Knox County
Cooperative Invasive Species Management Area

Invasive Plant Control Series

Japanese Hedge Parsley (*Torilis japonica*)

Summary

Japanese Hedge Parsley (*Torilis japonica*) is an up and coming invasive annual to biennial herbaceous plant in Knox County. Japanese Hedge Parsley (Fig. 1) is often found invading forest edges, right-of-ways, agricultural field edges, fallow fields, prairies, and yards after disturbances. Several methods of chemical control were evaluated in 2019 to determine the best method for controlling this species. All treatments were effective in controlling Japanese Hedge Parsley; however, treatments 1 and 2 appear slightly better than 3. If spraying in a grassy area, 2,4-D or 0.5% glyphosate can be used to effectively control Japanese Hedge Parsley without collateral damage. If spraying in a forb heavy area, 0.5% glyphosate is a better choice.

Methods

Three different herbicide treatments were tested to control Japanese Hedge Parsley. The different treatments were: 1) 0.7 oz./gal. 2,4-D amine salt plus nonionic surfactant, 2) 0.5% glyphosate solution plus nonionic surfactant, 3) 1% glyphosate solution plus nonionic surfactant, and 4) a control (or no treatment). Herbicide were applied with a foliar application to young-maturing individuals (some not quite flowering to just beginning to flower, 6" to 1' tall) on June 4th, 2019. The experimental site was an upland forested edge with a history of disturbance. Treatment areas were roughly 1 square meter plots. Efficacy of treatments was measured by estimating the percent controlled from 2 to 50 days after treatment (or DAT).

Figure 1: Japanese Hedge Parsley in flower.

Results

The percent control of the different treatments is listed in Table 1 and visualized in Fig. 2. Treatment 1 was the first to show signs of controlling the plants at 2 DAT and was the first to achieve 100% control around 6 DAT. From 15 DAT on to 51 DAT all three treatments (1-3) were 95 to 100% control and did not differ statistically from one another. Treatment 3 ended up with the most amount of Japanese Hedge Parsley at the end of the study (50 DAT) was not statistically different from the other two treatments.

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Table 1: The different treatments, rates, and percent control of Japanese Hedge Parsley.

Treatment #	Treatment Name	Rate	Rate Unit	Visual Percent Control					
				2 DAT+	6 DAT	15 DAT	24 DAT	35 DAT	50 DAT
1	2,4-D amine salt + NIS*	0.7	oz/gal	90	100	100	100	100	100
2	Glyphosate + NIS	0.64	oz/gal	40	60	95	95	100	100
3	Glyphosate + NIS	1.28	oz/gal	50	80	100	100	100	95
4	Control	N/A	N/A	0	0	0	0	0	0

*NIS = Nonionic Surfactant

+DAT = Days After Treatment

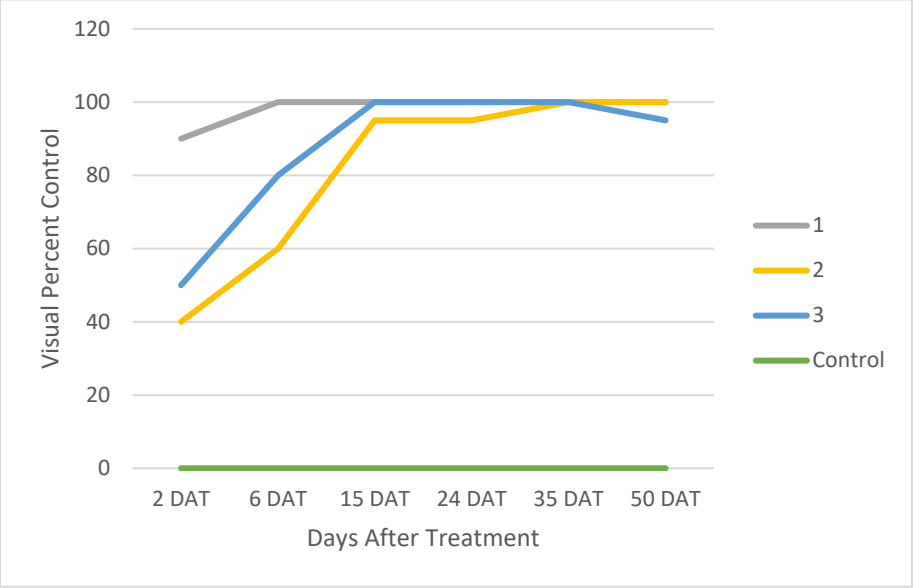

Figure 2: Percent control of Japanese Hedge Parsley days after different treatments.

Discussion

All control techniques were effective in reaching 95 to 100 % control of Japanese Hedge Parsley by 15 DAT. However, Treatment 2 seemed to have the least collateral damage to other forbs and grasses; the marestail, goldenrod, poison ivy, and cool season grasses in the nearby area appeared mostly unaffected. Treatment 1 worked well and was the first application to see major results, but it did have some collateral impact. The grasses were completely unaffected; however, the white snakeroot and goldenrod nearby did get damaged where spray touched. Treatment 3 mostly killed everything it touched. That treatment had Johnsongrass and new Japanese Hedge Parsley seedlings start to establish in disturbed area around 50 DAT.

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