

Herbicide Options for Volunteer Canola in Enlist Soybeans

The combination of glyphosate and 2,4-D applied in-crop consistently provided effective control of volunteer canola.

ENLIST SOYBEAN VARIETIES are resistant to two modes of action, offering tolerance to glyphosate and 2,4-D herbicides. Group (Gr) 4 herbicides, such as dicamba and 2,4-D, do not always provide adequate volunteer canola control, depending on plant stage at the time of application. Additional tank-mix herbicide partners may be required to manage volunteer canola. This study evaluated tank-mix options for Enlist soybeans.

In 2015, once seed became available, Enlist soybeans were planted in Portage. Glyphosate-resistant volunteer canola was planted at the same time as the crop. The efficacy of herbicide tank-mix partners applied as burndown, pre-emergent (pre) or in-crop (post) treatments were evaluated (Figure 1). Glyphosate was applied in

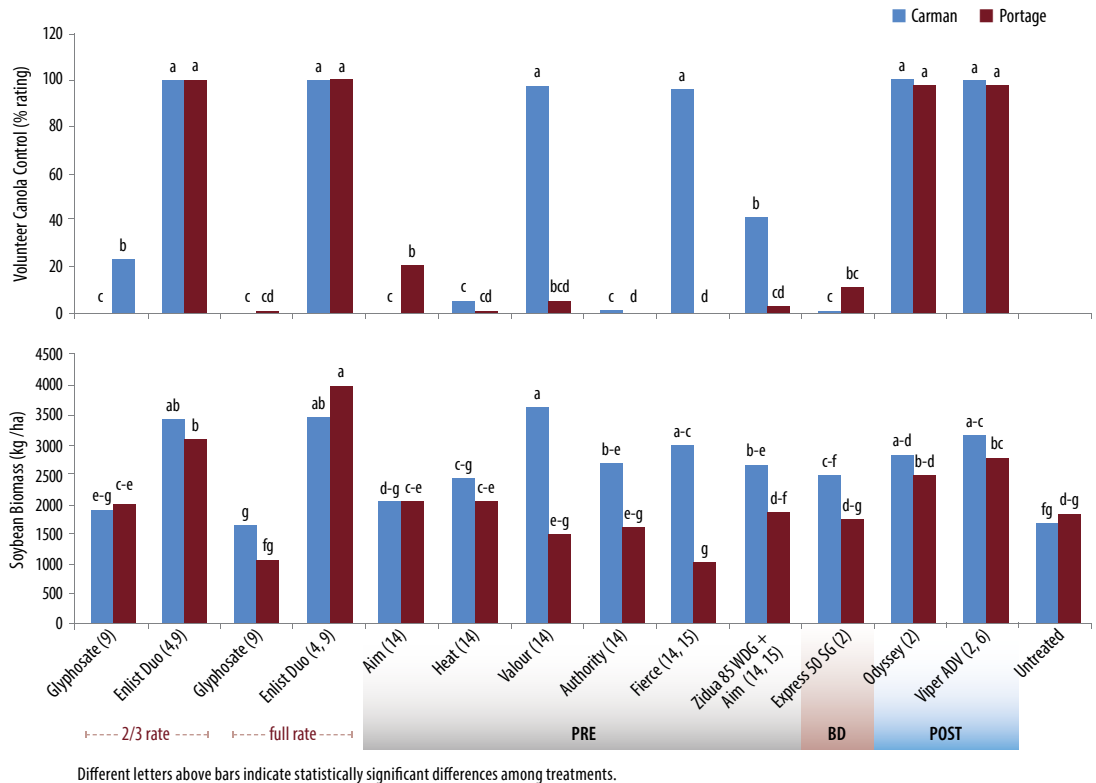
each treatment to reduce weed pressure from species other than volunteer canola. Additionally, glyphosate alone and the combination of glyphosate and 2,4-D (Enlist Duo) were tested at both full and reduced (2/3) rates. As per protocol of the seed suppliers, these experiments were terminated at flowering (R1). Percent volunteer canola control was assessed seven and 28 days after treatment (DAT) and soybean biomass was used as a surrogate for soybean yield.

Pre-applied herbicides alone provided relatively poor control of volunteer canola in Enlist soybean (Figure 1). Enlist Duo (2,4-D and glyphosate) applied in-crop as part of the Enlist system showed high efficacy and consistency on volunteer canola. Post-applied, 2,4-D is known to

have more activity on volunteer canola than dicamba. These treatments also consistently resulted in the greatest soybean biomass at R1. Other effective post treatments included Odyssey (Gr 2) and Viper ADV (Gr 2, 6). Valour (Gr 14) and Fierce (Gr 14, 15) were the only pre-herbicides with good control of volunteer canola, however, only at Carman. Difference in soil characteristics and precipitation following application likely contributed to efficacy differences between sites.

A number of herbicides with various modes of action are effective for in-crop management of volunteer canola in Enlist soybeans. ▽

Figure 1. Enlist soybean biomass after competing with GR volunteer canola and percent control in response to a combination of burndown (BD), pre-emergent (PRE) and post-emergent (POST) herbicides at Carman and Portage in 2015. Herbicide chemistry groups are indicated in brackets.



PRINCIPAL INVESTIGATOR Dr. Rob Gulden, University of Manitoba

MPSG INVESTMENT \$60,000 – five objectives

DURATION 1 year

CO-FUNDERS Growing Forward 2 Growing Innovation: Agri-Food Research and Development Initiative, NSERC, Western Grains Research Foundation, Dow AgroSciences, Monsanto