

Effect of Postemergence Herbicides and Application Time on Small Grain Injury and Yield

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Abstract

Often times both broadleaf and grassy weeds are problematic in cereal production requiring the use of two different herbicides with different application timing. To cut costs, growers are interested in combining applications. However, crop safety with herbicide combinations is a concern, and the appropriate application timing for different herbicides and herbicide combinations was not well tested. Research was conducted in the San Joaquin Valley area of central California to evaluate weed control and crop safety with selected new and standard herbicides applied alone and in combination at two different growth stages (3-5 and 6-8 leaf stage). In general, herbicide treatments with Puma (*Fenoxaprop*), Axial (*Pinoxaden*), or Axial + MCPA had little to no crop injury at any site. The differences in crop injury between tank mixes were minor at one site with the exception that when Axial was used the injury increased. The wheat (*Triticum aestivum*) injury that did occur with some of the tank mixtures typically disappeared after four to five weeks and there was no significant difference in bushel weight, protein, or yield between any of the treatments.

All of the treatments gave excellent control of wild oats (*Avena fatua*) at both timings, except for treatments with only ET (*Pyraflufen*) or Shark (*Carfentrazone*). Simplicity (*Pyroxsulam*) gave fair to good control of wild oats and some broadleaves. All treatments controlled Shepherd's-purse (*Capsella bursa-pastoris*) at both timings, except for treatments with only Puma or Axial. All treatments gave good to excellent control of common chickweed (*Stellaria media*) at both timings, except for treatments with Puma or Axial alone. All of the treatments with Shark, Osprey (*Mesosulfuron*), or Simplicity gave excellent control of coast fiddleneck (*Amsinkia menziesii*). All of the treatments except Puma or Axial alone gave excellent control of burning nettle (*Urtica urens*). The results of this research supported 2012 label change to allow tank mixing of Axial + MCPA.