

What impact do environmental conditions have on the performance of Velocity® Herbicide?

Rick Horbury – Technical Advisor, Bayer CropScience

Learn how Velocity works, follow the tips and get the best results from Velocity under all conditions.

What the label says: “Optimum performance of Velocity occurs when it is applied in high light intensity situations. To maximise the efficacy of Velocity, apply during the day and at least 1 hour before sunset, particularly if followed by low overnight temperatures.”

If you have used Velocity before you will know that it is very fast acting with leaf symptoms appearing within 2–7 days. The weeds develop blisters or necrotic areas on older leaves, and bleaching and burning on new leaves and at the growing point. Later, destruction of the entire leaf tissue occurs, leading to plant death. This can sometimes occur within 3 or 4 days on small weeds (2 leaf) given warm sunny conditions and adequate application rates but generally takes 14-21 days on a 4-6 leaf plant.

Key points to achieve the best results from Velocity.

- The initial uptake and translocation of pyrasulfotole, a key active ingredient in Velocity, works best when the plant is actively growing.
- Sunshine is an important component in destroying the weed and the higher the light intensity the faster Velocity works.

Pyrasulfotole works in three ways to destroy the weeds.

- 1) Disrupts the energy produced by photosynthesis which restricts the weed's ability to grow.
 - 2) Disrupts vitamin production which restricts the weed's ability to produce vitamin E, which protects the weed against stress, resulting in free radicals destroying the weed from the inside.
 - 3) Destroys the protective layer allowing sunlight to destroy the plant's chlorophyll, turning the weed white.
- Final death will normally occur 20–25 days after application, depending on light, temperature and weed size.

Droplet spectrum and coverage:

- Velocity works best with a Medium spray quality and good coverage from water rates of a minimum of 70 L/ha.
- Trial work has shown coarse droplets at 80 L/ha compared to medium can result in a 10% loss of efficacy.
- Always use with a recommended adjuvant: Hasten® 1%, Plantocrop® 1 %, Supercharge® 0.75%. or Uptake® 0.5%.

So what does that mean under different conditions?

Low light through cloudy overcast conditions:

- Velocity will still work when it's cloudy or low light it will just be slower in activity than you may have observed under high light intensity so dependent on weed size and herbicide rate the weeds could take a few days to a week or more longer to die. It will still burn the weeds down faster and more effectively than most other herbicides.

Tip: If the weed size is on the larger side for the Velocity rate consider raising the rate or using a tank mixture with MCPA LVE, Tigrex® or 2,4-D ester to avoid escapes.

Application late in the day (i.e. within 30 minutes of sunset)?

- Application is recommended at least 1 hour prior to sunset to allow the product to be dry on the leaf and fully taken up by the weed before it shuts down for the day. If this does not occur on a dry warm night followed by a dry sunny morning with no free moisture (dew or rain) overnight then you might be OK with it but for the cost is it worth the risking a poor result?

DO NOT apply when you know there is insufficient time for it to dry on the leaf or results may be poor. Overnight dew or overnight rainfall will wash the product from the leaf before sufficient uptake has occurred, seriously reducing the efficacy of Velocity.

Application early in the day (Before sunrise or at first light)

- Application is recommended once the sun is up for best results, however good results have still been achieved when applying in the early pre-dawn when wind conditions or dust is lower. Ensure you observe the label requirements in relation to not spraying during a surface temperature inversion.

Tip: It is only a viable option to start an hour before sunrise when there is little to no free moisture on the leaf (check first) and the day ahead will have sufficient sunshine for good uptake of Velocity.

DO NOT apply if the dew or rain on the leaves is running as free water as this will carry the product straight off the leaf and control will be compromised.

DO NOT apply in the early morning if you can't be sure there will be a sufficient period before rainfall as the same issues will occur as above and product will wash directly off the leaf before uptake.

Dusty conditions:

- While Velocity will translocate once inside the plant it needs optimal and complete coverage of the target weed for best results. Therefore consider it as a "coverage" herbicide like you would paraquat or Jaguar®.

Tip: Increase your water rates to 80 L/ha or more, add MCPA LVE to assist coverage and reduce ground speed

Disclaimer Always consult the product label for detailed information.

The information and recommendations set out in this document are based on tests and data believed to be reliable at the time of publication. Results may vary, as the use and application of the products is beyond our control and may be subject to climatic, geographical or biological variables, and/ or developed resistance. Any product referred to in this document must be used strictly as directed, and in accordance with all instructions appearing on the label for that product and in other applicable reference material. So far as it is lawfully able to do so, Bayer CropScience Pty Ltd accepts no liability or responsibility for loss or damage arising from failure to follow such directions and instructions.

Jaguar® and Velocity® are Registered Trademarks of the Bayer Group.