

## Resisting herbicide resistance with integrated weed management | Ask the Industry

Potatoes  
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*Potato crops are susceptible to a range of weeds that can impact crop yield and quality, and as a result require an integrated and planned approach to management. **Syngenta Senior Technical Solutions Lead Scott Mathew** outlines the steps potato growers should take when implementing their weed management program, which involves a combination of crop protection products and cultural practices.*

The benefits of effective weed control are many, including better use of available water and nutrients by the crop, resulting in increased yields and profits. In potatoes, the most critical weed control window is around four to six weeks after planting. Because there are so few herbicide modes of action for use during this stage, the pressure is on to retain the options we currently have.

Limiting the risk of these herbicides developing resistance should be at the top of every potato grower's weed control strategy.

Over reliance on any single herbicide group will not only select for resistance, but may also change the weed spectrum, thereby allowing a more difficult weed or weed species not controlled by that particular herbicide group to become dominant. Weed control strategies should take an integrated and planned approach and not rely solely on the use of chemicals, or any particular chemical group to control weeds.

**Integrated weed management programs should include:**

1. Running the weed seed bank down to low levels prior to cropping. Stopping weeds from setting seed is the key here during the fallow period leading into cropping. This can be done effectively with whatever means growers have available including: broad-spectrum knockdown herbicides; spray-topping or hay-freezing late in the season; mowing/slashing; and heavy livestock grazing.
2. Crop rotation or crop sequencing with pasture or other crops can facilitate easy control of major potato weeds through use of wider cultural practices. Cereal cropping, as well as hay and silage production can set the potato crop up for a great start, providing the weeds are controlled. They can also provide an effective break to help manage important potato diseases.
3. Using broad-spectrum knockdown herbicides or mechanical methods to control weeds just prior to planting is vital to reduce the weed seed bank. Before sowing, form seedbeds and pre-irrigate where possible to encourage weed seeds to germinate to enable the effective use of an appropriate knockdown herbicide application.
4. Avoid sowing contaminated seed or using unclean machinery. Farm hygiene is important, and these are often the most common cause of introduced weed seed.

Once the ground has been prepared and the crop is in the ground, your in-crop weed control options become more limited and will depend on what weeds are expected to emerge with the crop.

Now, your herbicide choice needs to be selective and targeted. In 2014, Syngenta released BOXER GOLD®, as a unique option for selective pre-emergent control of a range of grass and broadleaf weeds in potato crops.

Containing 800 g/L prosulfocarb and 120 g/L S-metolachlor, BOXER GOLD has become an important way to control Annual Ryegrass (including Group A and Group D resistant populations), Barnyard Grass, Nightshade, Capeweed, Fat Hen, Fumitory, Glossy Nightshade, Redroot Amaranth, Summer Grass, Toad Rush along with suppression of Common Thornapple and Fierce Thornapple.

The combination of Group J and Group K modes of action presents producers with a unique mix of active ingredients to help with resistance management and broaden the spectrum of weeds controlled.

Rotate chemical groups and don't rely on any one group. It's better to use one product and do everything possible that gets the best from that herbicide and then move on to another mode of action group. To control weeds that may already have emerged and as a further step to reduce resistance developing, BOXER GOLD can be tank-mixed with SPRAY.SEED® at recommended label rates and timings for knockdown and residual weed control.

Vigorous crops that compete strongly and close the row over quickly will reduce the amount of light reaching germinating weeds making them much less competitive, so pay attention to irrigation and nutrient management.

As a further step, applying a knockdown herbicide or desiccant while the crop is in the senescence stage will assist with reducing weed seed bank in future crops and make harvest easier.

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Products:

Boxer Gold

Spray.Seed 250