In the interest of environmental stewardship, herbicides and herbicide application methods for controlling trees on rights-of-way have been developed and refined to minimize disturbance to the desired/desirable/compatible plant community and associated ecosystem. Various herbicide application methods are matched to the specific site based on existing site conditions, plant species, social concerns, and potential impacts on aesthetics. Backpack foliar treatment is a customary herbicide application method used by utility companies to selectively control trees and other undesirable vegetation on electric and pipeline rights-of-way.

Backpack foliar treatments (Photo 1) are appropriate over a wide range of undesirable plant densities – from a relatively low to a very high number of stems per acre, and are ideal when:
1. Plants are in full leaf
2. Undesirable plants need to be controlled completely (above- and below ground)
3. Undesirable plant stems are generally small (1 - 12 feet in height)
4. The site is sufficiently removed from sensitive areas such as croplands, waterways and high visibility areas. (NOTE: drift can be controlled with proper equipment calibration, adjuvants and awareness to current wind and humidity readings).

Potential Negative Effects of Backpack Foliar Treatments

- Aesthetics
  - Brownout (Photo 2): A term used to describe the browning of leaves on plants, potentially within days of application, as a result of the plan reacting to the active ingredient of the herbicide. While brownout is a clue to the effectiveness of treatment it can also be a negative effect if large numbers of dead stems are readily observable to the passerby.
  - The treated stem, while dead, may remain standing for a year or more.
  - If aesthetics is a critical concern, then other treatments such as mowing or hand-cutting (with follow-up herbicide application) or dormant applications may be more suitable.

- Non-target herbicide deposition (Photo 3)
  - Foliar treatments can potentially affect non-target vegetation up to 13 feet from the target stem.
  - Non-target impact generally increases with increased stem height.

Benefits of Backpack Foliar Treatments

- Overall, less herbicide entering the system
  - Although non-target deposition may be broader than with other techniques there is still less herbicide entering the environment due to lower rates of active ingredient. Up to 200 times less herbicide when compared to basal or cut-stump treatment*.
  - Non-target effect can be minimized by employing trained professionals and using industry standard best practices such as; applying within 10 feet of target, applying only to point of run-off, halting application in windy and/or rainy conditions.

* Off-target herbicide deposition associated with treating individual trees; CA Nowak, BD Ballard - Environmental management, 2005

Photo 1: A hand-powered (pictured) or motorized backpack tank and spray gun with a two-way nozzle is used to apply either a cone or stream pattern of herbicide spray