



# TEXAS A&M FOREST SERVICE

## *Reforestation: Herbicides for Site Preparation*

It is often beneficial to conduct site preparation operations on cutover sites, semi-open fields, and other areas with significant amounts of hardwood, brush, and/or herbaceous competition. This serves to facilitate the planting of seedlings, and to increase growth while reducing seedling mortality. These sites can be treated mechanically, chemically, or with prescribed fire. However, given the high costs of some types of mechanical site preparation and the liability concerns associated with the use of prescribed fire, chemical site preparation may often be the most viable alternative.

### **Types of Equipment:**

The most common method of application for site preparation herbicides is aerial application by helicopter or, less commonly, by light plane. Aerial application with fuel and chemical support trucks allows large areas to be treated in a short period of time and also facilitates even, complete coverage and application of the chemical. After making the proper prescription for the property, the herbicide vendor will usually delineate the treatment area boundaries with a GPS unit or otherwise mark the desired application area. A suitable location for landing, refueling, and refilling the chemical tanks must be located on or within a reasonable distance from the property.

Although no longer commonly practiced, application of herbicide by ground based heavy equipment (skidders or crawler tractors) may be used in circumstances where aerial application is not possible or practical. Examples of where ground application may be necessary include tracts too small or too hazardous to attract an aerial herbicide applicator, where scattered remaining hardwoods for wildlife or aesthetic purposes remain and cannot be sprayed around by air, as well as areas where drift of herbicide must be kept to an absolute minimum.



### **Application of Herbicides:**

The property is then sprayed during late summer or early fall (August-October) when woody species are sending their food reserves down to the roots. This will ensure proper kill of the targeted species. Additional chemicals can be added during this fall application to control herbaceous competition the following spring. This is very beneficial in providing additional moisture and nutrients to young seedlings within the same rooting zone and eliminates the cost of a second application.

# Reforestation: Herbicides for Site Preparation

Common site preparation herbicides for the control of woody vegetation include various formulations of the chemicals imazapyr (Arsenal, Chopper), glyphosate (Accord, Accord Site Prep), and triclopyr amine or ester (Garlon 3a and 4, respectively). These chemicals act to inhibit enzyme production (imazapyr and glyphosate) or to regulate growth (triclopyr) in woody plants. When added to typical late season (fall) treatments, Oust® (Sulfometuron methyl) controls weeds and grasses as they germinate during the fall, winter, and early spring. In order to facilitate adherence to the leaf surfaces of plants, these herbicides are often combined with a surfactant during the mixing process. It is a violation of Federal Law to use these products in a manner inconsistent with their labeling (see specimen labels for general information, directions for use, precautionary statements, mixing and application instructions, etc.).

## **Other Recommendations:**

Gallons per acre of spray solution applied will depend on vegetation density. Contact an herbicide specialist for a chemical prescription tailored specifically to your treatment area. Unlike mechanical site preparation, results from site preparation using herbicides cannot be evaluated for several months after application. The landowner is advised to obtain a written guarantee and signed contract from the vendor. Great care should be taken to avoid application to non-target areas and applications should cease when wind speed exceeds 10 mph.

Chemical site preparation is especially effective when followed by prescribed fire. Such an operation, which is also referred to as a brown and burn, serves to further eliminate hardwood competition and reduce debris improving planter access. Burning should not occur until at least 60 days after application to allow the herbicide to move into the roots of targeted species. Burning should be avoided on steep slopes, deep sands, or other situations with a high potential for erosion.

## **Additional Information:**

For more information on forestry herbicides, including application rates, targeted species, and material safety data sheets (MSDS) contact your local herbicide vendor, chemical representative, or consult the online CDMS herbicide database on the Internet. The database has label and safe handling information for all major forestry herbicides. The CDMS web address is: <http://www.cdms.net/LabelsMsd/LMDefault.aspx>

## **Environmental Considerations:**

All practices should follow Texas Forestry Best Management Practices for Silvicultural Chemicals and have no adverse effect on threatened or endangered species or habitat. For more information, please visit <http://tfsweb.tamu.edu/BMP> or contact your local Texas A&M Forest Service office.