

Field Bindweed Control with Touchdown or Roundup Ultra in Walnuts

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Field bindweed (*Convolvulus arvensis*) is a herbaceous perennial weed which is difficult to control. Previous studies have noted that high rates of Roundup or Picloram provided the best control when evaluated one year after application. Generally, other workers have found that 3.0 lbs/a or higher rates were needed for reductions in field bindweed to persist into the second year. However, these studies have been done in the Midwest, where crops are grown without irrigation, and thus the results may not be applicable to California conditions. Other work has found that Fall applications provided the most consistent field bindweed control. Since the top portion of the plant dies back to ground level each Fall, energy from the top portion of the plant moves into the roots for storage during this time. Previous work has also noted that water stress reduces control, and thus applications should not be made when plants are stressed for water. Touchdown is scheduled to be registered in California in 1999. This study was performed to compare Touchdown and Roundup Ultra in terms of field bindweed control.

Touchdown and Roundup Ultra were each applied at three rates (2 lb/a*, 3lb/a, and 4 lb/a) in addition to each herbicide at the 2 lb/a rate plus Banvel at 0.25 lb/a. Another treatment combined ammonium sulfate at 13.2 lbs/100 gal with 2 lb/a of Touchdown or Roundup Ultra. These treatments were all compared to an untreated check plot. Treatments were applied on August 7, 1998, approximately one week after the area had been mowed. Three days prior to treatment, the area had been irrigated. Field bindweed was 6 to 24 inches in length and actively growing at the time of treatment.

At one week after treatment, the treatments which contained Banvel had the best control (Table 1). The treatment which included Banvel was approximately 18% better control than the comparable treatment of Roundup Ultra or Touchdown, alone. At two weeks after application, treatments plus Banvel were still providing better field bindweed control than Roundup Ultra or Touchdown applied alone. At four weeks after treatment, the higher rates of Touchdown or Roundup Ultra were providing equivalent control of field bindweed compared to either herbicide plus Banvel.

The 3 lb/a or 4 lb/a rates of Touchdown gave better control of field bindweed at one, two and four weeks after treatment, than did the 2 lb/a rate, but differences were not evident at later evaluations. Some slight differences in activity between Roundup Ultra and Touchdown were noted at the last evaluation with Touchdown seeming to provide better control, however, Touchdown and Roundup Ultra generally did not differ significantly in their control of field bindweed.

Adding ammonium sulfate generally increased field bindweed control, with Roundup Ultra benefiting the most from this addition. It appeared that adding ammonium sulfate

increased the burndown rate, but did not influence control at the last evaluation. Quicker burndown is often beneficial, if long-term control is not sacrificed.

Table 1. Field bindweed control at 7, 14, 28, 49 and 65 days after treatment.

Treatment and rate	Days after treatment				
	7	14	28	49	65
	-----(% control)-----				
Roundup Ultra					
@ 2 lb/a	64	72	71	46	35
@ 3 lb/a	65	84	87	62	50
@ 4 lb/a	71	82	85	60	38
@ 2lb/a					
+ Banvel @ 0.25 lb/a	81	94	92	65	35
+ Amm. Sulf. @ 13.2 lb/100gal	70	81	85	65	35
Touchdown¹					
@ 2 lb/a	62	76	76	62	48
@ 3 lb/a	79	88	92	62	50
@ 4 lb/a	74	88	91	54	45
@ 2lb/a					
+ Banvel @ 0.25 lb/a	81	88	86	72	50
+ Amm. Sulf. @ 13.2 lb/100gal	65	76	81	55	52
Untreated	0	0	0	0	0
LSD .05	9	10	12	18	18

¹ A nonionic surfactant was added to all Touchdown treatments at 0.5% v/v.

References

1. Bayer, D.E. 1987. Ecology of Field Bindweed and Current Control Strategies. Proc. Calif. Weed Conf. 39:195-196.
2. Wiese, A.F. and D.E. Lavake. 1986. Control of Field Bindweed (*Convolvulus arvensis*) with Postemergence Herbicides. Weed Sci. 34:77-80.
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