

Control of Nutsedge (*Carex sp.*) in Highbush Blueberries (*Vaccinium corymbosum*)

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Introduction

Highbush blueberries are a relatively new crop in San Joaquin County. They are grown in raised beds covered with a thick layer of organic mulch or, more recently, with synthetic cloths. Mulch helps retain moisture and moderate soil temperatures. The mulch is necessary as blueberries are shallow-rooted and, therefore; sensitive to fluctuating moisture and temperature. Unfortunately, the shallow-rooted nature of the plant makes it difficult to control perennial weeds such as nutsedge. In established plantings, cultivation needs to be restricted to the upper 2 – 4 inches of soil between beds. In any age planting, the mulch on the berms is not cultivated. These practices may not provide deep enough cultivation to impact the perennial root system of nutsedge. Although mulch is necessary for the reasons stated above, we thought that the high organic content of the mulch might be problematic with the use of pre-emergent herbicides. Herbicides that readily bind to organic matter would be rendered useless for weed control in an organic mulch environment. A limited pre-emergent trial and a more extensive post-emergent trial were executed in 2006 to explore nutsedge control in blueberries.

Materials and Methods

Pre-emergent: Two chemicals, Dual II Magnum 7.64 EC (S-metolachlor 82.4% at 1.4# ai/acre) and Outlook EC (Dimethenamid 63.9% at 1# ai/acre), were applied in March of 2006 on Star, Santa Fe and Blue Crisp varieties of highbush blueberries.

Post-emergent: Five compounds, two registered materials, Roundup Weathermax 6SL (glyphosate at 2.75# ai/acre), and Shark 40 EW (carfentrazone at 0.03# ai/acre); and three unregistered materials, Permit 75% DF (halosulfuron at 0.062# ai/acre), Rely (glufosinate at 1.0# ai/acre), and V10142 75 WDG (imazsulfuron at 0.5# ai/acre) were applied in May of 2006 on Star, Santa Fe and Blue Crisp varieties of highbush blueberries. Carrier rate was 25 gpa and 0.2% NIS was added to all tank mixes. One application of all chemicals was made at the 3 – 4 leaf stage. Data was taken at 14, 21, 32 and 60 DAT. Ratings were made on a percent control basis. Percent control was based on partial and total necrosis.

Results and Discussion

Pre-emergent: Poor weed establishment prevented us from being able to perform an analytical analysis of the weed control provided by these chemicals, but no phytotoxicity was noted in any variety of blueberry.

Post-emergent: The results of the efficacy tests showed Permit to be a consistently better performer at both sites than any of the other materials tested (figures 1 and 2). Control remained around 50% out to 60 DAT. There were marked differences in the performance of the other herbicides at each site. Rely controlled nutsedge well, out to 32 days, at site two, but not at site one. This may have been due to differing watering regimes. Site 1 was drip irrigated and had a heavy layer of fine wood mulch. Site 2 utilized overhead sprinklers, and the mulch was coarser and not as thick. Since nutsedge is a perennial plant the method of estimating percent control was chosen to reflect that the infestation was not eliminated, but curtailed for a period of time. All nutsedge populations eventually recovered to the level of the untreated controls. Multiple applications or combinations of herbicides may be needed to obtain more permanent control.

Figure 1. Post-emergent control of nutsedge in blueberries – Site 1

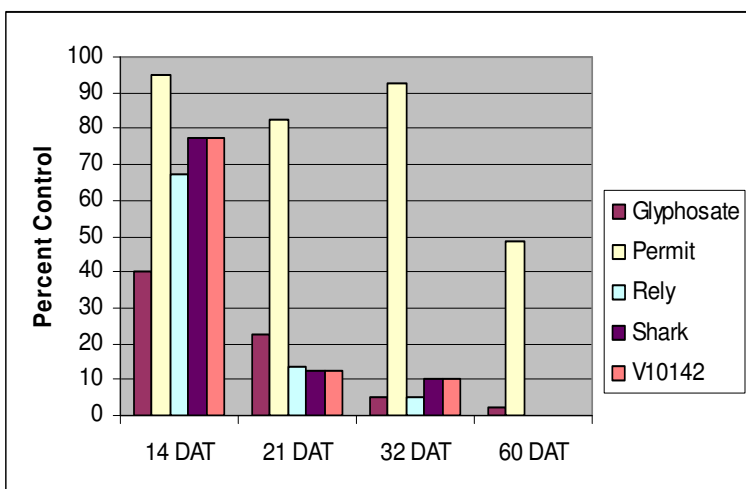


Figure 2. Post-emergent control of nutsedge in blueberries – Site 2

