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2009	234	Herbicide associations for management of glyphosate resistant and tolerant weeds.	R. A. Vidal*,1 H. P. Rainero2; 1UFRGS, Porto Alegre, Brazil, 2INTA, Manfredi, Argentina

The intense use of glyphosate increased the amount of weeds with herbicide tolerance that in Argentina, including the species *Amaranthus hybridus* (smooth pigweed) and *Ipomoea nil* (ivy morningglory). In Brazil, the number of glyphosate resistant biotypes are increasing also, mainly in the species *Euphorbia heterophylla* (wild poinsettia) and *Lolium multiflorum* (ryegrass). The objective of this research was to assess antagonism or synergy of all the possible combinations between two of the following herbicides: glyphosate, imazethapyr, lactofen, and clomazone in the control of the mentioned weeds, prior the onset of resistance. Seedlings of glyphosate susceptible plants were sprayed at the following growth stages: pigweed at 2 cm; morningglory at 7 cm; and the other two species at 10 cm high. The herbicide treatments consisted of: glyphosate at 108 g/ha; imazethapyr at 10 g/ha; clomazone 160 g/ha; and lactofen 30 g/ha, used alone or in all the six possible combination of each two of them. An untreated control was used for comparisons. A non-ionic adjuvant at 0.2% (v/v) was added to all treatments but that with glyphosate alone and the untreated. The effect of the combination of herbicides depended on the species and also of herbicides used. For pigweed and morningglory, antagonism was observed in four of the twelve combinations tested. Neutral effect was found in seven, whereas synergy was observed in only one herbicide mix. For poinsettia and ryegrass, antagonism was observed in five of the twelve combinations tested. Neutral effect was found in seven of the twelve mixtures evaluated. All combinations with neutral or synergistic effect are considered potentially useful to prevent the increase of glyphosate tolerant and resistant weeds.