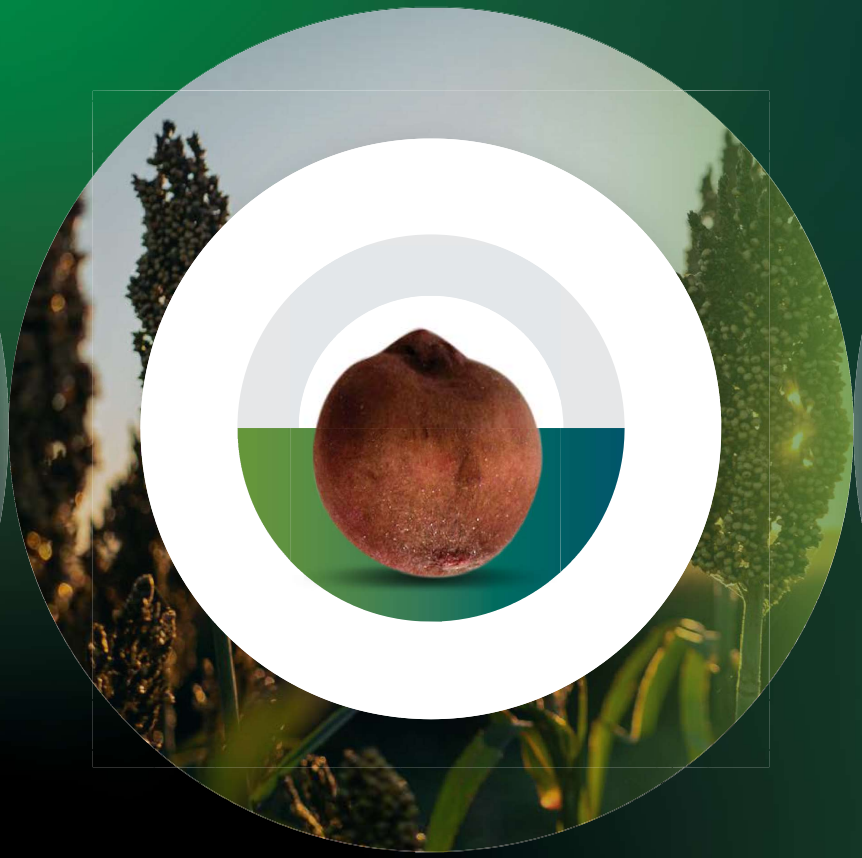


igrowth

A groundbreaking herbicide tolerance technology for maximizing Sorghum yields

Advanta's solution to rampant weed growth

igrowth™ is a herbicide tolerance technology that was developed by Advanta Seeds in Argentina, using mutagenesis methods, which is a non-transgenic technology, so it is not genetically modified.

It has made a game changing difference in weed control to sorghum farmers. With it, Advanta has expanded the reach of its first commercially available, non-GMO herbicide-tolerant technology for grain sorghum and forage sorghum globally.

Weed growth, a major concern!

Grassy weed species can be hard to control due to a lack of chemicals that can be sprayed over the top without causing injuries to sorghum crops. Weed competition is a major cause of reduced yield potential as it competes with the sorghum crops for resources like water and nutrients. Depending on the region, wet or dry season, infestation and weed species, farmers face yield losses up to 70% in extreme cases.

This technology allows farmers to apply registered herbicides at the recommended rates to igrowth sorghum plants without causing damage. If this herbicide were to be applied on sorghum without this technology, it could cause failure or irreversible damage to the crop.

The igrowth technology will allow sorghum growers the freedom to utilize WSSA Group 2 herbicides to assist in their integrated weed control programs and will be particularly useful in controlling some tough to control weeds, like Texas panicum and foxtail.

igrowth™ - a technology specifically for sorghum farmers

With igrowth, Advanta simplifies weed control with the possibility to spray imidazolinones herbicides as either Pre or Post Emergence, thus, reducing weed competition and their usage of water and nutrients preserving these essential resources for the sorghum crop.

igrowth hybrids deliver groundbreaking performance that transforms sorghum cultivation and help realize its true potential with bigger and better yields.

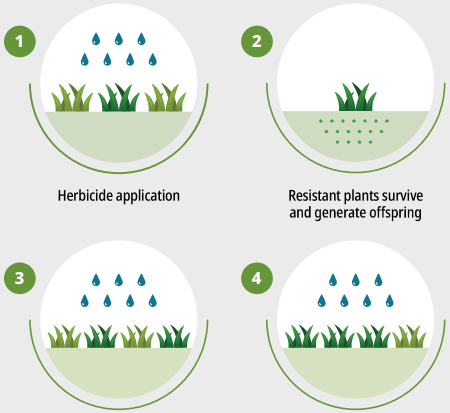
The successful combination of igrowth and top performing genetics has **accelerated sorghum growth** even in the face of unpredictability of weather, weed pressure, and challenging soils.

IGROWTH

Responsible management of herbicide tolerant crops

It is important to **manage herbicide tolerance crops properly** to preserve the effectiveness and value of these technologies for the future. Several agronomic practices are recommended to reduce weed resistance pressure.

How do herbicide resistant weeds develop?



Best Management Practices (BMP) to delay IMI herbicide weeds resistance:

- Continue utilizing existing pre and post-emergent herbicides (e.g. S-metalachlor, Mesotrione, Atrazine), thus reducing the development pressure of resistant weeds and increasing grass and broadleaf weed control.
- DO NOT plant igrowth sorghum in fields known to have ALS resistant johnsongrass or shattercane.
- Rotate to a non-ALS inhibitor herbicide tolerant sorghum variety in the year following planting of igrowth sorghum.
- DO NOT replant igrowth sorghum in consecutive years.
- The grower must observe an 18-month interval between an application of IMIFLEX in one year and the next planting of igrowth sorghum.

Key stewardship rules

1. Start clean – **utilize a burndown herbicide at planting**. The use of a certain herbicide-resistant crop does not limit the grower to using only that herbicide. Conventional herbicides registered for cultivation can and should remain part of the overall weed management system. Just as non-chemical options: crop competition, mechanical weeding can be utilized.
2. **Limit the number of applications of the same herbicide**, or herbicides in the same mode of action, in a single campaign (rotate chemical modes of action).
3. **Always follow product labels for rates and application timings**. Alternate your modes of actions to control hard to control weeds.
4. Always use those herbicides legally registered for use with sorghum seeds and/or sorghum seed containing igrowth technology.
5. Control of igrowth sorghum volunteer plants on a subsequent crop must be done with other herbicides, rather than imidazolinone mode of action (ALS inhibitors). After spraying herbicides, **assess the quality of field coverage to detect possible breaks in control.**
6. If a potential resistant weed or resistant weed population is found, use another available control method to prevent its spread in the field that could also be non-chemical options.
7. It is important to note the **residual period of the herbicide in the soil** for scheduling subsequent crop planting. Pay attention to crops that may be susceptible to imidazolinone-family herbicides.
8. Crop Rotation: Avoid continuous cropping of igrowth sorghum on the same field or any other IMI herbicides family tolerant crop for volunteer control and active ingredient weed control rotation. DO NOT repeat sorghum as a crop in the following year after growing igrowth sorghum. Rotate to another crop that will use alternate herbicide mode of action for weed management and control.