

# Oxyfluorfen (Goal) for Selective Control of Little Malva in Seedling Alfalfa

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## ABSTRACT

*Little Malva (Malva parviflora L.) is an important weed that is resistant to herbicides that will selectively control most other broadleaf weeds in alfalfa. Oxyfluorfen (Goal) has been placed under an Experimental Use Permit for alfalfa. In 1987, this herbicide was evaluated for the selective control of malva in alfalfa in the Avra Valley west of Tucson. Oxyfluorfen stunted both the malva and the alfalfa. However, the alfalfa was stunted to a lesser degree, and had begun to recover three weeks after the application of oxyfluorfen. The malva did not recover, and the alfalfa was relieved from weed competition three weeks after treatment.*

## INTRODUCTION

Many broadleaf weeds in seedling alfalfa can be controlled with applications of 2,4-DB (Butoxone, Butylate 200). Susceptible broadleaf weeds convert the 2,4-DB, a non-herbicide, into a lethal dose of 2,4-D. Legumes do not make this conversion, hence the selectiveness of 2,4-DB for weeds in alfalfa. Unfortunately 2,4-DB is not effective on malva.

In February 1987, Carl and Pat Early of the Avra Valley asked for assistance in controlling malva in their alfalfa. The alfalfa had been seeded in October 1986. This followed two previous year's attempts at establishing alfalfa in the field, both of which failed due to the malva infestation.

A field trial was conducted in Early's alfalfa to evaluate the selectiveness of oxyfluorfen for malva in seedling alfalfa.

## MATERIALS AND METHODS

Oxyfluorfen was applied to the alfalfa on February 18 at rates of 0.25 and 0.5 ai/A in 30 gallons of water per acre with a hand boom. The soil was an Anway silty clay loam. The alfalfa had 5 to 8 trifoliolate leaves, and was a poor stand. The more numerous malva plants ranged from seedlings to 8 inch tall weeds. The alfalfa was beginning to stress for lack of moisture.

The Experimental Use Permit label for oxyfluorfen states that it will burn, crinkle, and bronze the alfalfa to some extent.

The herbicide treatments were evaluated for percent stunting of both the malva and of the alfalfa as compared to untreated check plots. These evaluations were made 12 days after treatment and again 21 days after treatment.

Plots were 30 feet wide by 40 feet long, replicated 4 times in a randomized complete block design.

## RESULTS AND DISCUSSION

In the evaluation 12 days after treatment, both the 0.25 and 0.5 ai/A treatments of oxyfluorfen had significantly stunted the malva (Table 1). Both treatments had also significantly stunted the alfalfa, but the damage was only a third as much as was done to the weeds. Stunting of both the alfalfa and the malva was significantly greater with the higher rate of oxyfluorfen.

In the evaluation 21 days after treatment, significant stunting of both the malva and the alfalfa were still apparent with both rates of oxyfluorfen (Table 2). However, no significant differences were observed between the herbicide rates. Most of the malva weeds were still alive but were not recovering from the oxyfluorfen. The alfalfa was recovering and no longer suffered from weed competition.

Table 1. Response of Malva and Alfalfa to Oxyfluorfen 12 Days After Treatment.

Treatment	Malva % stunt	Alfalfa % stunt
Oxyfluorfen 0.5 ai/A	86 a*	31 a*
Oxyfluorfen 0.25 ai/A	75 b	28 b
Untreated	0 c	0 c
% C.V.	8.06	11.26

\*Means followed by the same letter within a column do not differ significantly at the 0.05 level.

Table 2. Response of Malva and Alfalfa to Oxyfluorfen 21 Days After Treatment.

Treatment	Malva % stunt	Alfalfa % stunt
Oxyfluorfen 0.5 ai/A	90 a*	25 a*
Oxyfluorfen 0.25 ai/A	84 a	16 a
Untreated	0 b	0 b
% C.V.	9.44	71.45