INTRODUCTION

Isoxadifen is a corn safener that was originally developed by Bayer CropScience. When applied in combination with certain postemergence herbicides, isoxadifen increases crop selectivity by enhancing metabolic degradation. Isoxadifen is a component of several corn herbicides such as Laudis, Option, and Status. DuPont recently released a “Q” line of herbicides that also contain isoxadifen (Resolve Q and Steadfast Q). Historically, the use of sulfonyleurea herbicides in corn has been prohibited in fields that were treated with an OP soil insecticide such as Counter. Therefore, the objective of this research was to determine if the new “Q” formulations of sulfonyleurea herbicides could be used in field corn treated with Counter.

MATERIALS AND METHODS

A small plot field trial was conducted in 2010 at the UGA Ponder Research Farm. The experimental design was a randomized complete block with a factorial arrangement of treatments replicated four times. Treatments were all possible combinations of two in-furrow soil insecticide applications (Counter 15G or Counter 15G @ 7 oz/1000 row feet) and four postemergence (POST) herbicides (Resolve Q, Resolve, Steadfast Q, and Steadfast) applied at 1X and 2X rates. The corn hybrid ‘DKC 67-21RR’ was planted on March 25. POST herbicides were applied on April 13 (19 DAP) using a CO₂-pressurized backpack sprayer with 11002DG nozzles calibrated to deliver 15 GPA. The entire plot area was maintained weed-free using a combination of mechanical cultivation, hand-weeding, and a timely POST application of Roundup WeatherMax + Atrazine + Prowl H₂O. All data were subjected to ANOVA and means separated using Fischer’s Protected LSD Test at P = 0.10.

RESULTS AND DISCUSSION

1) Corn injury was greater when any herbicide was applied following an in-furrow soil application of Counter (Figures 1, 2, and 3).

2) When applied at 1X rates following Counter, the “Q” formulations caused 21-27% less crop injury when compared to the non-safened formulations.

3) When applied at 2X rates following Counter, the “Q” formulations caused 30-37% less crop injury when compared to the non-safened formulations.

4) Despite causing obvious visible injury symptoms when applied following Counter, the “Q” formulations did not cause significant corn yield losses (Figures 4 and 5). However, non-safened formulations caused a 43-65% yield loss when applied following Counter.