LEADA

Lower EP Farmer Experiences with Stubble Management

Case Studies for the GRDC Stubble Initiative (LEA0002)

It is difficult, if not impossible, to take stock of all the costs associated with every method of managing stubble.

Some management programs focus on significantly reducing stubble and these increase risk and costs at harvest and over summer, but may reduce costs through losses down the line.

Other systems work on retaining all stubble intact and rely on management of the issues around this stubble. These systems cost little at harvest and beyond, but generally require greater inputs at seeding and during the growing season.

The important factor is to figure out what you've got to work with, what you are willing or can afford to change and then to make that system work for you. Examples of totally opposite systems producing similar end results were evident during paddock monitoring undertaken as part of the LEADA Stubble Management project. It comes down to being dedicated to your approach and making the most of it.

Farmer Experience – Mark Modra, Yeelanna

Mark has used an Excell double disc opener system on his seeder for years and believes there are significant benefits of this system on his continuously-cropped Yeelanna clay soil.

At seeding, reduced running costs and increased seeding speed have tangible cost benefits, while the long term benefits of minimal soil disturbance are also important to him. The disc seeder allows Mark to get through heavy stubble at seeding, and this influences his approach at harvest and over summer.

Harvest efficiency with his class 9 New Holland approaches 40 t/hr in 5.5 t/ha crops common for the area. He achieves this as his harvest height is commonly greater than 35cm, significantly reducing the total throughput in his harvester, a feat only practical where follow-up management is planned or, in Mark's case, where a disc seeder is used to sow the following crop.

It is important to Mark to get through harvesting each crop quickly, as he has several properties spread over a large distance. The reduction in harvest risk is a critical benefit of this approach to stubble management.

There are downsides to this system though. Snails are commonly an issue on the calcareous clays of Yeelanna, and Mark's farm is no exception. In order to get optimal seed placement, Mark prefers to keep the tall stubble standing, and seed between the rows. This rules out snail management options such as rolling or cabling, which would only give him a greater challenge at seeding. Instead, he relies on baiting to control snails. While this generally has proven to keep numbers below 20 snails/m2, it comes at a cost and requires fallow management in years where snail numbers get out of control. Generally 10 kg/ha/yr of standard snail bait is required to manage snails in this way.

Mark also reports that the combination of disc opener and large stubble load from multiple years (>10 t/ha) rules out trifluralin as a pre-emergent herbicide option. While his weed numbers are generally under control, the pre-emergent herbicide options left available to him are generally substantially more expensive.

Four years of accumulated stubble reduces pre-emergent herbicide options.

Higher stubble cut increases harvest capacity

Farmer Experience – Eldo & Jason Glover, Yeelanna

Right across the fence, Jason Glover and his father Eldo farm a similar soil type under similar conditions. But that is where much of similarity ends. The John Deere Conserva-Pak seeder Jason uses doesn't have the trash handling ability of the disc machine but Jason swears by it for seed and fertiliser placement and believes the surface left behind channels moisture to where he wants it.

In order to ensure the best seed placement possible, maximum contact for his pre-emergent herbicides and minimal hiding spots for snails, Jason is dedicated to reducing stubble from harvest to seeding. His approach takes some discipline.

Firstly, the Glover's try to avoid reaping in anything less than warm, dry conditions such that all straw taken through the harvester is chopped very finely.

Stubble rolling begins immediately after harvest, again on the warmest days. At the end of the 2015 harvest, Eldo started rolling on the 10th of December. Rolling is undertaken using a SA-built 24 meter wide rubber tire roller towed at 25 km/h, using around 30 L/hr of diesel. In this way the Glovers are able to roll about 400 Ha in a day, at a cost of less than $1/Ha, an operation they aim to repeat at least twice per paddock.

Not only does this approach take dedication, it also increases harvest time, which may lead to extra risk. However, the results are undisputable with substantially less stubble to deal with at seeding. The remaining stubble is easy to sow through owing to its short length, as well as excellent establishment noted during paddock surveys, and almost complete snail control without the need to use bait.

Low stubble cut reduces issues at sowing

Rolling stubble post-harvest further reduces issues at seeding and gives good snail control.