Evaluation of Permit Herbicide in Proso Millet

A field study was initiated at the High Plains Agricultural Laboratory near Sidney, NE to evaluate the efficacy of Permit herbicide applied PRE and POST in proso millet. Proso millet was no-till seeded into winter wheat stubble on June 14, 2008 at the rate of 15 pounds/acre. Herbicide treatments were applied with an ATV-mounted sprayer set to deliver 12 gallons/acre at 3 miles/hour and 15 psi. The study was located on an Alliance silt loam soil with an organic matter content of 2.9% and a pH of 6.6. The preemergence (PRE) treatment was applied on June 16, 2008. The postemergence (POST) treatments were applied on July 1, 2008 to proso millet that was in the 3- to 5-leaf stage and 3 to 4 inches in height. Weeds present at the time of the POST applications were Russian thistle, kochia and tumble pigweed. The weeds were 2 to 4 inches in height at the time of herbicide application.

No crop injury resulting from the herbicide treatments was observed in this study. Plants were showing significant drought stress, particularly in the third replication, in mid- to late July. Although rain in August helped to relieve this stress, crop yields were not taken from the third replication. Sulfonylurea-resistant kochia and Russian thistle were present at this site. Consequently, treatments containing dicamba (Yukon and Clarity) provided good to excellent control of kochia and Russian thistle while other treatments provided only poor to fair control. Permit by itself, either PRE or POST, did not provide acceptable control of tumble pigweed, but the addition of Unity or Yukon provided good to excellent control. The combination of drought stress and the presence of sulfonylurea-resistant kochia and Russian thistle reduced the efficacy of Permit herbicide in this study.

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Treatment	Rate	Timing	Weed control on July 15			Yield
			Tumble pigweed	Kochia	Russian thistle	
	oz prod/A			%		bu/A
Nontreated check			0	0	0	25.2
Permit	0.67	PRE	50	23	23	27.7
Permit 32-0-0 X-90	0.67 1 % v/v 0.25 % v/v	POST	47	43	43	23.6
Permit Unity 32-0-0 X-90	0.67 0.083 1 % v/v 0.25 % v/v	POST	98	53	75	29.3
Yukon 32-0-0 X-90	4.0 1 % v/v 0.25 % v/v	POST	82	87	92	35.6
Peak Clarity 32-0-0 X-90	0.38 4.o 1 % v/v 0.25 % v/v	POST	88	92	97	37.7
LSD (5%)			22	38	36	23.1