Kochia Overview & Economic Impact

Kochia is a summer annual broadleaf weed species that is native to Eurasia. Kochia was introduced into the Americas in the late 1800's by European immigrants. Kochia is common in rangeland, pastures, and crop production systems where it has adapted to thrive in semiarid to arid conditions. It is often found along roadsides, ditch banks, railroad tracks, and other disturbed sites. One major control issue for Kochia is its wide window of emergence, it can germinate in low soil temperatures as early as January and will continue to emerge throughout the spring into July. In the fall, fully senesced mature Kochia plants will detach at the soil surface and tumble across the landscape, dropping seeds with each impact, in a wind-driven process that spreads seeds long distances.

To the right, is a picture of herbicide resistant Kochia trail created by a resistant mother plant that was blown across what was previously a barley field. The field was sprayed throughout the growing season, but the resistant Kochia leaves a distinct path of weeds in the direction it traveled.

Resistance to up to four herbicide sites-of-action allow Kochia to escape herbicidal control in several field crops and contribute to crop yield losses. Near-complete crop failure (>90% yield loss) has been reported due to Kochia interference in sugar beets, corn, sorghum, and sunflower.

The extremely high crop yield losses for sugar beets are attributed to a prolific Kochia seed bank year after year and an extremely limited ability to control the weed with chemicals labeled for beets that Kochia has not already created a resistance to.