GLYPHOSATE RESISTANT VOLUNTEER CORN CONTROL WITH GLYPHOSATE GRASS HERBICIDE COMBINATIONS.

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As the acres of glyphosate resistant corn increase so does the number of acres of "volunteer" roundup ready corn in the following years glyphosate resistant soybean crop. Obviously this presents a problem since the preferred herbicide of choice is glyphosate resistant soybeans is glyphosate. The best treatment for volunteer corn has typically been one of the ACCase inhibiting grass herbicides. Rather than make two applications across the field producers prefer to apply glyphosate and the grass herbicides together in the same tank. The additive typically used with Glyphosate would be non-ionic surfactant (NIS) while several of the grass herbicides recommend either NIS or Crop Oil Concentrate (COC)

A field study was conducted at 3 locations in Nebraska to evaluate the effect of different additives on the efficacy of glyphosate and grass herbicide on volunteer corn and other weeds. The study was conducted in planted glyphosate resistant corn with natural weed pressure at Clay Center, Lincoln, and North Platte. The treatments included glyphosate herbicides glyphosate potassium salt (Roundup WeatherMax) and glyphosate isopropyl amine salt (Glyphomax) at 0.84 kg ae/ha. The grass herbicides in the study were fluazifop+ fenoxaprop, and clethodim at all 3 locations , and an experimental formulation of clethodim V-10137 was included at Clay Center and Lincoln. These were used at normal rates for 29 to 37 cm tall corn. The additives chosen were 0.25% v/v NIS and crop oil COC at 2.3 l /ha. The treatments included glyphosate - grass herbicide and additive combinations and glyphosate and grass herbicides separately with each additive. The study was evaluated for glyphosate resistant corn control and other weed control at 8-14 and 21-30 DAT.

At all three locations there was no significant difference between treatments when comparing the glyphosate resistant corn control. All treatments provide 90-100% control regardless of glyphosate, grass herbicide or additive. In Lincoln and Clay Center there was no difference in control of other weeds with glyphosate as well with all treatments achieving 93-100% control of amaranthus abutilon or chenopdium spp. At North Platte clethodim and fluazifop+ fenoxaprop provided significantly less kochia control when COC was used in conjunction with glyphosate mixtures. However when the COC was added to the glyphosate products without the grass herbicide there was no reduction in weed control.

As a whole few differences were seen between different glyphosate - grass herbicide - additive mixtures in this study. Whether a glyphosate needs additional surfactant or not does not appear to play a role when controlling volunteer corn. The addition of grass herbicide does not appear to impact the activity of glyphosate. At the same time the addition of glyphosate to the tank mixture does not seem to impact grass herbicides ability to control volunteer corn. Also volunteer corn control was typically the same whether NIS or COC was used as the additive. It appears that the addition of COC will not typically reduce glyphosate activity on other weeds.

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