

Using Overwatch® Herbicide in dry sowing situations.

Dry sowing is a means of getting crops sown on time in seasons where there is a late seasonal break. Dry sowing has many advantages including spreading the labour requirement over a longer period, managing large planting areas efficiently and optimising crop yield. There is generally very little weed emergence at the time of sowing, therefore knockdown herbicides aren't effective in reducing weed populations which makes selecting the right pre-emergent herbicide crucial for effective weed control.

Bixlozone, branded as Isoflex® active, the active ingredient in both Overwatch® Herbicide and Overwatch® eXL Granules does not readily breakdown in sunlight and has moderate mobility in the soil, moderate binding and is more soluble than most of the other Annual Ryegrass pre-emergent herbicides available. This provides Overwatch® with a major advantage over many other pre-emergent herbicides when sowing under dry conditions.

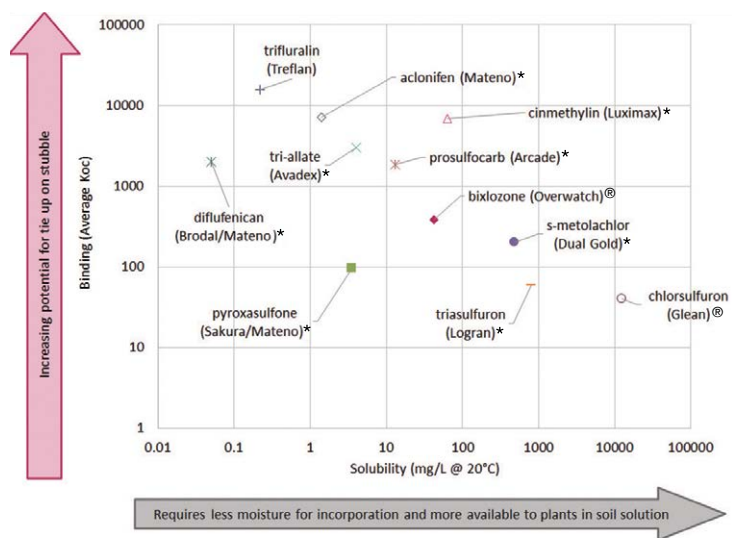
Pre-emergent herbicides vary in their binding ability to both soils and organic material. The sorption coefficient (Koc) is a measure of the tendency of a chemical to bind to organic carbons. The lower the value, the less likely the chemical is to be bound to organic carbon and not available for uptake by the target weeds. Water solubility (Sol) measures the potential of an active ingredient to dissolve in water for movement in soil and plant uptake. As shown below in Figure 1, with moderate binding and moderate water solubility, Overwatch® will readily wash off stubble and require less moisture to be available in soil water solution under drier conditions, compared to those products with a lower solubility. Both desirable traits when dry sowing into a standing stubble.

Overwatch® is most effective when incorporated by sowing into moist soils with sufficient follow-up rainfall allowing the product to move into the weed root zone for root uptake. However, as Overwatch® is predominantly broken down in the soil through microbial degradation, (not photo degradation), under dry sowing conditions it will experience minimal breakdown and will still be readily available for uptake by the germinating weed seed once sufficient rainfall is received. As with most other pre-emergent herbicides, if sufficient rainfall is not received within a few weeks of sowing or due to other climatic or geographical conditions, the level of weed control may be reduced.

Rainfall after sowing is necessary to wash Overwatch® off stubble and incorporate it into the weed seed zone. Trial results have shown that Overwatch® remains very effective in paddocks with up to 50% stubble load ($\leq 50\%$ ground coverage), provided it is washed through to the weed seed zone before weed emergence.

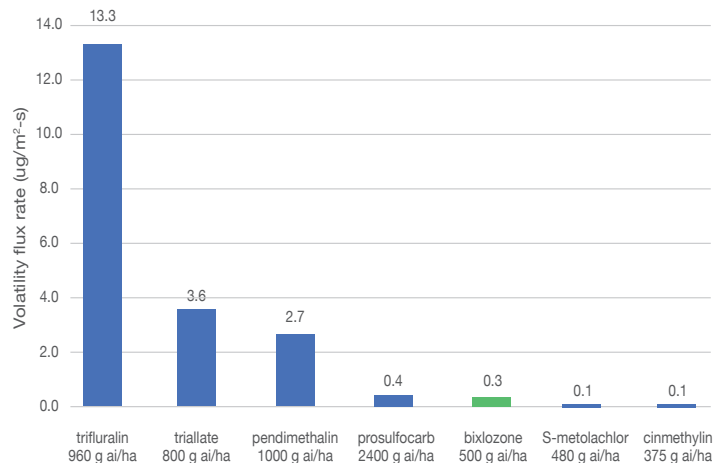
Additionally, with Overwatch® the risk of product loss from volatilisation is exceptionally low. The Volatility Flux (VF) represents the loss of chemical from the applied surface as a gas and is dependent on soil type, application rate and the Koc (sorption coefficient) and solubility. Overwatch® has been tested across a wide variety of soil types and its Volatility Flux does not vary by much, even in sandy soils with low organic matter content. As shown in Figure 2, bixlozone, the active ingredient in Overwatch®, has a much lower VF than many other pre-emergent herbicides meaning under dry sowing conditions, volatility is inherently low resulting in minimal losses and good persistence within the soil.

Figure 1: Behaviour of pre-emergent herbicides used for annual ryegrass control in soil and on stubble



Source: University of Hertfordshire, 2006-2019. Pesticide properties database.

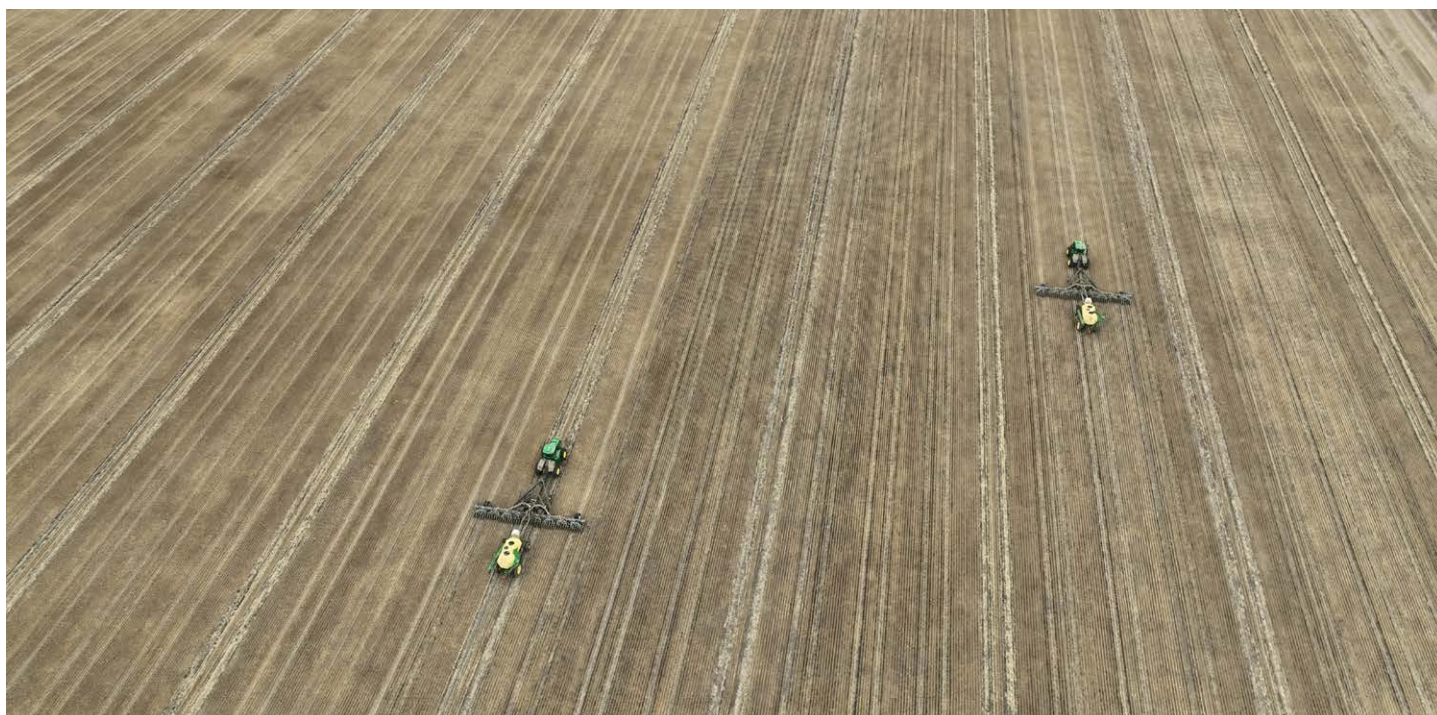
Figure 2: Volatility flux rate of pre-emergent herbicides



Some other factors to consider when using Overwatch® Herbicide in dry sowing situations:

- ✓ Where there is no rain forecast within the next few weeks consider tank-mixing with a herbicide that has different properties such as Trifluralin which works better than some of the alternatives in dry conditions due to its presence as a gas in the soil profile.
- ✓ In paddocks where there is likely to be a high weed seed bank, implementing the [Weedsmart BIG 6](#) could enable you to significantly reduce the pressure on the pre-emergent herbicide this season as well as all future herbicides used across the rotation.
- ✓ In paddocks with a stubble load 30%-50% increase the water rate to 100 L/ha to ensure more product reaches the ground.
- ✓ Dry soil at seeding has a higher tensile strength compared to moist soils. This makes it more difficult for a tyne to penetrate at seeding and can cause a more fragile, less defined furrow. This can impact the seeding depth and level of crop safety as factors such as soil type, high winds, or heavy rainfall can move treated soil into closer proximity with the seed.
- ✓ If heavy rainfall occurs after Overwatch® has been applied to soil with limited organic carbon or low clay content, there may be increased movement of Isoflex® active into the crop's root zone potentially resulting in elevated levels of crop bleaching or damage.
- ✓ Reduced crop emergence and seedling vigour may lead to increased levels of crop phytotoxicity where the crop is stressed due to external factors such as weathered seed following minor rain events between planting and emergence, or where a seed treatment that affects seedling vigour has been applied.

While Overwatch® Herbicide and Overwatch® eXL Granules can be used successfully in a dry sowing situation, every situation will be different and the above points should be carefully considered in order to make an informed decision before proceeding. If in doubt always consult your advisor or local FMC representative.



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