Complex Tank Mixtures and Sugarbeet Safety - January-2025

American Crystal Sugar Company

- **The below items are general recommendations on tank mixes and sugarbeet safety. This sheet is an attempt to identify those tank mixes that are typically safe, those that are of concern, or are not recommended at all. These were written in coordination with Dr. Peters, Sugarbeet Extension Weed Control Specialist, based on research and field observations.**
- **Risk of sugarbeet injury can increase with environmental conditions such as warm temperatures and increased humidity, and when sugarbeets are stressed. Changes in these can influence the level of sugarbeet injury severity.**
- **Always read and follow pesticide labels. This document is not a substitute for respective pesticide labels.**

General Recommendations/Notes on Tips & Observations to reduce injury

- **Make applications after 4pm if forecasted highs are over 85F**
- **Reduce or eliminate oil-based additives**
  - Eliminate or reduce HSMOC if using PowerMAX3 and ethofumesate mixed with a lay-by herbicide and Stinger HL since the new glyphosate and Stinger formulations deliver plenty of adjuvant.
- **Use split rates of chloroacetamide herbicides (lay-by)**
  - Split applied rates of Outlook, *S*-metolachlor (Dual Magnum) products and Warrant are safer to sugarbeet than a single application at full rate.
- **Stinger HL**
  - PowerMAX3 and ethofumesate tank-mixed with **Stinger HL** at 1.8 - 2.4 fl oz/acre are safe to sugarbeet.
- **Mustang Maxx**
  - **Mustang Maxx** tank mixed with PowerMAX3, ethofumesate, and lay-by herbicide are safe to sugarbeet.
  - **Mustang Maxx** in tank-mixes that include Stinger HL, PowerMAX3, ethofumesate and lay-by can cause excessive malformation injury. Do not use HSMOC to reduce injury potential.

Safe to use tank-mixtures:

- **PowerMax3, ethofumesate, Stinger HL, lay-by, Excalia, AMS and HSMOC**
  - Prefer a split application of chloroacetamide (lay-by) herbicide
- **Excalia with chlorpyrifos or Mustang Maxx**
- **Quadris with only Mustang Maxx**

Tank-mixes with some concern/caution:

- **Mustang Maxx or Asana +** PowerMax3, ethofumesate, Stinger HL, lay-by, AMS and HSMOC
  - Dependent on environmental conditions and if beets are stressed
  - Consider eliminating HSMOC to reduce injury
- **Chlorpyrifos +** PowerMax3, ethofumesate, Stinger HL, AMS (**Don't use HSMOC)**
  - Ideally would recommend chlorpyrifos as a separate application
  - Dependent on environmental conditions and if beets are stressed
  - Products contribute oil in formulations so do not use HSMOC
- **Quadris with only**: Roundup PowerMax3, Stinger HL and AMS
  - Syngenta does not recommend due to possible phytotoxicity and physical incompatibility, it has been done but not on their recommendation.
  - Do not use a deposition aid as there may be plugging issues

Tank-mixes with heightened concern/caution:

- **Chlorpyrifos** & **lay-by herbicide +** PowerMax3, ethofumesate, Stinger HL, AMS **(Don't use HSMOC)**
  - Ideally would recommend chlorpyrifos as a separate application
  - Split lay-by rates only
  - Beets must be healthy and actively growing
  - 2 to 4 leaf stage beets
  - Wait 1 day and make chlorpyrifos in a separate application if beets are stressed or not actively growing
- **Spin-Aid/Betamix & lay-by** + PowerMax3, ethofumesate, Stinger HL, AMS **(Don't use HSMOC)**
  - Spin-Aid/Betamix rate needs to match sugarbeet growth stage
  - Don't add Spin-Aid/Betamix with treatment if temperatures are greater than 80F
  - Spin-Aid/Betamix may increase malformation damage from Stinger HL
  - Use split lay-by program

Tank-mixes not recommended

- **Quadris:** Do not mix **Quadris** with chlorpyrifos, ethofumesate, Spin-Aid/Betamix.
  - Quadris should be a separate application and timed either 3 days before or after conventional pesticide applications
- **Spin-Aid/Betamix** – Do not mix **Spin-Aid/Betamix** with chlorpyrifos
  - Chlorpyrifos should be a separate application in this instance