

IGNITE AND LIBERTYLINK COTTON FOR THE CALIFORNIA PRODUCTION SYSTEM

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Herbicide tolerant cotton varieties provide growers a weed management option that can reduce weed control costs and provide effective management of hard-to-control weeds such as nutsedge, field bindweed and annual morningglory. Herbicide tolerant varieties have also allowed growers to explore alternative production systems such as conservation tillage. Environmental benefits have included reduction of dust into the air due to reductions of cultivation. Planting of herbicide tolerant crops is an accepted practice to reduce PM10 emissions in growers "Conservation Management Plans" required by the San Joaquin Valley Unified Air Pollution Control District. Although Roundup Ready cotton varieties comprise 40 percent of the Acala and Upland acreage, the evaluation and integration of LibertyLink cotton into the California cotton production system will provide growers with an additional control option and herbicide resistant management tool. Field studies were conducted from 2002 to 2004 to evaluate weed control efficacy and tolerance of both LibertyLink and non LibertyLink cotton to Ignite (glufosinate). Ignite was applied over-the-top of LibertyLink FM 966L cotton in the 4 to 5-leaf stage when pigweed (*amaranthus* spp) and black nightshade (*Solanum nigrum*) were in the 2 to 8-leaf stage. Control was excellent when weeds were 4 true leaves or less with control being poor when weeds were 5 true leaves or greater. When Ignite was tank mixed with either Staple (pyrithiobac sodium) or MSMA the 5 true leaf weeds were effectively controlled. There were no differences in control regardless of whether Ignited followed a PPI application of Treflan (triflurin) or not. No injury was observed on the cotton with Ignite alone, although some injury was noted when tank mixed with Staple, MSMA or Dual Magnum (metolachlor). Ignite applied post directed to non LibertyLink cotton exhibited mild injury to the lower stem and leaves contacted by the spray solution. Seed cotton yields of Ignite alone were significantly greater than the untreated control. When tank mixed with Staple, MSMA or Dual Magnum yields tended to be lower. Seed cotton yields of post directed Ignite on non LibertyLink cotton were lower, but not significantly lower, than the untreated control.