~ 10 ~
New and Difficult Weeds in Ohio Nurseries

Hannah M. Mathers and Randall H. Zondag

The ornamental industry is always facing something new. New plants, new chemicals, new production methods are a given; however, new pests are always somewhat unexpected — even though they happen consistently. I know this is a contradiction, and it would take another article, another time, to explain why. However, it is still reality.

A grower once told me, "We have at least one new pest each year." New pests, more than any other change in the nursery business, seem to create anxiety and frustration for ornamental managers. New weeds do not rank in the same class, for short-term devastation posed, as do new insect pests like Emerald Ash Borer or new diseases like Sudden Oak Death. However, for nursery operations, new weeds can cause long-term expense and just as much, and maybe more, anxiety and frustration on a day-to-day level, to a nursery operation.

In Ohio, we are seeing two relatively new nursery field weeds — creeping yellow field cress, also known as kik *(Rorippa sylvestris),* and red stem filaree *(Erodium cicutarium)* — and one old, but difficult weed — wild garlic *(Allium vineale)* — causing control problems for growers.

Hannah M. Mathers, Department of Horticulture and Crop Science, The Ohio State University; Randall H. Zondag, Ohio State University Extension, Lake County,.

Creeping Yellow Field Cress or Kik

Creeping yellow field cress or kik *(Rorippa sylvestris)* is a relatively new weed to Ohio nursery fields. It has been in Ohio for a number of years, but only recently has it become important in nursery fields. Unlike marsh yellowcress *(Rorippa islandica),* which is more familiar to Ohio growers and is an annual, creeping yellow field cress is a perennial that spreads by rhizomes. A three-centimeter piece can make 2,000 creeping yellow field cress plants in one year (C. Elmore, personal communication). Unfortunately, *R. sylvestris* can also cross with the annual *R. islandica,* increasing its ability to spread and reproduce.

The leaves of kik are more finely cut than those of marsh yellowcress (Uva *et al.,* 1997). It overwinters as a rosette of finely lobed leaves. The leaves are alternate and pinnatified with three to seven irregularly toothed lateral lobes and a larger terminal lobe (Uva *et al.,* 1997). Kik tolerates a wide range of soil types and conditions but is often found on heavy, wet, or poorly drained fields.

A suggested control is products with the amine formulation of 2,4-D (ex: Solution Water Soluble) + Gallery (isoxaben). The amine formulations are recommended because they are less volatile than the esters. Casoron (dicholbenil) at 2 to 4

lbs active ingredient per acre is another suggestion. However, both of these controls need to be used with extreme caution around nursery stock due to potential phytotoxicity issues. Check the label carefully for stock tolerance and restrictions; *e.g.,* do not apply Casoron when soil temps are above 16°C on sandy soils or soils with less than 2 to 3% organic matter. The 2,4-D products are broadleaf postemergent weed killers and generally are only used in non-crop nursery areas, never as over-the-top applications, and should be used with extreme caution even as directed sprays.

Red Stem Filaree *(Erodium cicutarium)*

Red stem filaree is also known as filaree or common storksbill (Uva *et al.,* 1997). It is a winter annual or biennial that overwinters as a prostrate basal rosette. Stems elongate the following spring and can reach 10 to 50 cm in height. Leaves and stems are often reddish.

The flowers are pink to purple and 5 to 8 mm long (Uva *et al.,* 1997). Each flower produces a beak-like fruit that separates into five sections (mericaps) when mature. Each section consists of a seed and a spirally twisted hairy tail that coils under dry conditions and uncoils when moist (Uva *et al.,* 1997). This tail creates a corkscrew action with the seed — which digs it into the ground. It is usually found on dry, sandy soil and is a problem in many perennial crops including nursery, orchards, and Christmas trees. It is also a problem in turfgrass and landscape plantings.

Nursery growers in other states have found success using a combination of Goal and dinitroaniline (DNA) herbicides, such as OH II (oxyfluorfen + pendimethalin) (C. Elmore, personal communication). In a search of the Crop Protection Reference in C&P Press (2003), Surflan (oryzalin) and Snapshot (isoxaben + trifluralin) were the only two DNA and DNA-containing herbicides (respectively) that were registered for use. OH II did not appear as a registered product.

Another suggested control is Goal 2XL (oxyfluorfen) applied in the fall. Since filaree is primarily a winter annual, this approach has worked (C. Elmore, personal communication).

Again, check the label carefully for stock tolerance and restrictions as Goal can be quite injurious to many nursery crops and is quite volatile. Gallery 75DF (isoxaben) applied in the fall with a "kicker" or booster in the spring is another suggestion.

Wild Garlic *(Allium vineale)*

This weed is an increasing problem in Ohio nurseries. It is a bulbous perennial. Fibrous roots are attached to the bottom of a rounded to egg-shaped bulb. The bulbs have a papery outer coating (Uva *et al.,* 1997). Bulblets form at the base of larger bulbs.

Reproduction is by aerial bulblets and the underground bulblets and rarely by seed (Uva *et al.,* 1997). Bulblets often remain dormant over the winter and germinate the following spring or one to five years later.

Growers in Ohio report that wild garlic "quickly becomes a problem" in a nursery field. A typical comment is: "Where one plant was last year, five plants come up the following spring." Flowers or aerial bulblets are produced in May and June at the top of stems. These later become globe-shaped umbels (Uva *et al.,* 1997).

Wild garlic is also known as field garlic or wild onion. Wild onion *(Allium canadense),* however, as the scientific name indicates, is a different species. The leaves of wild onion are flat in cross section, not hollow, and the bulb has a fibrous outer coating, not papery and thin like wild garlic. Wild garlic usually grows on rich soils but can tolerate a wide range of soil conditions (Uva *et al.*, 1997).

Suggested controls include 2,4-D products when the plants are quite small and 2,4-D + Gallery. Again, 2,4-D products are broadleaf postemergent weed killers and generally only used in non-crop nursery areas, never as over-the-top applications. Late fall tilling has been effective in row crops as the bulblets are exposed to killing temperatures (C. Elmore, personal communication). Plateau and Image 70 DG are registered pre/post-emergent controls.

Conclusions

The three weed species reported earlier are becoming serious weed problems in Ohio nurseries that are using standard herbicide-based weed control programs (glyphosate, triazines, and DNAs). The standard programs are actually increasing the weed populations of these species by releasing them from competition with other weeds. Research is needed to evaluate a variety of preemergence herbicides alone, or in combination, that might control these three species.

The word "suggested" has been used previously in the control sections for each weed. As indicated, all the "suggested" controls have limitations and should be used only with caution. They are only "suggestions," not recommendations!

Research is needed to determine viable management controls. Red stem filaree, creeping yellow field cress, and wild garlic will never cause the destruction and tax-payer burden that emerald ash borer poses; however, these weeds, if allowed to get out-of-control, can be potentially more damaging to a nursery grower's business.

References

Uva, R. H., J. C. Neal, J. M. DiTomaso. 1997. *Weeds of the Northeast.* Comstock Publishing. Ithaca, New York.

Chemical & Pharmaceutical Press, Inc. 2003. Labels and MSDS search. Updated: 10/2003. Last accessed: 12/02/2003. http://cppress.com