

## **Carrot Nutsedge Weed Control Studies 2009**

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**Summary:** This trial was conducted to evaluate applications of Dual Magnum and Outlook as an over-the-top application to carrots to control yellow nutsedge (YNS). The timing of these applications coincides with the standard timing of the second Lorox application which is applied when carrot are at the 3-4 true leaf stage. The goal of this combination of treatments is that the Lorox would burn the yellow nutsedge back and the Dual Magnum and Outlook would inhibit this weed from resprouting. This type of system is used in onions where yellow nutsedge is burned back with acid based fertilizers and Outlook is applied; this has proven to be a successful treatment combination and allowed successful onion production in fields infested with yellow nutsedge. In this trial both Dual Magnum and Outlook applications in combination with Lorox successfully reduced yellow nutsedge infestation. Dual Magnum appeared to be safer than Outlook as evidenced by phytotoxicity ratings made 42 days after treatment. Low rates of Dual Magnum had lower phytotoxicity ratings and still provided good suppression of yellow nutsedge. In a mid-growth biomass evaluation made 42 days after treatment all treatments had lower root weight than the untreated control. These results look promising enough that further evaluations of this technique are warranted with the modification that the applications be made as directed sprays to reduce foliar phytotoxicity.

**Methods:** Trial was conducted in cooperation with Wyatt Duncan in San Lucas at a site with a high population of yellow nutsedge. The materials used in this trial (Dual Magnum and Outlook) were intended to provide a layer of herbicide that would inhibit the emergence of yellow nutsedge. Dual Magnum and Outlook were applied post plant (approximately 3-4 true leaf stage) on July 30. The applications were timed to coincide with the post emergence application of Lorox which was capable of burning back yellow nutsedge but not capable of inhibiting subsequent reemergence of this weed. Lorox was applied on July 31 with a commercial application rig and the site was watered on August 1. A good stand of nutsedge was uniformly distributed in each plot. Each plot was 15 feet long by one 40-inch bed wide and randomized in a complete block design with three replications. Dual Magnum and Outlook treatments were applied with 2 passes of a one tip wand with an 8008E nozzle at 30 psi applying the equivalent of 68 GPA. Yellow nutsedge infestation and phytotoxicity were evaluated by a 0-10 rating scale (see Table 1). A mid-growth biomass evaluation was conducted in which 3 feet of row were harvested and the plants evaluated for root and foliage growth, as well as stand. The soil type at the site was Rincon clay loam (pH 7.6; organic matter 0.63; sand 38, silt 42 and clay 20%).

**Results:** Both rates of Outlook and Dual Magnum at 1.33 and 1.67 pint/A had the best weed control on the first evaluation date on August 19(20 days after treatment - DAT); however, these four treatments also had the highest phytotoxicity ratings (Table 1). Phytotoxicity consisted of burning back and necrosis of leaf tissue (see photos below). On the second evaluation date on September 10 (42 DAT), All treatments provided good weed control. Both rates of Outlook had greater phytotoxicity than all Dual Magnum treatments. Mid-growth biomass evaluations on September 10 indicated that all

treatments had smaller roots than the untreated control. In the treated plants a higher percentage of the plant was dedicated to foliage than to roots than the untreated. There were no statistically detected differences in the number of plants or total root tonnage per acre.



Phytotoxicity on carrot foliage 7 days after treatment

Photos of levels of weed infestations in various treatments



1.0 pt/A D. Magnum  
20 DAT



1.7 pt/A D. Magnum  
20 DAT



14.0 oz Outlook  
20 DAT



Untreated  
20 DAT



1.0 pt/A D. Magnum  
42 DAT  
YNS from under carrots



1.7 pt D. Mangum  
42 DAT  
YNS from under carrots



14.0 oz Outlook  
42 DAT  
YNS from under carrots



Untreated  
42 DAT  
YNS from under carrots

Table 1. Weed, phytotoxicity ratings and yield evaluations

Treatments	Material/A	August 19		September 10							
		Weed Rate <sup>1</sup>	Phyto <sup>2</sup>	Weed Rate <sup>1</sup>	Phyto <sup>2</sup>	Whole Plant wt (grams)	Root wt (grams)	% Root	% Foliage	Plants/A	Root ton/A
Dual Magnum	0.67 pint	3.7	1.0	8.3	0.0	25.1	9.5	37.4	62.6	527,419	5.1
Dual Magnum	1.00 pint	4.3	1.3	9.0	0.0	23.1	8.3	36.0	64.0	389,587	3.5
Dual Magnum	1.33 pint	6.3	2.0	9.2	0.3	22.1	8.2	36.8	63.2	466,693	4.1
Dual Magnum	1.67 pint	7.7	2.7	9.2	0.7	25.7	10.5	40.4	59.6	464,388	5.0
Outlook	7.0 ounces	7.7	2.7	9.0	3.0	20.4	6.8	33.2	66.8	525,401	4.1
Outlook	14.0 ounces	7.7	3.3	8.8	4.7	20.6	7.8	37.8	62.2	509,593	4.4
Untreated	----	0.0	0.0	0.0	0.0	33.9	15.6	45.7	54.3	336,832	5.6
Pr>Treat		0.002	<0.001	<0.001	<0.001	0.057	0.016	0.002	0.002	0.385	0.315
Pr>Block		0.167	0.054	0.535	0.088	0.809	0.876	0.878	0.878	0.018	0.047
LSD <sub>0.05</sub>		3.4	1.0	0.7	1.6	NS	4.4	4.7	4.7	NS	NS

1 – Weed rating scale: 0 = no weed control to 10 = complete weed control; 2 – phytotoxicity scale: 0 = no crop damage to 10 crop dead.