

Eptam 10% Granules vs. Eptam 7EC Water Run As a Preplant Treatment in Alfalfa

*Barry R. Tickes, Extension Agent, Agriculture, Yuma County
Stanley Heathman, Weeds Specialist, U of A, Tucson, AZ*

Abstract

A test was conducted to compare EPTC applied preplant to alfalfa as a 10% granule and as a emulsifiable concentrate metered into the irrigation water. Observations and measurements on weed control and phytotoxicity were recorded. EPTC appeared to be more active in controlling weeds and injuring seedling alfalfa when applied to 3.0 lb./acre as a granule rather than the same rate applied as a water run.

Introduction

Eptam 10% granules are registered in Arizona as a preplant treatment for many broadleaf and grass weeds in alfalfa. The emulsifiable concentrate formulation of this herbicide has been used for many years both preplant and in established alfalfa. The granular formulations is currently registered only preplant. Registration as a pre-emergence treatment in established alfalfa is expected in the near future.

The 7EC formulation of Eptam is commonly applied in the irrigation water. There may be some advantages to the granular formulation applied to the soil just prior to and incorporated with the irrigation.

The application efficiency of Eptam applied in the irrigation water is limited to the uniformity of the irrigation and the loss of the herbicide in the vapor phase. A test was conducted by USDA scientists in Brawley, California to measure the loss of Eptam from water and wet soil during the after flood irrigation of an alfalfa field. Results indicated that 80.6 percent of the Eptam applied volatilized during the 52 hour period of observation. A breakdown of this loss was: 45.2% - volatilized from wet soil, 28.4% - volatilized from water, 7% - runoff in the tailwater.

Eptam granules applied just prior to the irrigation may help overcome this problem. Another advantage is that granules can be confined to localized areas in the field where weed infestations are known to occur.

Materials and Methods

A test was conducted to compare alfalfa preplant water run applications of Eptam 7EC with Eptam 10G applied just prior to irrigation. Observations and measurements on weed control and phytotoxicity were recorded.

The test was conducted at the Yuma Mesa Agriculture Center in the Yuma Valley on silty clay loam soil. Plot size was 33 x 250 feet for the granule treatments and 120 x 250 feet for the water run treatments. Treatments included 2, 3, and 4 pounds active ingredient per acre of the Eptam granules and 3 pounds active ingredient per acre of the 7EC water run with three replications of each treatment. The herbicides

were applied in the germination irrigation on 9-28-89. Visual evaluations of control and phytotoxicity were made on 12-27-89. The first harvest was made on 12-27 and the second on 3-10. Harvested plot size was 1/10,000 acre. Stand counts were made on 10-23-89.

Results

Stand counts made 26 days after treatment revealed a reduction in stand as a result of the 3 and 4 pound ai/acre applications of Eptam 10G. Visual evaluations made 90 days after treatment indicated that phytotoxicity was still evident at these rates. A reduction in alfalfa forage production in the first harvest occurred as a result of the 3 and 4 lb. rates of the 10G formulation. Alfalfa yield differences as a result of the herbicide treatments were not apparent at the second harvest. Some yield reduction was measured in the weedier treatments (untreated, 2 lbs. of the 10G and 3 lbs. water run), perhaps as a result of competition from the weeds. Eptam appeared to be more active in controlling weeds and injuring seedling alfalfa when applied at 3.0 lb./Acre as a granule rather than the same rate applied as a water run.

The weeds present in this test were mainly volunteer wheat and malva. Control of wheat was excellent from all treatments. Control of malva was partial with the best control (approximately 70 percent) at the 3 and 4 lb. rates of the 10G formulation.

Treatment	Rate (Lbs. ai/Acre)	Stand Count (Seedling/Ft.2)	Weed Control (Visual-Percent)		Phytotoxicity (Visual-Percent)	Yield - 1st Cutting (lbs./Acre)			Yield - 2nd Cutting (lbs./Acre)		
			Volunteer Grain	Malva		Alfalfa	Weeds	Total	Alfalfa	Weeds	Total
Untreated	--	27.5	0	0	0	1828	485	2313	2315	551	2866
EPTAM 7E (water run)	3	20.0	98	57	2	1674	37	1711	2267	181	2448
EPTAM 10G	2	20.6	98	66	4	1870	77	1947	2267	229	2496
EPTAM 10G	3	13.6	99	72	17	1344	1	1345	2921	46	2967
EPTAM 10G	4	11.7	99	70	32	1189	7	1196	2689	66	2755