Backpack and Handgun Sprayer Foliar Herbicide Treatment for Invasive Plants in Pastures, Natural Areas, and Forests

Is foliar herbicide treatment the best option for my situation? Backpack or spray handgun foliar herbicide treatments are most useful where the target trees or shrubs are less than eight feet tall, manual labor is available, and where small dead standing trees and shrubs can be tolerated. Depending on the herbicide, this method can be used for selective or nonselective weed control.

When should I spray? Foliar plant treatment is generally effective after full leaf out in the late spring throughout the summer and into fall. For most invasive plants, late summer and early fall are the optimal times to treat. Foliar treatment is not recommended in the early spring before full leaf out or after leaves begin changing colors in the fall. The exceptions are evergreen species such as Chinese privet and English ivy which are effectively controlled on warm fall and winter days. As a general rule of thumb, do not spray in windy conditions or when rainfall is expected within four hours.

What equipment do I need? A good backpack sprayer that can be dedicated to invasive plant control. When purchasing a new backpack sprayer, key features include sturdy construction, an impact resistant tank, a large opening for filling, chemically resistant Viton® seals to allow both oil and water herbicide mixes, a durable metal spray wand, a kink resistant hose, ability to change spray tips, padded shoulder straps, and a harness support system that solidly connects to the frame.

What type of spray tip should I use? Unfortunately, many backpack sprayers come with cheap plastic spray tips that provide a poor spray pattern and are not durable. Replace these plastic tips with stainless steel tips suited for backpack spraying. Note, spray tips can generally be purchased online or from agricultural pesticide equipment dealers.

What size trees, shrubs, and vines will this method work for? Since getting good coverage of the shoot apex is critical, backpack foliar treatment is effective on woody and herbaceous vegetation typically less than eight feet tall (Figure 1). For climbing vines that extend higher, one approach is to cut the vines at three to five feet and treat all foliage below the cut. Where cutting is not feasible, basal bark treatment may be a better option.

I just cleaned up my land with a mower or brush grinder and the invasive plants are resprouting. How soon can I treat them? For woody plants, you should wait until you have at least 3 feet of regrowth. For
blackberries and wild roses, you should wait at least nine months before treating. For herbaceous plants, you should wait until there are 12-24 inches of regrowth.

**What kind of coverage do I need to get effective control?** It is critical to get good coverage of the terminal growing point. Most herbicide labels recommend “spray to wet” coverage. However, herbicide overapplication will result in runoff from the foliage which is wasted herbicide (Figure 2).

**What herbicides should I use?** There are several herbicides that are useful for foliar treatment that are dependent upon the target species and the site to be treated. Some of the key active ingredients include glyphosate, triclopyr, aminopyralid, 2,4-D, imazapyr, picloram, and metsulfuron.

**Do I need to add any additives in with the herbicide?** This depends on several factors. A surfactant is often added to improve herbicide absorption into the leaves. We do not recommend using dish detergent instead of a high quality surfactant. For backpack sprayers, other useful additives include spray indicators and antifoaming agents.

**What safety gear should I use when doing backpack foliar herbicide treatments?** When doing backpack foliar herbicide treatments, always follow the herbicide label and use the required personal protective equipment. However, we recommend always wearing eye protection when doing any invasive plant control projects.

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**Questions?** Contact your local Alabama Cooperative Extension Office. [www.aces.edu](http://www.aces.edu)