

Blue Water 2 Project

New life for old chemistry – pre plant use of Trifluralin

Background

Michael Brieffies has recently purchased his 60ha sugarcane growing property and divides his time between managing his property and his off-farm contracting business.



Figure 1 Michael Brieffies in his Q253 plant cane treated with pre-emergent Trifluralin.

Project Involvement

Aim

To trial Trifluralin as a pre-emergent weed control option in plant cane. Trifluralin has not been used widely in the sugar industry in recent years, mostly due to requirements for incorporation. Trifluralin is a cheap pre-emergent alternative that has strong soil binding characteristics.

Site information

The demonstration site was established in a plant cane block on loamy soils at Homebush (Sandy Ck/Plane catchment). The block has a drainage catchment bordering one side of the site.

The strip trial was applied in September 2021 through two different methods of incorporation. Trifluralin was applied broadcast at 3L/ha using a tractor mounted boom spray with AIXR flat fan 110 03 nozzles. At an application speed of 4.5kph and pressure of 300kPa, the total water rate applied was 307L/ha. One treatment was applied just before bedforming and the other just after bedforming and then incorporated with one pass of a wavy disc cultivator.

Findings

When Trifluralin was applied prior to planting, either pre bed forming or post bedforming - pre wavy disc, there was a significant reduction in germinated weed numbers compared to the farmer standard (tillage and Pendimethalin + Paraquat post cane emergence) following the post-plant irrigation event.

Trifluralin applied pre-bed forming was not as effective in controlling weeds compared with an application post bed forming incorporated with a wavy disc. However, both treatments provided a significant level of control out to 10 weeks post planting, which included a number of rainfall events that stimulated new weed germinations across the remainder of the paddock.

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Improved Practices

Based on the outcomes of the demonstration site on his property, Michael is going to utilise a Trifluralin pre-plant strategy in his plant-phase sugarcane as his early weed control option for the 2022/23 season.



Figure 2: Q253 plant cane 10 weeks post planting with Trifluralin applied prior to bed forming.

Water Quality Outcomes

Improved water quality outcomes by switching to Trifluralin pre-plant will be seen as reduced pesticide runoff to the waterway, as Trifluralin is unlikely to leave the treated paddock in runoff water due to its strong soil binding characteristics. It is significantly less mobile than alternative options at this timing. By using Trifluralin as the early weed control option, it should eliminate/minimise the need for cultivation in the young plant sugarcane which will reduce the likelihood of soil displacement from the paddock under adverse conditions.

Achievements

Michael Breiffies made the following comments about the demonstration site.

'Using a Trifluralin application pre-plant is a very attractive option for me based on what we have seen in the paddock. For my system, adding the trifluralin as a pass prior to planting is a more efficient way of getting early weed control because I am already in the paddock preparing the ground, it can be incorporated by the tillage I am already doing before planting. Applying Trifluralin as my residual during the planting phase when I am already planning on being on-farm saves me from worrying about getting my timing right for a spike to 3 leaf application later in the season. Because I work off-farm, it gives me more flexibility with organising my workload. The trial showed that I do not have to go back into my plant cane with any passes until I am ready to profile my beds at late tillering, so I can focus my limited on-farm time at getting other time sensitive jobs done in this period. It is also reassuring to know that Trifluralin is a product that does not pose a runoff risk as I have a number of creeks on my property that I need to be aware of. Trifluralin is not mobile in water, so it will stay where I put it which is better for my weed control and the environment.'