

2021 SMBSC Adjuvant Use Quicksheet

Adjuvants are spray additives used with a pesticide to increase its performance or to modify specific spray solution properties (environmental, physical, or chemical). They are used in an attempt to address limitations to the spray process to increase the likelihood of the pesticide adequately performing the function for which it is being applied. Adjuvants manipulate spray solution stability, solubility, compatibility, surface tension, off target movement, coverage, adherence and penetration. Several multifunction adjuvants have been formulated in an attempt to perform more than one of these tasks at one time. However, it should be noted that whenever a single adjuvant is attempting to perform more than one function, the potential exists for sacrificing a relative level of effectiveness of one or more of the multi-functions it is being asked to perform.

Herbicide Adjuvants:

Adjuvants utilize specific ingredients to assist herbicide activity in several ways. Many adjuvants increase herbicide activity when applied to crop or weed foliage but not all of them. Herbicide enhancements attributable to adjuvants are too numerous to cover but below you can find a few examples.

Glyphosate has been the basis of many POST spray programs. It prefers non-oil based surfactants (SURface ACTive agENTS), modest acidification, and water conditioners (such as dry or liquid AMS) to incapacitate hard water ions.

Water Conditioner Examples

AMS - Various
Class Act Products - Winfield
Precinct - West Central
Re-Duce - Helena
Sulfate - Loveland
Wheelhouse - CHS

Acidic AMS Replacements

Aduro - Winfield
Brimstone - Wilbur Ellis
Fixate - CHS
Gunsmoke - Loveland
Hel-Fire - Helena
Jackhammer - West Central

Non-Ionic Surfactant Examples

Activator 90 - Loveland
Hypertonic - CHS
Induce - Helena
Prefer 90 - West Central
Preference - Winfield
R-11 - Wilbur Ellis

Ultra Blazer received a Section 18 Special Emergency Exemption Permit in 2021 for POST utility in sugarbeet. Due to concerns over crop response from this herbicide, it is recommended that Ultra Blazer only be applied with the use of a **non-ionic surfactant (NIS)** and at rates between 1 to 2 pints per 100 gallons of water.

- * Glyphosate is antagonized by oil adjuvants. If tank-mixing with an oil-loving tankmix partner, consider maintaining use of a surfactant or consider using a High Surfactant Oil Concentrate or HSOC to satisfy the partner's needs.
- * Products provided as common examples only and in no way constitutes a particular adjuvant class in its entirety.
- * Always consult the herbicide label for proper adjuvant choice when tank mixing with glyphosate.

Fungicide Adjuvants:

Adjuvants utility with fungicides are not as well defined or accepted as with herbicides due to inherent differences in basic functionality and activity of herbicides versus fungicides. It is also more difficult to visually measure the benefits of adjuvants with fungicide applications, which makes justifying their use more difficult. Additionally, the stage at which many foliar fungicides are applied lends itself to greater risk of crop injury, adding to the overall concern over the use of adjuvants in Cercospora leafspot (CLS) fungicide applications.

Adjuvant recommendations for CLS fungicide applications are as diverse as the products available. Their primary focus relates to increased canopy penetration, leaf deposition, and leaf resiliency. Adjuvants can also lead to an increased risk of crop response in the form of leaf speckling with some of our CLS fungicide options. Thus, the potential for increased efficacy with adjuvants must be weighed against user comfort with modest leaf speckling. When making an adjuvant purchase decision, remember that **Deposition-Aids** influence droplet size and generally provide less driftable fines to increase product that reaches the target whereas **Extenders** prolong leaf coverage by reducing washoff.

General Deposition Aids and Canopy Penetrants

MasterLock - Winfield
Crosshair - Wilbur Ellis
Cerium Elite - West Central
Fixate Pro - CHS
Liberate - Loveland

AI Extenders & Retention / Wash-Off Resistance

Reguard - Wilbur Ellis
Transfix - Winfield
Attach - Loveland

- * Wind tunnel droplet spectra data suggest that deposition and extender adjuvants can be used in combination but extenders should not be used without a deposition aid since getting the droplet to the leaf is of greater importance.
- * The lists above are provided only as examples and do not constitute the entire list of a particular adjuvant class.
- * Always consult the fungicide label for the proper adjuvant choice and the adjuvant label for correct mixing order when choosing to use an adjuvant in your CLS fungicide spray program.

Note: Not all adjuvants, deposition aids, or extenders are created equal. Make adjuvant choices based upon specific needs, reputable data, and/or personal experience.