

CASE STUDY

Alligare Payload® Winter Weed Control In Dry Irrigation Canals



Madera County, approximately
10 feet from vineyard.

100 (DAT) days after treatment.
Payload 12 oz. + Glyphosate 32 oz.
at a rate of 50 gallons / acre.

Background:

Every spring, irrigation districts have to contend with weeds that germinate and grow tall in dewatered canals during winter. Northern California is one such region where districts stop water flow during winter months, and temperatures are still mild enough to permit invasive weed growth in their unlined canals. These weeds can slow or stop water movement once canals are charged in early spring, affecting part or all of a district's water delivery system.

Until recently, only a few herbicides were labeled for dewatered canal applications. None successfully addressed the need for a broad spectrum herbicide that has a favorable environmental toxicology profile with minimal personal protective equipment (PPE) requirements. Two separate studies demonstrate that Payload® (active ingredient is flumioxazin) successfully meets these requirements.

Monitoring Methods:

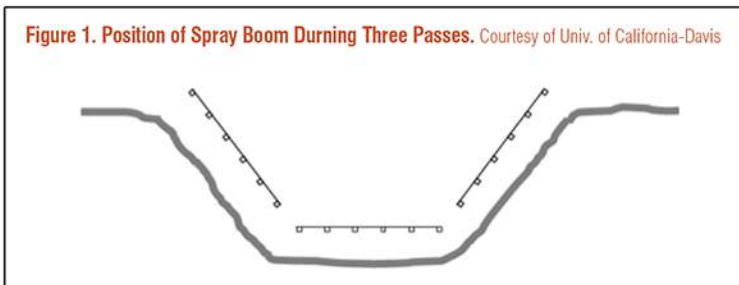
Both studies were conducted in Northern California, where the main culprits are Italian rye, Veronica, Russian thistle, and many other problematic weeds for irrigation ditches.

The University of California-Davis, in partnership with Solano Irrigation District (SID), tested Payload's efficacy in 2014-2015 by applying it at two different rates in a dry canal in November 2014 – 8 oz./acre and 12 oz./acre. The trial also compared flumioxazin treatments with untreated plots, and with proflaminate, an herbicide previously used by SID. A fourth treatment combined Payload and proflaminate. (Table 1). A total of 24 plots were tested. Each plot was treated in 3 passes of 10-ft swaths, one pass for each bank and one for the bottom of the canal (Fig. 1).

Table 1. Treatment and Rate List – Solano Irrigation District

Active Ingredient	Product	Product Rate (oz./acre)
Flumioxazin	Payload	8 oz.
Flumioxazin	Payload	12 oz.
Proflaminate	Promiadin 65	16 oz.
Proflaminate	Promiadin 65	36 oz.
Flumioxazin + Proflaminate	Payload + Promiadin 65	8 + 16 oz.

Figure 1. Position of Spray Boom During Three Passes. Courtesy of Univ. of California-Davis



During this same time period, another field trial was underway – at the Madera Irrigation District (MID). This study involved personnel from MID as well as Alligare, the marketer of Payload. The trial was repeated in 2015-16.

In mid-November 2014, Payload was applied in a MID dewatered canal at 12 oz./acre. The following November, Payload was applied at 12 oz./acre plus Glyphosate at 32 oz./acre.



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Results:

For the SID study, lead researcher Guy Kyser of UC-Davis writes that in the final evaluation, conducted shortly before charging the canal, “plots treated with Payload had less than 0.5% total weed cover, including both grasses and broadleaves. By contrast, plots treated with only Prodiamine 65 had approximately 20% weed cover, mostly Italian ryegrass, and untreated plots had a mean of >30% cover.”

In summary, he says, “applications of Payload, even at the lower rate tested, provided between 3 and 4 months of residual weed control at a level which irrigation district representatives found acceptable.”

Table 2. Results – Solano Irrigation District

Product	% Weed Cover	Weed Type
Payload	<0.5%	Grasses, Broadleaf
Prodiamine 65	Up to 20%	Mostly Italian Rye Grasses
Untreated	>30%	Grasses, Broadleaf

Untreated Canal



Canal Treated with Payload (12oz./acre)



Summary:

The SID and MID studies both demonstrate that Payload is extremely effective against a broad spectrum of annual grass and broadleaf weeds. Payload offers the additional benefits of being a low-risk product that is exceptionally broad-spectrum. Payload received Section 24(c) Special Local Need Registration for California in 2015.

Flumioxazin is currently registered in California for bare ground, aquatic, ornamental, and many permanent and annual crops. Payload can be sprayed in canals and their banks. It's also crop safe on many sensitive sites. For example, in California, high-value vineyards only a few feet from the treated canals were unaffected.

Alligare recommends applying Payload in the fall after canals have been dewatered but before weeds have germinated. If weeds have already emerged, Alligare recommends a tank mix with an aquatic glyphosate.

**To learn more about Alligare Payload,
call (888) 255-4427 or visit alligare.com today!**

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