

# Maximising cropping performance through advanced tyne technology

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Farmers wishing to maximise tyne performance should consider critical factors, including the type of machine, time of sowing, machinery modifications and the scale of their operation.

Andrew Parkinson, a Landmark agronomist in Riverton, believes tyne machines are a good option but farmers need to consider their individual situation, pay attention to detail and consider specific machinery modifications to gain the best results.

“I believe there will always be a place for tyne machines,” he said. “There may be farmers who run livestock where the ability of a disc machine to work effectively will always be compromised. The scale of the operation can also influence the type of machinery used.

As long as you can still get the crop planted in a timely manner, tyne machines are still very capable of helping maximise yield. Lastly, the attention to detail required to run a disc machine is very high, especially from a ryegrass control perspective, and with increasing levels of ryegrass resistance to herbicides this may discourage some people from changing to discs.”

Andrew says checking calibrations, reviewing seeding rates, modifying seeders, selecting the right seeder type and advanced agronomy methods can all help maximise tyne performance.



ANDREW PARKINSON.



A TYNE MACHINE REMAINS A GOOD OPTION FOR MANY GROWERS. TO ENSURE OPTIMAL PERFORMANCE IT IS IMPORTANT TO CHECK SEED DELIVERY CALIBRATION, INCLUDING SEED DELIVERY ACROSS THE TOOL BAR, AHEAD OF SEEDING EACH YEAR AND PERIODICALLY CHECK FOR BLOCKED BOOTS AND DISTRIBUTION HEADS.

## Calibration

Growers should check seeder calibration every year, he said, and during seeding check the seed distribution, check for blockages and watch for seed size variation, which can all impact on seeding performance.

“I would advise growers to check for even seed distribution every year,” he said. “Too often we see variations where there are strong and weak rows, so it’s really important to check for variation across tynes along the way.

“Check all the boots. In heavier soils, if you turn too sharply with the machine the tynes can block up. I would always check all distribution heads and boots for blockages.

“Finally, there are often variations in grain size with barley, wheat, pulses and canola from year to year and seed size can affect calibration. Don’t assume that whatever you did last year will work this year. Paying attention to this level of detail can may help your overall sowing performance using a tyne machine.”

## Seeding rates

Weed competition, seed placement, crop type and sowing time all need to be considered when setting seeding rates.

“Ryegrass is one of the main issues for any farmer with any type of machine, whether discs or tynes, so weed competition will play an important role for seeding rates. My advice would be to keep seeding rates up to increase weed competition if you are concerned about ryegrass numbers.”

Confidence in the technology being used is also a factor, Andrew said.

“One of the benefits of advanced tyne technology is that it gives us the confidence to set seeding rates to achieve maximum yields.

“Seeding rates will vary depending on the type of crop (whether a cereal, canola or a pulse) and growers need to set rates accordingly. With advanced tyne machines they have the opportunity to set whatever rates they want to maximise yields.

“Time of sowing will also affect the

seeding rate. These days, many growers sow by the calendar, regardless of a pre-season rain event. A grower who wishes to sow early can drop seeding rates back because soils are warm, vigour is good and plants will set more tillers. With later sowing soils are generally colder, germination slower and vigour lower, which creates less competition and less tillers, so it is advisable to increase seeding rates.”

### Seeder modifications

There are many seeder modifications that can be made to ensure a machine works best for the individual farmer, he said, with the current machine a major factor in any decision about whether to modify or to buy a new machine.

“Some older machines might not have the



ADDING PRESS WHEELS TO TYNE SEEDERS CAN INCREASE THE AMOUNT OF WATER ENTERING THE SOIL AFTER RAIN AND IMPROVE SEED-SOIL CONTACT, LEADING TO BETTER EMERGENCE AND EARLY CROP PERFORMANCE.

under-frame clearance required to allow for effective trash flow, or the frames may not be strong enough to allow for tyne modifications or the addition of press wheels, in which case it might be better to upgrade to a new machine. Most newer machines will allow for effective modifications, which may make the cost of modifications to set the machine up for better performance worthwhile, particularly for producers on smaller acreages who can't justify going to larger air-seeders.”

Modification options include changing or adding points, boots, covering devices such as press wheels, press harrows or rotary harrows, tyne and row spacing variations, trash guards, coulters, the tyne type and mounting system (parallelogram or conventional) and the tyne configuration on the bar.

**Every situation is different. A lot of it comes down to the scale of operation, time of sowing, soil types and machinery configuration.”**

“I have seen a lot of farmers change the boots on their tyne machines to help with seed placement,” he said.

“It really depends on the situation and what the farmer is able to do. For instance, a grower who does not have the ability to effectively spread nitrogen mid-season can change the type of boot to allow for pre-emergent nitrogen placement during sowing.

“Press wheels have been a fantastic addition to seeders, with benefits including water harvesting, seed-bed firming and



A NARROW POINT AND DEEP BANDING BOOT ALLOWS FOR SEED AND FERTILISER TO BE SEPARATED ENSURING FERTILISER IS LESS LIKELY TO CAUSE TOXICITY.

generally improved performance compared to press and rotary harrows.

“One of the potential issues with press wheels is the width. Very wide press wheels and narrow points can create an area on the edge of the furrow which allows ryegrass to grow.”

Growers who plant smaller areas can adequately modify smaller machines such as trash drills, Andrew said.

“Modifications to such machines can include raising the seed box and removing tynes to enable sowing over more rows and increase trash flow. Adding inner springs to tyne assemblies will improve breakout, which is important when direct drilling, and the addition of double cups under the seed box will allow deep banding to reduce the risk of fertilizer



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toxicity. I would also suggest changing to knife points and deep banding boots to reduce soil throw and improve the accuracy of seed and fertiliser placement.”

Tyne and row spacing can also play an important role in determining yield and overall productivity.

“There is a lot of debate about tyne and row spacing. Changes to row spacing need to be carefully considered because they involve a compromise between trash handling ability, weed competition, better pre-emergent chemical placement and yield potential. Arguably, for every 25 mm increase in row width over 175 mm we lose about 1% of yield.

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“Wider row spacing is also not ideal for hay. With wider row spaces there is an opportunity for the windrow to slump down. Feed test quality and colour is important for hay, and as soon as the windrow touches the ground this becomes a real issue for the quality of the hay.

“I think as a general rule, a row width of 225 mm to 250 mm for grain crops is a reasonable compromise between trash clearance and weed competition.”

### Seeder type

Choosing the right seeder type will depend on the scale of operation, soil types and seasonal variations, he said.

“Every situation is different. A lot of it comes down to the scale of operation, time of sowing, machinery configuration and soil types.

“Parallelogram-type designs are as good as you can get for seed placement, but there are issues with this type of machine in different soil types, particularly heavy clays. Some of these machines also have difficulties with blockages in heavy stubble.”

### Advanced agronomy

Using a tyne machine effectively can improve crop safety, weed control and fertiliser placement.

“Ensuring the crop is not affected by pre-emergent chemicals due to soil throw is important for crop safety. Herbicides such as Boxer Gold, Sakura, Avadex and

Terbyne can be used very effectively with a correctly set up tyne machine.

“A narrow point and deep banding boot allows for seed and fertiliser to be separated, which reduces the risk of the fertiliser causing toxicity.”

Andrew advocates that a grower trying to determine what machine and set-up is right for him and how effective his current machine is should talk to other farmers, machinery dealers, agronomist and agricultural consultants about the issues.

“There are a lot of very progressive and innovative farmers out there and my suggestion is to visit these people to see if what they are doing is right for you. You don't have to go too far because the neighbours are probably dealing with the same issues as you.

“A number of the more progressive farming groups and Ag Bureaus are also looking at seeder set-ups and running paddock-scale demonstrations that are well worth a look.”



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