Optimizing Weed Control by Integrating the Best Herbicide Rate and Bio-Agents in Wheat Field

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Introduction

Biocontrol of weed is described as a selective, environment-friendly process, utilizing host-specific control agents towards targeted weeds that prevent damage to non-target crops. Biological weed control would appear to be the perfect solution for weeds suppression in organic systems.

Material & methods

Experiment was carried out to investigate the weed suppressive activity of biological agents [bioherbicide (3 L ha^{-1}) + biofertilize & GR (1 L ha^{-1}) + biofungicide with anti stress activity to weather conditions and growth regulator activity (1 L ha^{-1})] in combination with reduced rates of new generation herbicide 'Verdict' (0, 0.2, 0.3 and 0.5 kg ha^{-1}).

Results

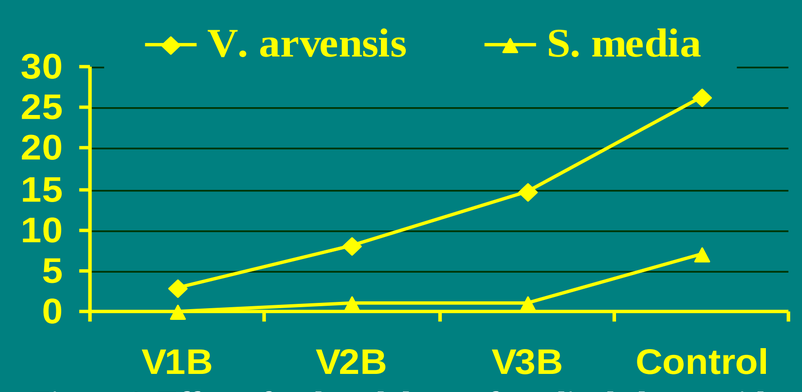

Figure 1. Effect of reduced doses of verdict belongs with biological agents on reducing weeds density (plant /m2).

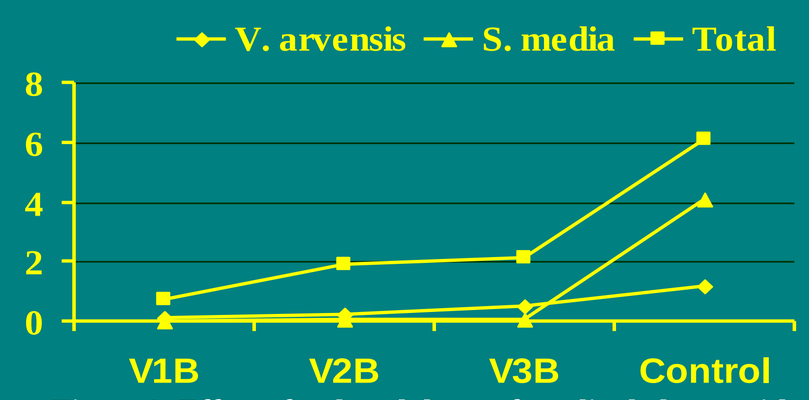

Figure 2. Effect of reduced doses of verdict belongs with biological agents on reducing weeds biomass(g/m2).

Satisfactory control of *viola arvensis* and also *stelaria media* might be obtained with below-labeled herbicide rate as 0.3 kg ha^{-1}, conservation biological weed control should not be investigated as a primary weed control strategy, but should be studied as integrated in other weed control methods.

Treatment	Grain yield t/ ha^{-1}	1000-grain weight	Gluten content%	Plant height cm^{-2}	Stem/m^{-2}	Grains per spike
Verdict 0.5kg ha^{-1} + biological agents	7.30 ab	45.65 a	31.95 a	102.25 a	607 a	36.53 a
Verdict 0.3kg ha^{-1} + biological agents	7.80 a	46.32 a	32.75 a	102.27 a	608 a	32.62 b
Verdict 0.2kg ha^{-1} + biological agents	7.20 ab	44.30 a	31.00 a	97.90 b	570 a	32.65 b
Control ' without application'	6.87 b	43.37 a	27.75 b	96.75 b	571 a	30.85 b

Means in columns followed by the same letter are not significantly different at P = 0.05.

Grain yield and gluten were increased with various rates of verdict + biological agents, verdict applied at 0.5 kg ha^{-1} as its label dose recorded as high productive grains per spike. Verdict applied at 0.5 and 0.3 kg ha^{-1} in combination with biological agents effectively increased plant height.

Acceptable weed control was achieved with labeled-doses of verdict that was comparable to results with intermediate dose.