

Improving cotton farm efficiency

As another tough cotton season passes many farmers are wondering where their next big efficiency gain will come from. According to Brendan Williams, Director of gps-Ag Pty Ltd, some farmers are pinning their hopes on improving machinery and labour efficiency. The means for delivering this efficiency has been a change from eight metre wide equipment to 12 metre equipment.

This represents a 50 per cent improvement in efficiency so clearly represents a major advance.

It also represents a 50 per cent reduction in traffic on the farm and so there is less compaction but possibly more severe compaction occurring in the wider spaced wheel tracks. Less compaction should result in higher yields.

The practical ramifications for such a change need careful consideration.

Improved traction and power

Tractor power and traction obviously need to be im-

proved to accommodate the 50 per cent larger loads placed on the tractor. Obviously you will need a 50 per cent more powerful tractor but this presents an issue concerning traction and maneuverability.

How will you get the power to the ground when you have limitations of maneuverability and wheel tracking in furrows? Most farmers have a strong preference for front wheel assist tractors and yet these have limited power and traction capability.

More thorough soil preparation will also help reduce the power requirement, although this extra preparation comes at a cost.

Often a small 4WD tractor might be deemed more suitable for the wider implements although you have issues of maneuverability and autosteer of 4WD tractors. The Accusteer option offered on CNH 4WDs might give more maneuverability but autosteering these tractors is a potential problem. Tracked tractors offer sufficient power, traction and maneuverability.

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Lift capacity

Three point linkage lift capacity required to lift the wider implement is another important practical issue. It's not only the lift capacity of the tractor hydraulics, but the resultant counter balance weight on the front of the tractor is equally important. What can typically happen as a result of lifting the implement is that the front wheels are raised off the ground — losing steering, excessively loading rear axles and it is dangerous.

Again tracked vehicles offer a better solution because steering is never lost. Lift assist three point linkage can help alleviate the lift burden on the tractor as does implements that are closer to the rear of the tractor.

Accurate steering

Issues concerning accurate steering are also significant. Twelve metre wide rigs have the capacity to push the tractor around, although the tractor is being steered, the implement takes control. Preparation like cross ripping before hilling up is of paramount importance.

Technology is also coming to the rescue with systems that can steer the tractor and the implement simultaneously. Steering the implement is the key — preparation can be less (lower cost) and the resultant accuracy is not affected. This ensures the whole farming operation is optimum efficiency (not requiring excessive preparation to accommodate for the wider implement).



The AutoFarm system has a very affordable implement steering option called the AFTracker. Rather than having to duplicate the 2cm accurate GPS receiver on the implement and tractor, the AutoFarm can simply add another antenna to the implement and connect this antenna into the multi-antenna roof array that is on the tractor.

The AFTracker is also proving popular in straightening crooked rows. Typically, straightening rows is not possible by only steering the tractor. So usually farmers need to pull the beds down (two discing) and then cross rip before hilling up. With AFTracker and four metre wide bed former, it is possible to straighten rows without any preparation. This is a huge saving in cost and time.

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