Cut Stump Herbicide Treatment for Invasive Plants in Pastures, Natural Areas, and Forests

Is cut stump herbicide treatment the best option for my situation? Cut stump treatments are most useful where the target tree or shrub density is relatively low, manual labor is available, and where dead standing trees and shrubs are not desired. This method can be used selectively with little to no damage to surrounding vegetation. Cut stump treatment is not recommended where there are thousands of stems per acre to treat, or where trees or shrubs cannot be safely felled.

What equipment do I need? For larger stems you will typically need a good chainsaw, although a lightweight brush saw is fine for smaller multi-stemmed shrubs. A handsaw or pruning shears are adequate for smaller stems. Cut stump herbicide treatments are most easily applied with backpack sprayers or handheld pressurized spray bottles (Figure 1), but can also be applied with a wiper or paintbrush.

For what size trees and shrubs will this method work and how much herbicide is needed per stump? The cut stump treatment method is effective on almost any size woody invasive plant including large woody vines. However, small stems less than one half inch in diameter are not consistently controlled. For stumps larger than six inches in diameter, spray or paint the herbicide solution all the way around the stump onto the area just inside the bark. This is where the living tissue involved with moving the herbicide to the roots is located (Figure 2a). For smaller stumps, spray or paint the entire cut surface. In all cases, just ‘spray to wet’ and do not puddle the herbicide around the stump (Figure 2b).

Where should I cut? There are two main options for cutting height. The first option is to cut close to the ground (1-2 inches). This avoids leaving taller “ankle breaker” stumps that may be hazardous to walk or drive through but it limits your ability to retreat if needed. The second option is to leave a 4-6 inch stump, which can be recut a few inches lower and treated again if any resprouting does occur.

What herbicides should I use and how soon do I need to treat following cutting? The most typical approach is to use a water soluble formulation of glyphosate or triclopyr amine herbicide. Use a product that is a concentrate with a minimum 41% active ingredient (Roundup Pro®, Roundup Super Concentrate®, Garlon 3A® or generics). For these herbicides, prepare a 25% herbicide solution with water. This is often referred to as a 25% volume to volume (v/v) solution. For example, mix one quart of herbicide with three quarts of water to
make one gallon of solution. For products with a lower glyphosate or triclopyr amine concentration (8-20%), apply undiluted product to the stumps. In terms of timing, these herbicides should be applied within thirty seconds of cutting if possible and within no more than a few minutes at most. Note: For small jobs, one gallon will treat many stumps! Also, do not spray this mix on any plant foliage. It is a large waste of herbicide.

If you cannot immediately treat following cutting use a 25% v/v oil soluble formulation of triclopyr called triclopyr ester (Remedy® in pastures, Garlon 4® in forests, or others). This treatment can be delayed for a few weeks after cutting and still be effective. However, in addition to treating the cut surface, you must also spray the sides of the stump for this treatment to work. As with basal bark treatments, the triclopyr ester herbicide is mixed with an oil carrier instead of water. One option is to use a triclopyr ester product called Pathfinder II. This product is a premix of triclopyr ester and an oil carrier and is ready to use with no mixing required. Note: These products are not available in retail garden centers but can generally be purchased at farmer’s co-ops and pesticide distributors.

What about imazapyr for cut stumps? Imazapyr herbicides such as Arsenal® or Stalker® or generics are also extremely effective for cut stump treatment. However, due to their high degree of soil activity and potential for non-target damage to surrounding vegetation, imazapyr is not recommended for general homeowner use.

What time of year is best? Cut stump treatments can be done any time of the year with most woody invasive plants. While late summer through fall is often the optimal timing, late fall may be the easiest time from an operational standpoint. Temperatures are cooler, herbaceous vegetation is dormant, and undesirable critters are less active. The only time cut stump treatments should not be done is when trees are experiencing strong upward sap flow in the early spring. This is evident when stumps appear to “bleed” water following cutting. This upward flow may reduce efficacy.

I already have a “Ready to Use” glyphosate or triclopyr amine herbicide. Can I use it instead? No. Avoid using glyphosate or triclopyr amine “ready to use” (RTU) herbicides commonly sold at retail garden supply stores. The herbicide concentrations in these formulations are generally around 0.7 to 2% which is much too low for effective cut stump treatment.

What safety gear should I use when doing cut stump herbicide treatments? When doing cut stump treatments, safety precautions must be taken for both cutting and the herbicide treatment. Always follow the herbicide label and use the required personal protective equipment. Avoid leather gloves and leather boots when applying herbicides as they will readily adsorb many herbicides. We also recommend using eye protection at all times when doing cut stump treatments.

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