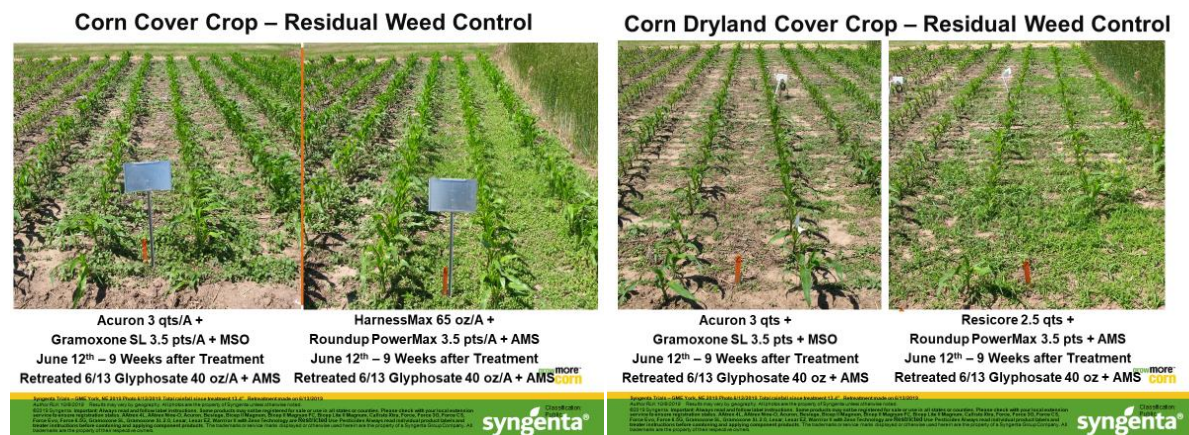


Residual Performance of Group 15 Herbicides after Burndown of Cover Crops



The prolonged cool and wet conditions in 2019 offered an opportunity to evaluate soil stability and residual differences between the Group 15 containing herbicides. The 2019 Grow More Experience Trials at York, NE experienced 13.6" of total rainfall from planting through June 12th (photos above) or about 170% of normal.

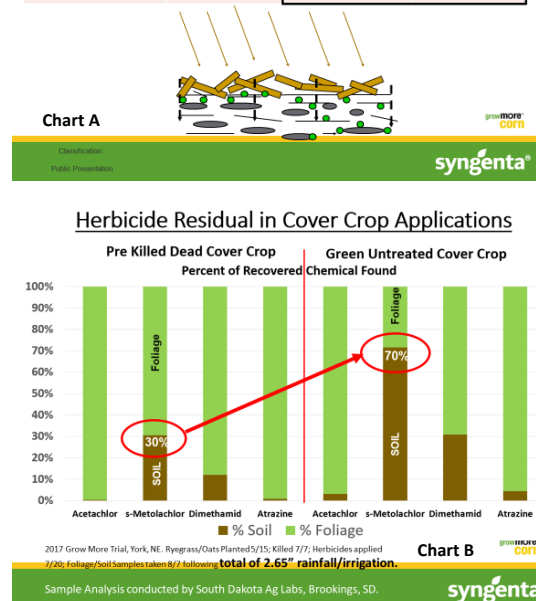
CORN HERBICIDES - Chloroacetamides

Solubility measures the relative concentration of a chemical that can be suspended within a given volume of water. Higher solubility (Chart A&B) can help increase the amount of chemical that can be solubilized and rinsed off of the crop residue to reach the soil surface.

Chemistry	Solubility	Adsorbity	Soil Half Life
S-Metolachlor	488 PPM	200 KOC	43 Days
Alachlor	242 PPM	170 KOC	13 Days
Acetachlor	223 PPM	181 KOC	16 Days
Dimethamid	1174 PPM	141 KOC	29 Days

When comparing soil chemical characteristics S-metolachlor (chart A) has a higher Koc index which measures the ability of a product to adsorb to the soil colloids and resist dilution movement within the soil solution. Higher Koc indicates the more tightly a chemical is bound to the soil to resist leaching or dilution into the lower soil layers or below where weeds typically are germinating.

S-metolachlor chemically has a longer soil half life. The ability to stay in the weed germinating zone coupled with the longer soil half life can help explain why products containing s-metolachlor like Dual II Magnum, Bicep II Magnum, Lexar EZ, or Acuron herbicides provide longer residual weed control.



Both of the trials (Top Photo Slides) were conducted in a cover crop burndown demonstration. In a 2017 (Chart B) trial at the York Grow More Experience Trials, cover crop was planted across the plots. One half was treated with glyphosate so all ryegrass and weeds were completely senesced. The applications shown were then made to the trial. A total of 2.65" of rain/irrigation was applied to the trial over a 2 week timeframe to create washoff. Foliage samples were collected from 6 one foot square areas, ground and mixed together and a sample pulled for analysis. In the same squares six 6" soil cores were taken, mixed and a sample pulled for analysis. All samples were sent for chemical analysis by SD Ag Labs. Chart B represents the results from the trial. The brown bars represent the percentage of each active ingredient found in the soil samples, and the green bar section represents the percentage of active ingredient found in the foliage.

When comparing s-metolachlor to acetachlor, the research showed a higher portion of the applied s-metolachlor chemical reached the soil profile. S-metolachlor is uniquely formulated as a true liquid and has properties that help improve wash off along with higher solubility. This can help explain why more s-metolachlor reached the soil following rainfall.

This study also showed why applicators should apply their residual herbicides in the same pass as their burndown herbicides if labeled. The waxy leaf surfaces help to bead up the spray droplets improving the runoff and movement to the soil similar to raindrops on a newly waxed vehicle. The dried dead residual has a rougher pore laced surface that can trap herbicide spray and prevent washoff. The s-metolachlor washoff was over twice (from 30% to 70%) as effective when applying to green plant tissue.

The weed control levels and residual differences experienced in the first two side by side trials can partially be explained by looking at physical properties of the active ingredients as discussed earlier. When coupled with the runoff study helps to explain why s-metolachlor containing products like Acuron, Lexar EZ, or Bicep II Magnum herbicides perform well in no-till burndown or cover crop burndown conditions.

Visit KnowMoreGrowMore.com, a place to learn more to enable you to grow more. Join the conversation online – connect with us at social.SyngentaUS.com.

To unsubscribe from this email list, click [here](#). Provide your first name, last name, email address and the email address that sent the message. Visit <http://www.syngenta-us.com/legal/privacypolicy.html> to view Syngenta's Privacy Policy.

Please do not modify or alter the content of this message without prior, written approval from Syngenta.

Product performance assumes disease presence.

©2020 Syngenta. **Important: Always read and follow label instructions. Some products may not be registered for sale or use in all states or counties. Please check with your local extension service to ensure registration status. AAtrex 4L, AAtrex Nine-O, Acuron, Besiege, Bicep II Magnum, Bicep II Magnum FC, Bicep Lite II Magnum, Callisto Xtra, Cyclone SL 2.0, Endigo ZC, Endigo ZCX, Epi-Mek 0.15EC, Expert, Force 3G, Force CS, Force Evo, Force 6.5G, Gramoxone SL, Gramoxone SL 2.0, Lexar, Lexar EZ, Lumax, Lumax EZ, Medal II ATZ, Valium with VaporGrip Technology, Voliam Xpress and Warrior II with Zeon Technology are Restricted Use Pesticides.**

Some seed treatment offers are separately registered products applied to the seed as a combined slurry. **Always read individual product labels and treater instructions before combining and applying component products.** Orondis Gold is a combination of separately registered products: Orondis Gold 200 and Orondis Gold B.

Important: Always read and follow label and bag tag instructions; only those labeled as tolerant to glufosinate may be sprayed with glufosinate ammonium based herbicides. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of Bayer. HERCULEX® and the HERCULEX Shield are trademarks of Dow AgroSciences, LLC. HERCULEX Insect Protection technology by Dow AgroSciences. **Under federal and local laws, only dicamba-containing herbicides registered for use on dicamba-tolerant varieties may be applied. See product labels for details and tank mix partners.** Golden Harvest® and NK® Soybean varieties are protected under granted or pending U.S. variety patents and other intellectual property rights, regardless of the trait(s) within the seed. The Genuity® Roundup Ready 2 Yield® and Roundup Ready 2 Xtend® traits may be protected under numerous United States patents. It is unlawful to save soybeans containing these protected traits for planting or transfer to others for use as a planting seed. Roundup Ready 2 Yield®, Roundup Ready 2 Xtend®, Genuity®, Genuity and Design VaporGrip Technology, and Genuity Icons are trademarks used under license from Monsanto Technology LLC. The trademarks or service marks displayed or otherwise used herein are the property of a Syngenta Group Company. All other trademarks are the property of their respective owners.