

Powering up pastures after drought

Producers on the NSW Northern Tablelands have new productivity-boosting strategies to improve pastures following drought.

An MLA-funded Producer Demonstration Site (PDS) is being run by the Northern Pastures Group and the Glen Innes Natural Resources Advisory Committee (GLENRAC) to guide producers to develop pasture improvement plans.

The project is run by Lu Hogan of the University of New England and Alex Ball of Rural Analytics. As local producers themselves, they have a first-hand understanding of how previous droughts have left many pastures in the region severely degraded or beyond recovery.

"We could see how pastures had changed in terms of productivity and performance, and we were two of many producers wondering how we were going to restore our feedbase," Lu said.

"The need to have a pasture plan which not only improved the current state of our on-farm productivity levels, but was also cost-effective was paramount."

Weeds and soil constraints

An early focus of the PDS, which began in 2021 and runs for six years, was weed control and, in some cases, soil constraints.

"For many of our producers involved in the program, spraying out old pastures and fodder cropping has proven to be effective for managing weed control," Lu said.

"It's often thought that a long period of fallow and weed control with no financial return is required prior to sowing pastures in the New England. However, we found this preparation phase can provide greater economic returns than originally thought."

See case study below for more details about the return on investment of pasture management strategies.



Corn silage sown at Bridgewater before harvest.

Corn silage provides cost-effective fodder

Following the drought that stretched across the NSW Northern Tablelands in 2018–2019, many producers in the region went on the hunt for cost-effective ways to replenish and improve pasture conditions.

John and Caroline Chappell, who were among those impacted by the drought at their Dundee property, found the answers when they hosted an MLA Producer Demonstration Site (PDS), run by Northern Tablelands Pastures Group – see story above.

In 2020, a 23ha paddock sown with lucerne and brassica on their property,

'Bridgewater', was chosen for the PDS, with plans to re-sow the area with lucerne.

However, the following spring, Chilean needle grass was discovered in the trial paddock, and the need to control it became just as important as replenishing fodder reserves.

"After seeking advice from an agronomist, we made the decision to sow corn for

silage as it provides a range of options for chemical control of broadleaf weeds and grasses pre and post-emergence – that would not have been possible if lucerne had been sown," John said.

Harvesting rates

Prior to sowing, feedlot manure was spread across the paddock at a rate of 22t/ha and glyphosate was sprayed twice.

After sowing in November, DualGold® and PrimeextraGold® were applied for post-emergent weed control.

"Unfortunately, we saw 452mm of rainfall during the summer of 2021–2022 which made the weed control less effective," John said.

"As a result, approximately 2ha of the paddock could not be harvested."

Contractors harvested the corn in late April 2022 before delivering it to the on-farm silage pit, where it was rolled and inoculated.

This process:

- improves fermentation
- reduces the chances of major spoilage
- prevents nutritional loss
- keeps silage fresh for as long as possible in the pit
- significantly reduces secondary fermentation (heating) when the silage is fed out.

Winter action

Lu said winter is the ideal time for producers to start considering a pasture plan in preparation for spring.

Here are her three tips for this time of year:

1. Use the winter period to take soil samples and analyse the current state of your pastures.
2. Seek advice from your local agronomist about weed spraying and soil preparations – this is an essential part of planning before you commence a pasture improvement program.
3. Consider your livestock production goals as well as future climatic impacts – especially those which are likely to occur in spring – when choosing pasture species.

Monitor forecasts

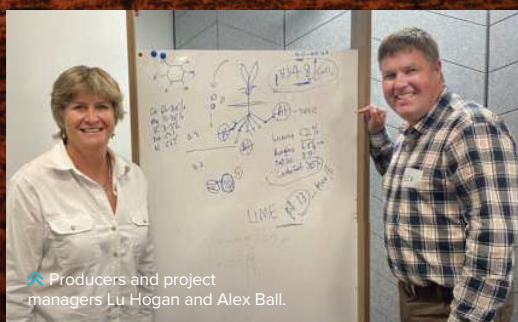
Last year, the PDS host farms experienced extremely wet conditions following the

drought – this resulted in weed control becoming ineffective, and seed loss due to waterlogging.

“When it comes to planning your program, keep an eye on the medium to long-term weather forecast,” Lu said.

“If producers are heading for a prolonged dry period, they need to ensure they’ve got adequate soil moisture before sowing.

“If a wet period is predicted, producers will need to consider holding off on spraying and sowing until a dry window appears.” ■



Producers and project managers Lu Hogan and Alex Ball.

SEASONAL ACTION PLAN

- 1 Take soil samples to assess what's happening under the surface of your paddocks mla.com.au/healthy-soils
- 2 Monitor seasonal forecasts to help determine sowing times with bom.gov.au
- 3 Seek advice from your local agronomist, vet or livestock advisor to determine what your pasture needs.

Crunching the numbers on corn silage

The total cost of silage delivered to the pit at ‘Bridgewater’ was \$67/t wet and \$168/t dry assuming 40% dry matter. Here’s a closer look at the economics of producing the corn silage.



Growing costs	\$/ha
Feedlot manure – spread	\$648
Pre-crop glyphosate x 2	\$115
Disc paddock x 2 (contract)	\$132
Seed, sowing and post-emergent chemical	\$522
Subtotal	\$1,417
Ensiling* costs	\$/ha
Plastic	\$99
Fuel	\$106
Chop, transport and roll	\$818
Inoculant	\$159
Subtotal	\$1,181
Total cost per ha	\$2,598
Total cost per wet tonne ensiled	\$67
Total cost per estimated dry tonne ensiled	\$168

*The process of preserving fodder

Yield

The Chappells harvested 900t of corn silage, which represented a wet yield of 39t/ha over the area sown.

Corn silage can yield up to 22 tonnes of dry matter per hectare (t DM/ha) at 40% moisture – this paddock yielded 15.6t DM/ha.

Following harvest, the paddock was sprayed with glyphosate and direct drilled with annual ryegrass, brassica and clover as a short-term fodder crop.

Feedbase potential

Although John and Caroline’s corn silage has not been feed tested, as a rule of thumb, corn silage:

- normally provides 10MJ/kg DM of energy and 7.5% crude protein
- is high in phosphorus and potassium which:
 - › builds bones
 - › metabolises fat, carbohydrates and protein
 - › increases feed intake
 - › improves reproductive performance.

The corn feed will be tested this winter period when more of their herd begin grazing on it. ■

SNAPSHOT



JOHN AND CAROLINE CHAPPELL,
‘Bridgewater’,
Dundee, NSW



AREA
1,400ha

ENTERPRISE
320 Angus cattle and
2,000 Merino ewes

PASTURES
Native and improved fescue,
ryegrass, cocksfoot and clovers,
plus some fodder cropping
with lucerne, brassica, ryegrass,
oats and corn silage

SOIL
Range of granite soils

RAINFALL
825mm

