



Getting the Most Out of S-Metolachlor..

The use of soil-applied herbicides is an excellent option to achieve maximum weed control in fields with a known history of glyphosate resistant waterhemp. A single waterhemp plant is capable of producing over 250,000 individual seeds, many of which are viable in the seed bank for four to six years. Growers must be vigilant in their weeds management strategy both in sugarbeet and in other rotational crops. One of the most effective 'sugarbeet-safe' herbicides utilized for controlling waterhemp is S-Metolachlor.

Are All of the Generic S-metolachlor Products Labeled on Sugarbeets?

Simply put – NO!!! It seems like every one and their brother/sister has their own proprietary brand and/or formulation of S-metolachlor or metolachlor, and while many are labeled for use on sugarbeet, there are quite a few that are not. To make it even more confusing, many of the products that are labeled on sugarbeet share a trade name with a product that is not. If your retailer tells you that "Charger" sold by Winfield is labeled on sugarbeets, they may or may not be correct – "Charger Basic" is legal whereas "Charger Max" would be considered off-label. Make sure you refer to the product label before loading your sprayer.

Should I Be Using a S-metolachlor That Contains a Safener?

The goal of herbicide safeners is to selectively protect the field crop from herbicide damage without reducing activity on the targeted weed species. Many of the S-metolachlor products are 'safened' versions containing a compound called benoxacor to lessen the likelihood of injury to corn. These safened versions provide no additional benefits or penalties in sugarbeet and typically are more expensive

What Are Herbicide Isomers and Why Should I Care?

To put it simply, isomers are herbicide active ingredients that have the same chemical formula, but the individual elements of the molecules are arranged differently. Think of this difference like a pair of gloves – although both gloves have a thumb and four fingers,



the arrangement on each individual glove is just slightly different from the other. This small difference in molecular arrangement becomes important because some isomers bind more readily to their target site than others of a similar arrangement. You can certainly wear a left-handed

glove on your right hand, but the other is going to fit much better. This basic principle applies directly to weed control in that if one isomer does not bind as easily to the herbicide target site as some of the others, this isomer will not contribute as much to controlling weeds as the better binding isomers. This is exactly the case when it comes to S-metolachlor.

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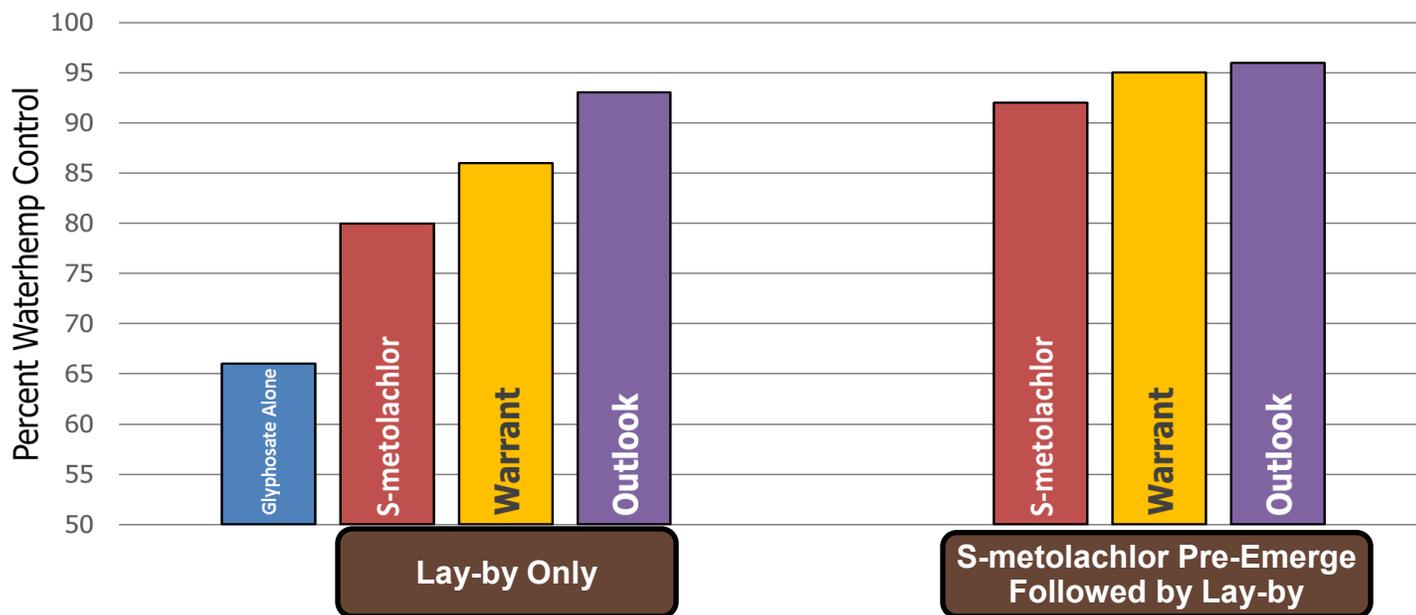
All metolachlor products (whether it is Dual, Cinch or a generic brand) contain a blend of isomers – ‘S’ and ‘R.’ S-isomers are more active and will give you a better bang for your buck (right glove on the right hand) whereas the R-isomers are still active, but do not work as well as their partner (left glove on the right hand). This ratio of isomers has a direct correlation to the rate of herbicide needed to achieve adequate weed control. ‘Branded’ products like Dual Magnum and Cinch are formulated to contain 88% of the more active S-isomers and 12% of the less active R-isomers. Although a few of the generic formulations are formulated to have this same S- to R-isomer ratio, many contain a 50/50 ratio (especially those utilized in corn and soybeans). **This lower concentration of the more active S-isomer will result in poorer weed control unless the application rate is adjusted accordingly.**

Please keep in mind that there is nothing wrong with the generic formulations so long that they are applied per their respective label and that their application rates are adjusted accordingly to achieve desired levels of weed control. Generally speaking, the 88/12 ratio will provide the same level of weed control at a 35 percent lower application rate than the 50/50 blend. More often than not, the price per acre on the 50/50 blends will not be as attractive after this rate adjustment is made.

Should I be Applying S-Metolachlor as a Pre- or Post-Emerge Application?

How about both! Data out of NDSU and the University of Minnesota have shown that S-metolachlor can give excellent weed control (specifically to waterhemp) when layered utilizing multiple applications during the growing season - particularly as a pre-emerge application. The chart below summarizes the 2015 trials conducted by Dr. Tom Peters at the Moorhead and Herman, MN locations. The Moorhead trial location was planted early and Herman at a later date.

The blue bar on the far left represents multiple applications of glyphosate alone (66% waterhemp control) compared to the increased control by having a lay-by application of either S-metolachlor, Warrant or Outlook as part of your sugarbeet weed control program. The bars on the right represent the same three lay-by herbicides (applied at the same time as the bars on the left) following an application of S-metolachlor at 0.5 pt/A applied pre-emerge. The effectiveness of each lay-by herbicide, regardless of brand, was increased across both locations and across both an early and late planting date. Make sure you visit with your Agriculturist regarding pre-emerge S-metolachlor use this season - your weed control will always be better if you can start with a clean slate!!!



The product label trumps this information at all times - Always read & follow label instructions
Special Thanks to Dr. Tom Peters (NDSU) for providing information and editorial review of this issue