

2020 SMBSC Adjuvant Use Quicksheet

Adjuvants are generally accepted as any additive that is used with a pesticide to increase performance or to modify specific spray solution properties (physical and chemical). They are used in an attempt to alter environmental or physical conditions and/or limitations involved in the spray process to increase likelihood of the pesticide adequately performing the function for which it is being applied. Adjuvants manipulate pesticide spray solution stability, solubility, compatibility, volatilization, 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 an adjuvant is attempting to perform more than one function from a single formulated product that 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 assist herbicide activity in several ways and utilize specific ingredients to perform each task. Most adjuvants increase the activity of herbicides applied to the crop and 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 is 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
Surfate - 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

- * Glyphosate is generally antagonized by oil adjuvants. If tank-mixing with an oil-loving tankmix partner, consider maintaining the use of a surfactant based adjuvant or consider using a High Surfactant Oil Concentrate or HSOC to satisfy the partner's needs.
- ** The lists above is provided only as examples and does not constitute the entire list of a particular adjuvant class.
- *** Always consult the herbicide label for proper adjuvant choice when tank mixing with glyphosate.

Fungicide Adjuvants:

Adjuvant utility with fungicide applications are not as well defined and therefore not as well accepted as their use with herbicides. This may be due to the vast differences in the functionality that they are being asked to perform with fungicides versus herbicides relative to placement, timing, and activity. Weed Science as it relates to weeds being difficult to kill by herbicides and noticeable when not controlled has tended to migrate toward additives designed to improve performance. Whereas fungicide control (or lack thereof) in plant pathological systems is difficult to measure and thus the benefit to adjuvants is more difficult to confirm. Further, the stage at which many foliar fungicides are applied lends itself to greater risk of crop injury thus also playing a role in overall concern over the use of adjuvants in spray applications.

Cercospora Leafspot fungicide recommendations for adjuvants are as diverse as the products available. Fungicide adjuvant recommendations focus on increasing the spray penetration of the canopy, deposition to the leaves, and resiliency or longevity of the product on the leaves. The production risk of crop injury falls upon the producer in many cases and thus, risk of leaf speckling from use of an adjuvant must be weighed against potential for additional efficacy. A general rule of thumb is Dep-Aids influence droplet size and generally provide less driftable fines to increase the amount of product reaching the target whereas extenders prolong leaf coverage by reducing washoff.

General Deposition Aids and Canopy Penetrants

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

AI Extenders & Retention / Wash-Off Resistance

Attach - Loveland
Reguard - Wilbur Ellis
Transfix - Winfield

- * Wind tunnel droplet spectra data as well as logic suggest that a deposition aid adjuvant could be used with an extender but that extenders should not be used alone without a deposition aid since getting the droplet to the leaf is foremost in importance.
- ** The lists above is provided only as examples and does 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.

