

Control of volunteer canola in field pea, flax, sunflower, soybean, corn, and wheat

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Abstract: Canola can volunteer for several years following a canola crop. These volunteers can be very competitive and hard to control, especially in other broadleaf crops. Weed control options that provide excellent control of volunteer canola are often limited in broadleaf crops, especially soil-applied herbicides. In 2004, a volunteer canola study was conducted at the North Central Research Extension Center, Minot, North Dakota to evaluate several herbicides for control of volunteer canola in dry pea, flax, sunflower, soybean, and corn. The trial evaluated the effect of canola growth stage on herbicide efficacy. In general, volunteer canola (VC) control was better when herbicides were applied at the 3-leaf canola stage compared to 6-leaf or later. Only six postemergence herbicides provided excellent VC control at both application timings including tribenuron, nicosulfuron+rimsulfuron, nicosulfuron, foramsulfuron+isoxadifen safener, imazamox, and fomesafen+adjuvants. Several postemergence herbicides metribuzin, MCPA, MCPe, 2,4-D amine and bentazon provided good to excellent VC control when applied at the 3-leaf canola stage, but provided significantly less control when applied at the 6-leaf stage. In peas, soil-applied metribuzin provided 98% VC control. Metribuzin applied postemergence provided good (89%) VC control at the 3-leaf stage, but reduced to 72% at the 6-leaf stage. VC control with MCPA and bentazon was good to excellent at the 3-leaf stage, but very poor when applied at the 6-leaf stage. Imazamox provided good to excellent VC control at either stage. In flax, soil-applied sulfentrazone provided poor VC control, which was expected. Bromoxynil and MCPe provided excellent VC control when applied at the 3-leaf stage, but control dropped to fair to good when applied at the 6-leaf stage. Thifensulfuron provided only fair VC control early and poor control with the late application. In tribenuron-resistant sunflower, tribenuron and imazamethabenz provided good to excellent VC control at either application stage. Soil-applied sulfentrazone provided good VC control in sunflower and dry pea, which was better than expected in this study. In soybeans, soil-applied flumioxazin and imazethapyr+glyphosate provided excellent VC control, while metribuzin and flumetsulam provided fair to good control. Imazamox and fomesafen+adjuvants, applied postemergence, provided excellent VC control at both timings. Thifensulfuron, bentazon, and lactofen provided much less control when applied at the 6-leaf stage. Acifluorifen provided poor VC control at either timing. In corn, soil-applied isoxaflutole provided excellent VC control. Postemergence herbicides nicosulfuron, nicosulfuron+rimsulfuron, and formsulfuron+isoxadifen safener provided excellent VC control at both application timings. VC control with mesotrione+atrazine and dicamba+diflufenzopyr 12-13% with the 6-leaf application, while control with 2,4-D amine dropped 43%. Atrazine and fluroxypyr provided very little control at either application stage. In summary, canola volunteers become much harder to control with herbicides once they reach the 6-leaf to bolting stage. There are some herbicides that provide excellent control of small volunteers, but provide poor control of 6-

leaf canola or largere. In 2002, a volunteer canola study was conducted at the North Central Research Extension Center in wheat. Thifensulfuron, all rates, 2, 4-D ester and carfentrazone provided excellent control of cotyledon stage canola. Carfentrazone + MCPe, bromoxynil and thifensulfuron + MCPe provided excellent control of 3-leaf and 6-leaf canola. Thifensulfuron + fluroxypyr, fluroxypyr + MCPe, and tribenuron + MCPe provided excellent control of 3-leaf canola; however, control was reduced to good (83-89%) when applied to 6-leaf canola.