Notes for Fall and Winter Herbicide Applications

Controlling Weeds within Desirable Vegetation and Extending the Treatment Season

Killing invasive weeds without harming remnant native vegetation is the Holy Grail for restoration. Until technology provides species specific herbicides, we have to rely on exploiting differences in phenology, sensitivity and uptake; careful application; and being content with doing more good than harm (as well as mitigating the harm and of course considering non-chemical approaches i.e. practicing good Integrated Pest Management). Depending on the species in play, fall and winter can be used effectively to avoid impacts to many of our native deciduous and ephemeral species while still delivering effective weed control.

Be aware of the following factors when applying herbicide in fall or winter:

Flexibility in response to good spray conditions

Here in the Portland area, we generally have several multi-day dry periods scattered through our famously wet autumns and winters. Successful herbicide use during this time requires temperatures above 42*F (preferably 50oF for at least part of the day). Because moist leaves will dilute herbicides, and rain or heavy fog after can wash them away, allow a day of dry weather before application and 1-2 days afterwards for full uptake. Because it is difficult to accurately predict these "windows of opportunity" quick response by applicators can maximize production during these fleeting periods.

Adapting tank mixes for winter conditions

Many of our evergreen broadleaf weeds (English ivy, Vinca, laurel etc…), develop a progressively thicker cuticle layer during the summer. By fall or winter, these leaf conditions, combined with slow growth rates, mean applicators must make allowances to get herbicides into plants and to translocate them effectively to the roots. Strategies to consider include keeping herbicide rates low (2%) and increasing the use of adjuvants, including surfactants, penetrants and uptake enhancers such as foliar nitrogen.

However....

Careful application (true in growing season too!)

Although many of our native forbs and shrubs are either dormant or underground by late October, they can still be harmed or killed by herbicide contact with their stems, especially when oil based herbicides or surfactants are used. This becomes increasingly true as buds swell in advance of bud-break in late winter. Because increased adjuvants are generally necessary in winter to achieve good control (see above), careful application is necessary to avoid non-target affects.

Knowledge of site ecology

For all sites, a good understanding of what native or otherwise desirable vegetation is persisting is necessary to develop the most effective possible treatment approach. The forb layer, especially ephemeral forbs such as trillium, false Solomon's seal etc…or any winter annuals, are both the hardest to detect and the hardest to restore. Timing pre-treatment site visits for when ephemeral species are visible and exploring within dense weed patches should be considered a best practice.

Patience with treating larger landscapes

Finally, if you have a large area to treat during fall and winter, it may require multiple years before enough treatment days accumulate. As with many things, patience is a virtue.

Situations where fall and winter application may be most useful:

- Wherever there is a substantial mix of native and non-native vegetation.
- When you have more to accomplish than is possible during the "normal" season.
- When manual control is not feasible.

Species and methods for fall and winter herbicide application

Species / Taxa Application Guidelines Comments

English or Irish ivy (*Hedera* sp.)

Application Guidelines: Increasing surfactant rate and / or adding penetrants (Scythe) and uptake enhancers (Bronc) may improve control.

Comments: Wait for deciduous leaves to settle down through the ivy "canopy" in fall to begin treatment. This strategy can also backfire if leaves fail to settle as intended.

Himalayan and evergreen blackberry (*Rubus* sp.)

Application Guidelines: Keeping herbicide rates down to 2% may improve total translocation to roots.

Comments: Wait for onset of fall rains to end drought-induced dormancy.

Holly (*Ilex* sp.), laurel (*Prunus laurocerasus* et al.) and others weedy trees (Prunus sp., Crataegus etc.)

Effectiveness of late winter/early spring treatments may vary as sap starts running. Some suggest covering stump with plastic or a stump "cookie" to prevent rain from washing herbicide off.