Product efficacy is determined by many factors, not just the active ingredients or formulation. To get the best results from post-emergent herbicides, including AXIAL®, environmental conditions, application parameters and herbicide resistance need to be considered.

With the appropriate monitoring of these factors, actions can be taken to minimise their impact on herbicide performance and maximise the result of the application.

1. Environmental factors

When plants are under stress, their ‘vascular’ (transport) system may be impacted meaning herbicides are not transported to the sites of activity in the plant.

All environmental stresses reduce translocation of herbicides, so monitoring that plants are actively growing and recovered from any stress event is the key to maximising the likelihood of successful application.

There are a number of indicators that signify plant health issues. The main indicator is a lack of new growth. Secondary indicators can vary depending on the type of stress. Common environmental stresses include:

- Drought/heat stress
- Cold/frost

In all cases, delay the application of herbicides until such time that the plants – both crop and weed – are actively growing. This will maximise efficacy on the weed and minimise the risk of injury to the crop.

2. Application factors

Application factors can be reduced significantly by taking time out to consider a few different areas. These include:

- Boom height and target/false target
- Application speed
- Nozzles, droplet size and water volume
- Crop stage (shading)
- Weed stage (dose rate)
- Water quality and tank mixes

What to do to mitigate machinery factors:

- Ensure that boom height is correct to deliver double overlap at the height of the Wild Oats (generally 50 cm from the target).
- SST applications may require increased boom height to ensure double overlap at the true
target.

- Choose an appropriate water rate for the canopy size.
- Select a nozzle that will ensure you minimise off-target drift while still ensuring a balanced droplet spectrum.
- If in doubt, check it! Use water sensitive paper to better understand where the droplets are getting to.

**What to do in the case of tank mix issues:**

- If the spray water has a pH greater than 7, an acidifying buffer should be considered.
- ADIGOR provides the most reliable adjuvant option when using AXIAL, but also provides a high level of in tank stability.
- AXIAL will not be adversely affected by high bicarbonates if the spray mix is held for 24 hours or less.

3. Resistance factors

There are two mechanisms of resistance to Group A herbicides: metabolic resistance (which is the more common form of resistance) and target site resistance.

**What to do in cases of Group A resistance:**

- If resistance is suspected, consider the use of a resistance test such as the Syngenta Resistance in Season Quick (RISQ) test to identify the products available that will work in your situation.
- Be aware of the likely patterns of resistance development so that if poor performance from a herbicide is identified, an accurate assessment of the likely cause can be undertaken.
- Use alternative Modes of Action if possible. This may mean the use of pre-emergent herbicides to help prolong the life of in-crop herbicides.

For more information on any of these three factors, download the AXIAL technical guide

[AXIAL Best Use Guidelines - Post Emergent Herbicides](#) 98.23 kb

here.

**Tags:**

axial
pre-emergent
herbicide