of Moapa-1963-64
Sonora	6.53	10.85	17.38	105.8
Mission 63	6.75	10.55	17.30	105.3
WL-501	6.82	10.19	17.01	103.6
Germain's Eldorado	6.07	10.52	16.59	101.0
Zia	7.32	9.14	16.46	100.2
Joaquin 11	6.15	10.29	16.44	100.1
Moapa	6.57	9.85	16.42	100
Lahontan	7.16	9.25	16.41	99.9
Nev. Syn T	6.63	9.60	16.23	98.8
Aphidor	6.39	9.82	16.21	98.7
Resistador	5.75	9.88	15.63	95.2
AS-13	5.77	9.85	15.62	95.1
Cody	5.55	8.58	14.13	86.1

There were no significant differences in yield between varieties for the two-year period. However, an analysis of second year data showed that Sonora gave significantly higher yields than Zia, Lahontan, Nev. Syn T, and Cody.

Germain's Eldorado and Mission 63 yielded significantly better than Lahontan, Zia and Cody. Joaquin 11 was significantly better than Zia and Cody while WL 501 yielded significantly better than Cody.

All varieties in the trial had high resistance to the spotted alfalfa aphid except Resistador and Caliverde. Resistador showed more resistance than Caliverde but was much less resistant than other varieties in the trial.

The only variety showing resistance to the pea aphid was Nev. Syn T. Waterman Loomis Variety WL 501 was moderately tolerant.

Sonora, Mission 63 and Joaquin 11 were slightly tolerant, whereas all other varieties were susceptible with Zia, Cody and Caliverde being highly susceptible to the green pea aphid.

Resistador was the most tolerant variety to Downey Mildew, while Joaquin 11, Moapa, Sonora, Zia, AS-13 and Germain's Eldorado were the most susceptible varieties. All other varieties were listed as moderately tolerant to Downey Mildew.

Stand counts taken in this trial revealed that all varieties have a good stand of plants going into the third year and should give maximum yields.

In comparing varieties for length of growing season they were grouped as follows.

Also listed below is the seed company which released the proprietary varieties included in this trial. All other varieties are USDA and State Experiment Station releases.

<u>Seed Company</u>	<u>Variety</u>	<u>Category of Growth</u>
	Sonora	Full seasonal growth
H. W. Walcott Co.	Mission 63)	
Waterman Loomis	WL 501)	
Northrup King	Aphidor)	Long seasonal growth
	Moapa)	
Security Seed	Joaquin 11)	
Germain's	Germain's Eldorado)	
Ferry Morse	AS-13)	Medium seasonal growth
	Caliverde)	
Northrup King	Resistador)	
	Zia)	
	Lahontan)	Short seasonal growth
	Nev. Syn T)	
	Cody)	

The varieties which have a longer growing season are particularly suited to growers who green chop or sheep off the first and last cuttings during the season.

Hay cut in the spring and fall dries slowly and many times is damaged by late or early rains.

Sincerely,

E. J. Gregory

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