Managing marestail in no-till soybeans

Guiding principles of marestail management

• Combination of fall and spring burndown herbicides is most effective. Overwintered plants are difficult to control with spring burndown alone.
• Marestail plants should be dead or dying prior to crop emergence
• Most populations are resistant to both glyphosate and ALS inhibitors (site 2) such as Classic and FirstRate. Populations in some areas are becoming more difficult to control with 2,4-D also.
• There are no POST options in Roundup Ready or nonGMO soybeans, so in-season control depends solely upon use of effective residual herbicides.
• For control after crop emergence, combinations of several residual herbicides are more effective than single active ingredients.
• LibertyLink and Xtend soybeans provide for effective POST options.

Step 1 – fall herbicides
• Soybeans - 2,4-D plus one of the following: glyphosate, dicamba, Basis, Canopy/Cloak, metribuzin
• Corn – 2,4-D plus one of the following: glyphosate, dicamba, Basis, simazine, metribuzin
• Keep herbicide cost less than $10
• Avoid use of other residual herbicides – save them for spring

Step 2 - Spring burndowns – following fall herbicides
• Glyphosate + one of following: 2,4-D, Elevore+2,4-D, Sharpen, Zidua PRO
• Gramoxone (2 to 3 pt) + 2,4-D + metribuzin
• Glufosinate + metribuzin
• Can add metribuzin (0.3 to 0.5 lb ai) and/or 2,4-D to most of these
• Glyphosate + dicamba (Xtend soybeans)
• Elevore, 2,4-D have plantback restrictions

Spring burndowns – no fall herbicides
• Glyphosate + Sharpen/Zidua PRO + 2,4-D + metribuzin
• Gramoxone (4 pt) + 2,4-D + metribuzin
• Glyphosate + dicamba (Xtend soybeans)
• Glyphosate + dicamba + Sharpen (Xtend soybeans)
• Glufosinate + Sharpen + metribuzin
• Metribuzin rates – 0.3 to 0.5 lb ai
**Step 3 – include residual herbicides with spring burndown**
- Flumioxazin – Valor and Fierce products, Surveil, Envive/Enlite, Trivence, Panther Pro, others
- Sulfentrazone – Authority products, Sonic, others
- Metribuzin – various products and premixes
  - equivalent of 0.3 to 0.5 lb ai metribuzin
  - add more metribuzin as necessary if rate in premix is low
- Residual herbicide mix should be more complex in Roundup Ready and nonGMO soybeans due to lack of effective POST options (or in Xtend to avoid POST use of dicamba)
  - Panther Pro, Trivence
  - Metribuzin plus one of following: flumioxazin, sulfentrazone, Sharpen (1.5 to 2 oz)

**Step 4 - Postemergence options**
- Roundup Ready or nonGMO soybeans – no effective POST options
- LibertyLink soybeans
  - Glufosinate - Liberty, Cheetah, Interline, etc
  - marestail plants less than 6 inches tall
- Xtend soybeans
  - XtendiMax, Engenia, FeXapan (plus glyphosate)
  - Apply by early June and prior to R1 stage
  - Risk of off-target movement – see label and other information from manufacturers and universities
- Enlist soybeans
  - Enlist Duo, Enlist One
  - Glufosinate
  - Most effective – glufosinate + Enlist Duo

**Photos:** multiple-resistant marestail surviving treatment with – from left to right – glyphosate alone, ALS inhibitor (site 2) alone, and a combination of glyphosate plus ALS inhibitor.