

New kid takes on no-till

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Like many fledgling farmers, Stuart Pope had ideas for change on his family's livestock property near Karoonda.

"I always wanted to reduce our tillage; I was sick of seeing our soil blow away every year," Stuart recalls.

He spent two years at Urrbrae Agricultural High School in Adelaide, where he learnt the principles of no-till. Returning home with cropping on his mind, he found a father resistant to change.

"When I went home and told Dad what I wanted to do he didn't want a bar of it. He was very much into his sheep and definitely had the attitude that the only reason you grow a crop is for sheep feed," said Stuart. "So we parted ways for many years."

From an agricultural point of view, Stuart put the intervening time to good use. He worked as a shearer initially, then took up an apprenticeship as a diesel mechanic with a farm machinery business. He continued as a mechanic for 15 years, working for his brother-in-law at WD Lewis & Co. in Karoonda, a position that kept him touch with farmers and enabled him to see first-hand the potential of farming in the SA Mallee. "As a mechanic I travelled around the district visiting farms and seeing what farmers were doing," he said.

"Some of them were achieving some quite unbelievable things with cropping on the same rainfall and the same soil types as our family farm.

"When Dad decided he wanted to retire I decided to give cropping a go."

"Dad still thinks I'm crackers, but I think he might be coming around a bit."

In 2002, Stuart and his wife Amanda took over the 1,050 ha farm and kick-started their cropping operation with a demonstration Flexi-Coil seeder. Having a brother-in-law in the machinery business once again proving helpful.

By 2004 they had converted to a no-till



STUART POPE WITH DAUGHTER ERIN AND SON JUDE IN A HEALTHY CEREAL CROP.

system and were using their third no-till seeder; a second-hand Flexi-Coil air drill from WA. The previous year they had modified a John Deere 1010 bar to 228 mm row spacing.

They also increased their property size to 1,400 ha during 2004, buying another 350 ha.

Within two or three years Stuart and Amanda decided to increase their row spacing to 304 mm, reducing the number of sowing boots needed – a saving at a time when cash was tight – and the draught, which improved the tractor's towing ability.

Stuart, who decided to make the change after seeing the positive results achieved by a neighbour using wider spacings, has also seen improvements in his system.

"Ever since we converted to 304 mm row spacing the crop has shown a lot more vigour," he said. "It comes through the ground a lot quicker.

"We are also able to get through heavier stubble and keep more soil cover. The

whole system seems to work a lot better."

The wider row spacing allowed the Popes to increase their seeding depth, which has paid dividends in their problematic sandy country.

"When I first went into no-till everyone told me cereals should be placed half an inch deep and that lupins or canola should basically sit on top of the ground," said Stuart.

"We were always running into trouble on our sandy country with crops not germinating. For years we followed advice and planted lupins with 30% of the seed out of the ground. On good ground it germinated without any problems, but unless the sandy soil received significant rainfall straight away the plants just wouldn't come up. So for four out of five years the seed just sat there."

The Popes now sow all of their crops at a depth of 30 to 50 mm, which Stuart believes provides the best access to moisture in the sandy soil. From his observations this sowing regime has increased crop

germination from 50% to 80% on sandy parts of the property.

The conversion from livestock to cropping presented challenges. The main obstacle was a high population of grass weeds. "We probably underestimated how high the grass weed problem was," said Stuart. "There had never been any grass control on the property, no spray topping or anything like that, so the seed bank was quite big."

Stuart and Amanda retained livestock on the farm until 2007, using pasture phases in their rotation to reduce grass weed levels.

"I didn't want to get rid of the sheep until we had mostly got on top of the grass and I think we did that reasonably well," he said.

"We tried to manage the natural medics that were there and thankfully the farm had quite good medic stands, so once we got on top of the grass they really flourished. We started to see some improvement then."

Their grass reduction strategy involved using a grass selective herbicide early in the growth phase targeting as close to 100% grass kill as possible. This was

followed by a knock-down herbicide later in the season, which Stuart says worked well.

Another part of their grass weed strategy included planting vetch as a brown manure crop, followed by canola; an approach that produced some outstanding results, said Stuart.

Their most recent weapon is herbicide-tolerant Clearfield wheat, which they are using for the first time this year.

"The Clearfield varieties are very helpful. I think they'll be a very good tool as long as we don't abuse them," he said.

"Previously, if we wanted to plant a cereal crop after vetch and canola we had no cheap option to take grass out of the cereals. The Clearfield varieties are relatively inexpensive compared to what they were a couple of years ago, with seed costs now about \$10/ha instead of \$30.

"It just gives us another control measure and the more methods we have, the more sustainable we're going to be."

The Popes are also focussed on managing summer weeds, including melons, caltrop, fleabane and volunteer cereals. Summer

weed control extends into autumn. "If we let the weeds get big prior to seeding we end up with a lot of root disease in the crop. Our weed control starts in the harvest period and goes right through to seeding to try to keep the paddocks as clean as possible."

They have also entered the next phase of their no-till evolution, buying a Morris seeder they used for the first time this year. They invested in a liquid fertiliser cart at the same time, allowing them to apply trace elements and fungicides in-furrow.

"We don't really know what to put it down to, but we've got better results on sand this year. There's a more even germination and healthier-looking plants at this stage."

Stuart and Amanda's cropping operation is 10 years old and they are optimistic about their farm's future, even if the former proprietor remains dubious.

"Dad still thinks I'm crackers," reveals Stuart, "but I think he might be coming around a bit. He does show his old friends around the place every now and then, so obviously he thinks something is going right."



AN IMPRESSIVE STAND OF NO-TILL CANOLA IN FULL FLOWER ON THE POPES' PROPERTY NEAR KAROONDA, IN THE SA MALLEE.