Have Perennial Broadleaf Issues? Consider Applying 2,4-D and Clopyralid (Stinger) this Fall

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While it is probably difficult to think about the post-harvest season at this time of year, I want to share a perennial weed management strategy now so you have time to plan accordingly in case you would like to implement it on some of your blocks this fall.

This strategy was explained to me by David Bittner of Bittner-Singer Orchards, and entails a post-harvest 2,4-D and clopyralid (Stinger) application, applied across the entire orchard floor "from tree to tree". The idea here is to hit both the herbicide strip and the row middle in a single pass, removing as many broadleaves from the strip and row middle as you can, while leaving your orchard sod intact. He has found from personal experience that treating against these weeds in the herbicide strip alone doesn't do the job, as they'll still persist in the row middle, and simply creep back into the strip.

This strategy is most helpful in orchards with heavy perennial broadleaf pressure. In particular, heavy pressure from Canada thistle, field or hedge bindweed, or curly dock would likely warrant this application. While high densities of these species should be the main justification for this application, additional benefits of this application would include cleaning up some of your less troublesome broadleaves as well, including your dandelions and any annual broadleaves that are still actively growing late in the season.

David explained that some additional big-picture benefits of this application include:

- These perennials are difficult to control with applications made at other times of the year. Many perennial weeds are most susceptible to systemic herbicides in the fall, prior to frost events while they are still actively growing. Glyphosate **should NOT** be used after early-July, as it can have sub-lethal effects on the trees, and make the trees more susceptible to winter injury.
- This application reduces dandelions (and other broadleaves) in the row middle. This reduces the chance of your tractor overheating from a radiator plugged with dandelion seed in the spring (Figure 1).
- Removing flowering broadleaves from the row middles may keep pollinators out of your treatment areas, potentially making insecticide applications less harmful to pollinators.
- Many insects, such as the tarnished plant bug, can be found in broadleaf weeds. Removing them from the orchard floor can help reduce your crop insect damage when the orchard floor is mowed. David found his tarnished plant bug damage substantially decreased once he started implementing this program.
- Broadleaves can harbor viruses that can infect apple; removing them from the orchard floor may further decrease the chance for virus spread.

Figure 1. This row was sprayed "tree to tree" in the fall of 2020. The photo was taken this season, and is still mostly broadleaf-free.

David finds this fall application greatly suppresses these problem perennials for three years. He said you could also apply these materials in the spring pre-bloom before dandelion goes to seed, but has found the spring timing only provides about two years of suppression.

While this application will help clean up your perennial broadleaves, it should complement your already existing weed management program to keep the rest of your weeds under control the rest of the year. You will still want to keep on top of your residual applications in the late fall/spring, and will likely want to use a follow up contact application or two in the late spring and summer.

Some tips to implement this program successfully:

- David was able to use the herbicide boom sprayer he already had, but his team attached an additional boom to the front of the tractor so that they could spray the entire tree-to-tree orchard floor in one pass. (Figures 2-4)
- Timing of this application (like most herbicides) is important. The application should go on post-harvest, but prior to frost so that weeds are still actively growing at the time of the application.

Frost damaged plants will not translocate the herbicide down into the roots as well, so control would be limited.

- Herbicide strips should already be fairly well-managed ahead of this application. Weeds that are taller than your boom will likely not be controlled, and raising the boom too high greatly increases the risk for tree injury.
- On the flipside, applying to a bare herbicide strip will also limit efficacy. Weeds need to be present and actively growing in order to take up and translocate the herbicides.
- Do not tank mix this application with a burndown product. Burndown products, like paraquat or glufosinate, will also quickly stress out the weeds and limit the amount of systemic herbicide translocation into the roots.
- If you want to make a fall pre-emergent application, I would do the 2,4-D + clopyralid first, and then follow up with the pre-emergent application later after the herbicide strip has cleared up. Remember that most pre-emergent herbicides need to be applied to bare ground for good soil contact.
- Both of these products can only be applied to trees that are one year old and older, and should be well established, exhibiting good plant growth. Follow both labels closely to make sure you are maximizing your weed control while also keeping your trees in good health.

Figure 2. David's sprayer setup. An additional boom is attached to the front of his tractor so he can spray the entire row from tree to tree.

Figure 3. A close-up of the extra boom.

Figure 4. The base of the sprayer includes two pins and one quick coupler to attach the front boom to spray the entire orchard floor.

If you have tough perennial broadleaves, and are interested in implementing this strategy, feel free to get in touch with me at mrb254@cornell.edu or 518-410-6823. I'd be interested in collecting some data off of your site! You can also get in touch with David for additional details on this strategy and how he put together his sprayer. He can be reached at david@bittnersingerorchards.com, or at 716-778-7330.