

Control of Butterfly Bush with Postemergence Herbicides

Butterfly bush (*Buddleja davidii*) is classified as invasive and noxious weed in several parts of the United States and other regions of the world. This weed can be found along roadsides, abandoned industrial sites, reforestation areas, and riparian areas. Little research has been conducted on how to control butterfly bush in the United States. Two experiments were conducted to evaluate the effectiveness of four herbicides and two application methods on postemergence butterfly bush control.

The four herbicides included; Roundup (glyphosate), Aquamaster (glyphosate), Garlon (triclopyr), and Arsenal (imazapyr). Methods of application used were spraying foliage with a backpack sprayer and applying herbicide concentrate to recently cut stems (cut-stump method). Maximum and equal label rates for each herbicide were used to treat plants for both application methods. Applications were made several months after planting and again to plants over 1 year old. Butterfly bush cultivars used were 'Black Knight' and 'Ellen's Blue'.

Roundup and Aquamaster provided higher levels of control compared to Garlon and Arsenal early in the experiment (Table 1). Cut-stump applications provided more rapid control than spray applications (Table 2). Despite differences in control when evaluated several weeks after application, all treated plants were dead when evaluated the following spring. All herbicides and both application methods provided complete control of butterfly bush. Due to the effectiveness of all treatments, resources and circumstances should dictate which herbicide and application method is most appropriate to the land manager.



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Table 1. Postemergence control two cultivars of one-year-old butterfly bush (*Buddleja davidii*) with various herbicides by spraying. Plants were rated on a scale from 0 to 10, where 0 = no control and 10 = plant death. Herbicide applied September 23, 2004.

Herbicide ^a	1 WAT ^b		4 WAT		6 WAT	
	Black Knight	Ellen's Blue	Black Knight	Ellen's Blue	Black Knight	Ellen's Blue
Roundup	5.0a*	6.3a	10.0a	10.0a	10.0a	10.0a
Aquamaster	5.5a	5.3a	10.0a	10.0a	10.0a	10.0a
Garlon	3.3b	5.3b	7.4c	7.0c	10.0a	9.8a
Arsenal	0.8c	0.8c	8.9b	6.8c	9.9a	9.1b
non-treated control	0.0c	0.0c	0.0d	0.0d	0.0c	0.0c

Table 2. Postemergence control of two butterfly bush (*Buddleja davidii*) cultivars using selected herbicides and applied with either a cut-stump treatment or spray. Plants were rated on a scale from 0 to 10, where 0 = no control and 10 = plant death. Plants were treated September 9, 2005, when they were approximately 2 m tall and wide.

Application method	Herbicide	Rate	2 WAT ^a		4 WAT		10 WAT	
			Black Knight	Ellen's Blue	Black Knight	Ellen's Blue	Black Knight	Ellen's Blue
Cut-stump ^b	Roundup	10.5*	8.3ab*	8.3ab	8.8a	8.3ab	10.0a	10.0a
	Garlon	15	5.0c	4.8cd	9.5a	9.0a	9.5a	9.0a
	Arsenal	7.5	5.0c	4.0cde	9.3a	9.3a	10.0a	10.0a
	control		0.0f	0.0f	0.0c	0.0c	0.0b	0.0b
Spray	Roundup	2.1*	9.0a	8.0ab	9.5a	8.3ab	9.5a	8.5a
	Garlon	3	6.0bc	5.5c	7.8ab	7.5b	8.8a	8.5a
	Arsenal	1.5	1.8ef	2.5de	6.3b	7.5ab	10.0a	9.5a
	control		0.0f	0.0f	0.0c	0.0c	0.0b	0.0b