Wide-space injection with Arsenal AC herbicide for control of undesirable hardwood stems

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October 2003, Based on work by Dr. Andy Ezell, Mississippi State University.

**Equipment - Supplies**

- Arsenal Applicators Concentrate (produced by BASF)
- Chemical resistant spray bottle (available from farm/chemical supply, & auto parts stores)
- Hatchet or brush ax

**Mixing**

- Mix a 20 percent Arsenal AC in water solution (25 ounces of Arsenal + 103 ounces of water to make 1 gallon of solution)

**Application**

- Make one cut or hack through the bark into the cambium layer for every 3 inches of stem diameter measured at breast height (DBH at 4.5 feet from the ground).
- Apply 1 ml of herbicide/water solution into each cut.
- Adjust the nozzle of the spray bottle to deliver approximately 1 ml of solution for each trigger squeeze. Inexpensive plastic dose cups graduated in milliliters available at pharmacy & drugstores, can be used to check calibration.

**Application Timing**

- Treat stems in August to March
- Avoid applications during rapid tree growth/green up in spring and early summer

**Species Controlled**

- **Ash**
- Black oak
- Blackgum
- Boxelder
- **Cherry**
- Chinaberry
- Chinese Tallow-tree
- Cottonwood
- **Dogwood**
- Hickory
- Laurel oak
- Live oak
- Maple
- **Mulberry**
- Persimmon
- Privet
- Red Maple
- Sassafras
- **Sourwood**
- Sumac
- Sweetgum
- Sycamore
- **TITI**
- Willow
- **Willow oak**
- White oak
- Yellow-poplar

Species in italics are considered difficult-to-control and will require one additional cut for control. For example, on a 6" DBH stem that normally requires 2 cuts, make 1 additional cut for added control.

**Treatment Response**
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- Maximum treatment effectiveness occurs in the second growing season after treatment.
- In the first growing season after treatment, the most susceptible species (such as sweetgum) may die, but other species will lose foliage, produce a new flush of leaves which may exhibit abnormal leaf shapes, color, and clusters of small leaves or buds at branch and terminal tips. These trees will die in the second growing season following treatment.
- Arsenal is a soil active material. Do not spray the herbicide solution on the soil near desirable tree/crop species.

Application equipment: Chemical resistant spray bottle, metric dose cup for calibration of spray bottle, and hatchet.

Hatchet cut into stem.

Injection cut in stem.

Applying 1 ml of herbicide solution to cut by spraying on face of hatchet blade allowing herbicide to run into cut.