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Mike Metzger - Editor

We Can Beat Waterhemp in Sugarbeet Fields

Waterhemp is a summer annual broadleaf weed in the pigweed family. Although it is closely related to redroot pigweed, one of the most notable differences is that waterhemp germinates and emerges much later in (and throughout) the growing season. Data from Iowa State University indicates waterhemp requires approximate 350 corn growing degree days (base temperature 50°F), to germinate and emerge in west central Minnesota and North Dakota. Generally speaking, this translates to about May 25th in any given year.

So what is the best way to control waterhemp in sugarbeet? Research trials conducted over the past two seasons indicate very good waterhemp control can be achieved by using chloroacetamide herbicides like S-metolachlor (Dual Magnum, Cinch or generics), Outlook or Warrant as an early post-emergence application (lay-by) to your sugarbeet crop. It is important to keep in mind that the beets need to be at least at the two-leaf stage and waterhemp must not have yet emerged (this herbicide family works as a preventive and will not kill any weeds that have already emerged). Chloroacetamide herbicides applied lay-by will also need precipitation for activation and distribution in the soil.



Waterhemp

**Red Root
Pigweed**



Pre-Emerge Herbicides At Work
2014 NDSU Trials - Herman, MN

A second approach utilizes both a pre-emergence and lay-by application working in tandem. This methodology requires the application of either S-metolachlor at 0.5 to 0.75 pints/acre or ethofumesate (Nortron or generics) at 2 to 3 pints/acre pre-sugarbeet emergence and then followed by one of the lay-by treatments listed above. This pre/lay-by approach overlaps the soil-applied herbicides and offers a 'control buffer' in the event that there is inadequate precipitation to properly activate the lay-by herbicide. If you choose this method of control, please discuss the

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herbicide rates and timing of the lay-by application with your Minn-Dak Agricultur-
alist.

Please keep in mind that a post-emergence alone strategy **IS NOT GOOD ENOUGH** even when glyphosate is applied in conjunction with tank-mix partners such as ethofumesate and UpBeet. In our research, we have found that repeat applications of these products affords only 75% waterhemp control at best - That's not enough to win the battle with waterhemp!

Photo: Dr. Tom Peters

**Roundup PowerMax + NIS + AMS Applied
Sequentially at 28 - 32 oz/A at Herman, MN**

Ever Wonder Why Waterhemp Is Such A Formidable Foe? *Consider the following 'tidbits' about waterhemp:*

- Waterhemp produces seed like crazy – up to **250,000 individual seeds** per single waterhemp plant
- Waterhemp seed remains viable in the seedbank for **four to six years** (this is why the weeds management strategy must extend to other crops in the sequence)
- Germination generally begins in late May but it is not uncommon for **germination to continue through early August** - well after most herbicide applications are completed
- Mature plants generally grow to about 4 or 5 feet tall in most agronomic settings but can **exceed heights of 10 feet** if it needs to compete with the host crop
- Waterhemp grows rapidly and is **capable of a growth rate of almost 1 inch per day** during hot and humid days in June and July
- Waterhemp is very good at 'beating the system' and has **at least some level of resistance** to the following herbicide modes of action in MN and ND:
 - Site 2 ALS Inhibitors (Harmony, Raptor)
 - Site 9 EPSP Synthase Inhibitors (glyphosate)
 - Site 14 PPO Inhibitors (Flexstar)



Photo: Ohio State Weed Lab

A special thanks to Dr. Tom Peters (NDSU & U of MN Extension Sugarbeet Agronomist and Weed Control Specialist) for his insight and contributions to this month's issue.