Influence of Preemergence Application of Sharpen on the Growth and Development of Pearl, Proso, and Foxtail Millet at Scottsbluff, Nebraska during the 2009 Growing Season.

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A field study was initiated near Scottsbluff, Nebraska to examine the effect of Sharpen (Kixor) on the growth of pearl, proso, and foxtail millet. The experimental design was a randomized complete block with four replications. The soil at the site was a sandy loam with 1.0% organic matter and a pH of 8.1. Plots were 11 feet wide by 36 feet long. Herbicides were applied to a tilled seedbed on June 22 with a tractor-mounted sprayer calibrated to deliver 20 gallons of spray solution per acre using Spraying Systems 11002 VS nozzles at 32-psi pressure. The air temperature at the time of spraying was 88 F, humidity was 25%, and wind was from the west at 3 mph. Three types of millet; proso 'Earlybird White'; foxtail 'Golden German'; and pearl 'Tifleaf 111 Hybrid' were planted after herbicide application with a TYE grain drill. A 12 ft wide strip of each of the three millets was planted perpendicular to the herbicide treatments.

Millet visual injury was evaluated on July 6, millet crop stand was evaluated on July 10, and millet forage yield was evaluated on September 9. A 3.6 ft wide strip was harvested from the center of each millet plot. A subsample of forage was collected from each type of millet, weighed, dried, and forage yields were expressed at 12% moisture.

Millet types varied in their response to Sharpen (Table 1). A preemergence application of Sharpen at 0.032 lb/acre caused 19% injury to pearl millet, 25% injury to proso millet, and 99% injury to foxtail millet. Increasing the rate of Sharpen from 0.0321 to 0.0892 dramatically increased pearl and proso millet injury. Pearl and proso millet stands were significantly reduced from the nontreated by Sharpen applied at 0.0892 lb/acre while Sharpen applied at 0.0321 lb/acre reduced foxtail millet stand 97%. Forage yield of pearl and proso millet was not reduced when compared to the nontreated by preemergence applications of Sharpen at 0.0321 or 0.0446 lb/acre. Because of early season stand reduction of foxtail millet by Sharpen forage yields were dramatically reduced.

Table 1. Influence of Preemergence Application of Sharpen on the Growth and Development of Pearl, Proso, and Foxtail Millet at Scottsbluff, Nebraska during the 2009 Growing Season.

		Pearl Millet			Proso Millet			Foxtail Millet		
Treatment[1]	Rate	Visual injury[2] 7/6	Stand 7/10	Yield[3] 9/9	Visual injury 7/6	Stand 7/10	Yield 9/9	Visual injury 7/6	Stand 7/10	Yield 9/9
	(lb/acre)	(%)	(plants/9 sq ft)	(tons/acre)	(%)	(plants/9 sq ft)	(tons/acre)	(%)	(plants/9 sq ft)	(tons/acre)
Nontreated	--	0	83	7.2	0	93	5.2	0	109	0.8
Sharpen	0.0321	18.8	70	7.7	25.0	92	4.8	99	3	0.4
Sharpen	0.0446	25.0	75	6.6	26.3	82	4.7	99	2	0.2
Sharpen	0.0892	82.5	15	5.3	82.5	47	4.5	99	0	0
LSD at 0.05	--	11.6	18	1.9	11.9	24	1.6	2	9	0.2

[1]Diffrent millets were planted on June 22 and Sharpen was applied after planting.
[2]Visual millet injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.
[3]Millet yield was calculated at a 12% moisture, at the time of harvest pearl millet contained 73% water, proso millet contained 55% water, and foxtail millet contained 77% moisture.