

Strawberry Tolerance to Spartan FL 4F

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Summary

Spartan FL 4F (a.i. sulfentrazone) was applied under the plastic mulch prior to strawberry transplanting at 3 to 24 oz/acre. No significant crop injury, no yield reduction and no delay in harvest was observed at any application rate. Sulfentrazone did not control or suppress purple nutsedge. Additional trials are needed to determine Spartan efficacy on broadleaf and grass species.

Background

Spartan FL 4F is a preemergence herbicide recently registered for use in strawberry. It can be applied in row middles or under the plastic mulch at 4 oz/acre. It should not be used on soils with less than 1% organic matter. Spartan is of interest because it has activity on yellow nutsedge. Unfortunately, it does not adequately suppress purple nutsedge but trials are on-going to find ways to improve efficacy. It also controls a wide range of grasses and broadleaf weeds. Do not apply Spartan on beds where onions will be grown along field edges.

Methods

An experiment was initiated in August of 2017 at Balm FL to determine the efficacy of sulfentrazone applied pre-emergence under the plastic mulch in Florida strawberry production. The experimental design was a randomized complete block with six Spartan rates and four blocks.

Bed formation and fumigation occurred on August 15, 2017. Beds were formed to be 12 in high, and 26 in wide on the bed top, with 4 ft centers

between beds. Beds were fumigated with Telone® C-35 (300 lbs acre⁻¹, Dow AgroSciences LLC, Zionsville IN) using a standard fumigation rig (Kennco Manufacturing, Ruskin, FL) equipped with two shanks which evenly distributed fumigant at the base of the bed. Beds were covered with virtually impermeable film (Berry Plastics, Evansville IN) immediately following fumigation. Drip tape was laid in the bed with a diameter of 5/8 in, emitters every 12 in and a flow rate of 0.22 gallons per hour (Eurodrip USA Inc., Madera CA). Soil type was Myakka fine sand (sandy, siliceous, hyperthermic, Aeric, Alaquods) with 1.5% organic matter, pH of 6.5, and sand, silt, clay content of 96, 3, and 1%, respectively. Strawberry plants 'Radiance' were transplanted at a spacing of 38 cm in two rows per bed on October 10, 2017. Strawberries were irrigated, fertilized and managed for foliar pests according to industry standards for Florida production. Row middles were maintained by using industry standard treatments.

Herbicides were applied at the time of bed formation and laying of the plastic mulch. The application volume was 20 GPA applied at 35 PSI. Response variables included strawberry damage rating, strawberry yield, and nutsedge counts. Strawberry damage ratings occurred at November 6, 2017, November 15, 2017, and December 6, 2017. Strawberry fruit yield was collected bi-weekly starting on December 11, 2017 to February 22, 2018. Nutsedge densities were counted on December 6, 2017.

Results

No Spartan injury was observed at any of the application rates at any point during the season. There was no affect of herbicide treatment on total yield ($p=0.7100$) nor was harvest delayed in the first ($p=0.1342$) or second ($p=0.5073$) week of harvest. Nutsedge density was not affected by herbicide treatment ($p=0.5154$). We conclude that Spartan FL 4F is very safe on strawberry when applied beneath the plastic mulch but it did not adequately control purple nutsedge.

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