

Chickpea tolerance to Sharpen tank mixed with other PPO inhibitors

The 2010 Sharpen label prohibits tank mixing Sharpen with other PPO inhibitors such as Spartan and Valor. Previous NDSU research has shown that these combinations may provide better weed control than either herbicide applied alone. This study was conducted to confirm whether a tank mix of two PPO inhibitors is safe on peas and chickpeas. Glyphosate was applied PRE across the entire study.

Valor was the only treatment that caused significant chickpea injury. Tank mixing Sharpen with Valor did not significantly increase injury. There was essentially no injury with Sharpen alone or tank mixed with other PPO inhibitors such as Spartan and Reflex.

Sharpen and Spartan applied alone provided about 80% biennial wormwood control. Applied together as a tank mix, Sharpen + Spartan provided 99% biennial wormwood control. Similar increases were observed with Sharpen + Reflex and Sharpen + Valor.

Table. Chickpea tolerance to Sharpen tank mixed with other PPO inhibitors. (1018)

Treatment ^{bc}	Rate	Chickpea						Weed Control	
		Injury			Density	Height		Biww ^a	
		12 Jun	3 Jul	19 Jul	16 Jun	2 Jul	20 Jul	3 Jul	19 Jul
		-----%-----			m row	-----cm-----		-----%-----	
Sharpen	1 fl oz	0	0	0	2.5	28.3	37.5	83	81
Spartan	4.5 fl oz	0	0	0	2.4	27.0	35.3	78	80
Reflex	0.75 pt	0	0	0	3.1	27.5	37.2	43	45
Valor	2 oz	0	15	12	2.8	23.6	36.3	67	68
Prowl H2O	3 pt	0	0	0	2.2	27.0	36.5	7	0
Sharpen + Spartan	1 oz + 4.5 fl oz	0	0	0	2.3	25.4	37.1	100	99
Sharpen + Reflex	1 oz + 0.75 pt	0	0	0	2.5	25.6	37.9	93	92
Sharpen + Valor	1 oz + 2 oz	0	14	14	3.3	23.1	35.9	98	98
Sharpen + Prowl	1 oz + 3 pt	0	0	0	1.8	27.8	35.3	86	83
Prowl	1.5 pt	0	0	0	2.8	29.0	37.9	10	7
Untreated		0	0	0	2.6	28.3	37.8	0	0
LSD (0.05)		NS	2	2	1	3	6	15	16
CV		0	54	51	32	7	9	15	16

^aBiww =Biennial wormwood

^bAll applications applied PRE; glyphosate applied PRE across entire study.

^cSharpen applied with MSO (1%) + AMS (2.5%); Prowl=Prowl H2O.