5 - 46 Control Effects of Different Herbicides on Weeds in Sweet Sorghum Fields of Guangxi Zhuang Autonomous Region

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In order to solve the problem of weed control in Guangxi sweet sorghum fields, the 'Ketian 6' was used as the material, and 15 herbicides were applied after sowing of the 'Ketian 6' by using a randomized complete block test in this study. The results showed that after sowing and before emergence, different concentrations of single atrazine, metolachlor, halosulfuron-methyl and mixture of herbicides inhibited comprehensively the growth of plant, and affected the fields of the sweet sorghum. The single spraying 8 mL/667 m^2 halosulfuron-methyl (H7) had best control effects on weed fresh weight, which reduced 88.85% compared to spraying clear water. At the same time, spraying 8 mL/667 m^2 halosulfuron-methyl were safe to sweet sorghum, and the yield is up to 5.38 t/667 m^2(Table 1). The halosulfuronmethyl can be used as an ideal choice for weed control of sweet sorghum in Guangxi.

Table 1 The effect of herbicide treatment on yield of sweet sorghum.

Herbicide	Treatment	Yield (t/acre)	Yield increase compared with hand weeding/%	Yield increase compared with clear water/%
Atrazine	H1	4.78±0.05 b	3.66	10.53
	H2	4.26±0.09 d	−8.21	−0.49
	H3	4.79±0.04 b	5.81	12.54
Metolachlor	H4	3.39±0.13 e	−35.90	−26.20
	H5	2.81±0.01 f	−64.19	−52.47
	H6	2.14±0.21 g	−115.12	−99.76
Halosulfuron-methyl	H7	5.38±0.44 a	14.25	20.38
	H8	4.74±0.06 bc	2.80	9.74
	H9	4.75±0.01 bc	3.01	9.93
Atrazine + Metolachlor	H10	4.60±0.28 bcd	−0.25	6.90
	H11	4.57±0.19 bcd	−0.98	6.23
	H12	4.74±0.29 bc	2.74	9.68
Atrazine + Halosulfuron-methyl	H13	4.99±0.12 ab	7.65	14.24
	H14	4.71±0.14 bcd	2.13	9.12
	H15	4.55±0.07 bcd	−1.37	5.87
Hand weeding	H16	4.61±0.24 bcd	–	7.14
Clear water	H17	4.28±0.39 cd	−7.69	–