OVERCOMING TRIFLURALIN APPLICATION PROBLEMS

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Introduction

Trifluralin has been used extensively by farmers over the last twenty years. There are, however a number of farmers who still experience problems with the use of this herbicide, principally with the incorporation process.

The following highlights some of the major issues, and how they can be resolved with a little additional care and forward thinking.

What is Incorporation?

The incorporation of a herbicide relates to the thorough mixing of the top fraction of a centimetre of soil onto which the Trifluralin has been sprayed. This thin layer of soil (which contains the herbicide spray) must in itself be distributed through the top 5 to 7.5 cm of soil.

Poor incorporation, whether it be too deep or too shallow, on soil that is too wet or too dry, results in an uneven distribution of the chemical, reduces the effectiveness of Trifluralin and results in poor weed control. The following points are worth noting if problems are encountered with poor herbicide performance.

Wet Soil

If the soil is too wet at incorporation, instead of mixing Trifluralin, it will be layered into ribbons and a large percentage of the top 5 to 7.5 cm of soil will not be exposed to the chemical. The results will be poor weed control appearing as streaks in the direction of incorporation if a tandem disc was used for the operation. In the case of a tyned implement, virtually nil incorporation will take place. Trifluralin will be lost through photo-decomposition and volatility. It is best to wait for soil conditions to dry out.

Dry Soil

Satisfactory incorporation can be a difficult task in dry and fluffy soils. When applied to a dry soil, the Trifluralin is concentrated at or near the soil surface. Since it is contained in a thin band, weeds may still be able to germinate successfully outside of the herbicide band. Due to poor incorporation, the Trifluralin may be also broken down more easily by heat and light.

As a general rule, providing a colour change in the soil can be achieved when incorporating the herbicide, soil moisture levels are sufficiently adequate.

Cloddy Soil Surface

Soil with too many large clods will not allow effective incorporation and distribution of Trifluralin. Large clods that are not broken up before or during the incorporation process may well contain weed seeds, but no herbicide. These seeds can easily germinate and grow when the soil moisture conditions are right. Weed control obtained will be very spotty and patchy where clods are a problem.

Excessive Trash

Trash causes two problems during the incorporation operation. Firstly, the spray is intercepted before it reaches the soil surface and instead of mixing soil with soil, the trash containing the herbicide must be mixed with the soil. This is virtually impossible to achieve.

Secondly, some of the herbicide that contacts the trash is bound and not released for weed control activity, the same affect as reducing application rates.

Overall, poor weed control results when excessive trash is present. Increasing rates slightly (on barley only) may well be a stop gap measure.

Low Soil Temperatures

If Trifluralin is applied in late autumn or early winter, soil temperatures may be very low. Poor weed control may be the result, since Trifluralin relies on a certain amount of diffusion for adequate distribution through the soil. The rate of diffusion decreases with lower soil temperatures.

Wheel tracking

Weed populations may well be higher in wheel tracks. An increased emergence of weeds in these areas may be the result of a narrower band of herbicide in the soil profile, a reduction in the rate of diffusion of the herbicide or the concentration of higher soil moisture levels in wheel tracks - facilitating ideal conditions for germination of weeks.

Transplanted Weeds

Weeds that are actively growing at seeding time may not be controlled by the cultivation activities and/or herbicide operations. Often they are transplanted. It is important that existing weeds be adequately controlled prior to the application of Trifluralin, either by cultivation or the addition of a knock down herbicide as a tank mix with the Trifluralin. Harrowing once the crop has been sown is very dependant upon specific soil and weather conditions.

Trifluralin and Wheat

Trifluralin still remains as one of the most cost-effective herbicides available to farmers. Problems have been encountered when Trifluralin has been applied to wheat treated with the systemic seed dressings such as Armour and Baytan. If you have concerns, look at other options to using Trifluralin. Remember the interaction between the herbicide and the systemic seed dressing are likely to be greater where a shorter coleoptile wheat is grown, and seed is sown into the Trifluralin band.

Nufarm are currently developing a new controlled release formulation of Trifluralin. To date it has proved to be a lot safer on wheat, and has allowed the 7 day waiting period between herbicide application and sowing to be narrowed.

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REMEMBER: BCDS Field Day - 14 September