

## MAINTAINING PROFITABLE FARMING SYSTEMS WITH RETAINED STUBBLE

### Matt & Sam Dart


PHOTO: SARAH CLARRY

### SNAPSHOT

**Property:** Felix Farm

**Operators:** DB Ag, of which Matt and Sam Dart are unit holders.

**Location:** Aria Park, NSW

**Farm size:** 1250ha

**Annual rainfall:** 450mm

**Soils:** Red chromosols

**Soil pH:** 5-5.2

**Enterprises:** Wheat, canola, grazing oats + vetch (sown together), lucerne, sheep

**Equipment:** Serafin Ultisow single disc seeder (Steiger STX425 tractor), Goldacres 6500L 30m boom spray (Massey Ferguson tractor), Landaco spreader (Case Puma 165 tractor), Case Class 8 header.

**Left:** Matt changed from a knife point press wheel to a disc sowing system in 2011. **Above:** Sam, Sophie, Zac and Matt Dart at home on Felix Farm.

# Building on strong foundations

**A disciplined and future-focused management approach is underpinned by a strong historical commitment to full stubble retention on DB Ag's Aria Park property, managed by Matt and Sam Dart.**

With his father retaining stubble back in the 1980s, Matt Dart has never known anything other than full stubble retention. He grew up on the lighter soils of the Merriwagga region and in that low rainfall environment with lighter crops, burning wasn't needed to get the machinery through.

"My father was big on maintaining stubble," Matt says. "He believed, as do I, that it will fundamentally improve the soil over time."

Matt and his wife Sam farm 1250ha

at Aria Park, west of Temora. The property, Felix Farm, is part of the DB Group of properties, with Matt and Sam both employees and shareholders in a unique and emerging business model (see Breakout 'DB Group' page 4). They crop wheat, canola, a grazing oats-vetch mix, and lucerne, and run 1850 Dohne ewes with White Suffolk and Poll Dorset over.

With the benefit of having witnessing his father's stubble retention journey first hand, when Matt came to Felix Farm in 2002, he already had many years of

experience thinking about how to manage stubble, what worked and what didn't.

"My Dad tried incorporating stubble for a while," Matt says. "But he found it was destructive to soil structure and drying on the soil profile, and was not augmenting the microbial activity the way he hoped. We needed to let the stubble break itself down into the soil."

When Matt bought the property from Graeme and Jenny Haddrill, the previous owner's approach was part of the appeal.

"Graeme believed the same things we



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Matt & Sam Dart



Wheat stubble pre and post sowing.

did. He went to direct drilling and stubble retention in the 1980s. You could put a hat over the number of times that stubble has been burned on this farm," he says.

Matt acknowledges that burning stubble is a practice that research indicates has some merit. But, he says, their practices show that you can have viable business farming using a different method, and neither is right or wrong.

"Because we have no stubble treatment, we are able to do more. We're not burning, mulching, Kelly chaining, speed tilling... all the operations people use to get rid of their stubble," he says. "It removes an operation and there's a cost-saving as a result."

For several years now, Matt has been running K-Line rolling disc harrows behind his Ultisow seeder, to speed the breakdown of the organic matter

and reduce the volume of stubble for subsequent operations.

"In previous years prior to using the harrows on all treatments, if we had a dry spring we would have problems with inter-row sowing," Matt says. "We ended up with two lots of stubble to get through: on 300mm centres, there was stubble every 150mm... that's a lot of stubble!"

"Whereas we are dealing with just one lot; even if last year's stubble didn't break down, it's on the ground and doesn't become a barrier to getting the disc machine through. We sow at 12kms an hour with a 50-foot machine. We can average 250 hectares a day."

### WEED MANAGEMENT

When full stubble retention is the goal and burning is off the table as a strategy, weed management and herbicide efficacy

become more problematic.

"We have limitations, definitely," Matt says. "If you want to be 100 per cent cropping, you can't do it, because you're going to need to get in the soil for trifluralin or some type of soil-bound residual."

To work around these limitations, all the properties in the DB Group portfolio, including Felix Farm, have a fallow phase.

"We take the view that 100 per cent cropping is not for us, so we have both sheep and a fallow phase in our systems," Matt says. "You just cannot rely on in-crop activity in any system. It will get you in the end."

In the fallow phase both traditional long fallow is utilised along with a strategy of sowing legume crop such as lupins, that are sown and brown manured. This is an attempt to refresh organic nitrogen levels

Sowing a fallow paddock. By fallowing in through the summer and controlling weeds, moisture is carried over into the next cropping program.





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Matt & Sam Dart

along with weed control and moisture retention. Also to support the livestock enterprise both perennial and annual legume pastures are utilised. These consist of lucerne and vetch respectively which fill feed gaps, augment weight gain and allow alternate weed control strategies. This strategy along with a diligent summer weed control program allows what moisture that is present to be utilised.

There is flexibility in this approach that is guided by the season.

"Last year, there was vetch sown at Merriwagga that was to be sprayed out as a brown manure crop, but we got huge amounts of July and August rain, so we made hay with it," Matt says. "It went three tonne to the hectare and we left it quite long to maintain cover out there, because with those light soil types, you don't want it blowing away."

"So we got our weed control, and although we did lose some moisture, we fixed nitrogen and sold all the vetch hay that we didn't keep for ourselves, so it turned out to be quite financially rewarding."

When the season is conducive, they will harvest the grain legumes, but this option doesn't help the chemical spectrum.

"You still need a fallow phase," he says. "It's one of the restrictions of stubble retention, there's no doubt about that."

Grain legumes crops may be an option for those who are 100 per cent cropping, but for Matt, the combination of a fallow component and a grazed out vetch is a better option.

Because of the history of Felix Farm – a former sheep stud where Wimmera ryegrass was sown for pasture – there is now too much resistant ryegrass to manage by a conventional chemical rotation. Trifluralin is no longer an option; even if resistance wasn't an issue, trifluralin is not soluble and not recommended for use with single disc seeders such as the Ultisow.

Instead, pre-emergents such as Sakura® and Boxer Gold® have proven to be excellent options because of their solubility, and while Matt acknowledges they are expensive, he adds, "They're not expensive if they work."

"Boxer Gold® has a post-emergent label now, so it's a great tool for us," Matt says, "but we have to use it in a split application. Using a full rate of Boxer with the disc will cause it to slide, and pushing it down into the slot on wet soil causes quite a lot of damage. But with one half

up front and one over, it's fine."

This approach means Matt is not building up resistance, because when he is in a fallow phase, every one to four years, he does a double knock with Roundup® (glyphosate) and Gramoxone® (paraquat).

"It's a bit more expensive, but it works," he says. "If you're trying to 100 per cent crop and sow through everything using herbicides, the weeds will get you in the end. Eventually we had windmill grass, ryegrass, radish, rough poppy and fleabane. We had weed burdens that no amount of chemicals was going to kill. It was time to break the plough out."

Weed control, as well as disease resistance, also figure in the decisions Matt makes about which canola varieties to sow.

"We grow all Clearfield hybrids and we're using Intervix® as our residual chemical. We've moved our Groups Bs to canola and have limited their usage in wheat," he says.

"To manage disease, we have reasonably structured rotations. Our tightest rotation is canola every three years, but I have 500m buffers and work with my neighbours to ensure we're not sowing canola together. A fence is not a magic barrier against disease."

Dohne ewes and lambs. Matt sits on the sheep CRC Advisory Board and employs lifetime ewe management on the farm.



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## FARMING APPROACH

Matt says the greatest change he has made in his approach to farming over the years has been the move to block farming.

In the mid-2000s, the drought provided them with a huge natural break. The farm, Matt says, was a clean canvas.

"The crops had died two years in a row. We had no history that was preventing us from changing the rotations, so we took the opportunity to zone the farm," he says.

The farm was on a four-step rotation in those days, where Matt was rotating out of lucerne every three years. This changed with the decision to go to a three-step rotation and permanent lucerne.

Matt says, "I was pulling out lucerne after three years that was still highly viable.

These days I clean and mulch them, look after them, and I've now got lucerne stands here that are six years old."

"Block farming has made such a difference to ease of management for rotations and weed control. For example, I would no longer have a sensitive crop like canola in the middle of wheat, because of restrictions on spraying a chemical like MCPA."

For Matt, the years spent refining and simplifying his operations, combined with the economies of scale that being part of the DB Group provides, has improved efficiencies across the board and made him a better manager.

"It's brought in a lot of discipline, and that has helped a lot."

## MORE INFORMATION

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## DB Group

Matt and Sam Dart are owners and employees of the DB Group, a shared equity model business that was formed through the merger of a number of family-run businesses and individuals in south-western NSW. DB Ag operates farms at Caragabal, Aria Park, Currawarna, Mirrool, Binya and Merriwagga.

The farm machinery – headers, seeders, spray rigs, spreaders, etc. – is owned by the business, as are the sheep, chemicals and fertilisers. The trust is a central entity and leases the farms. Sam and Matt own farms that are leased to the business, so they are investors, and Matt is paid a salary and shares in the business profits. In addition to the business owners, there are two independent board members – an accountant and an agronomist – who contribute to strategy and governance.

DB Group formed in 2008 and other business unitholders include Dave and Al Burcham; Dan, Tina, Stephen and Mel Cooper; and Richard and Trudie West.



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