# Bronte Farm achieves x5 greater yield than dryland with N-Drip

| Crop | N-Drip | Dryland |
|---|---|---|
| Cotton | **7.42 ba/ha** | 1.45 ba/ha |
| Barley | **3.2 MT/ha** | 0 MT/ha |


Peter Birch, at his farm (Photo: Elka Devney for The Land)

## At a Glance

**Grower**
Peter Birch,
in partnership
with Boolah Farms

**Cropping area**
Total: 140ha
N-Drip: 96ha
Dry land: 44ha

**Crop**
Summer 2022/2023 -
XtendFlex 3141 cotton
Winter 2023 -
Planet barley

**Water source**
Basic landholder rights allocation stored in a surge and a dam

## Background

Bronte at Pallamallawa in north-western New South Wales, Australia, is farmed by Peter Birch in partnership with Boolah Farms. In addition to farming, Peter is also a highly-regarded agronomist and successful businessman. In 2023, he was awarded the Service to Industry Award by Cotton Australia for his services and contribution to innovation in the Australian cotton industry.

## Challenge

The Bronte property has a limited water source from its dam, and the existing old flood irrigation system was extremely inefficient, mainly due to high slopes and changing row lengths. Peter was looking for an irrigation system that would enable him to control water use application rates, whilst also using the available water as efficiently as possible.

## Solution

For his summer crop of cotton, Peter decided to install N-Drip's innovative irrigation system on 96 hectares of the 140 hectares at the farm that was designated as dryland. The N-Drip system operates efficiently providing a cost-effective solution with precise irrigation capabilities, ensuring that just the right amount of water gets to the crop.

## Results

### Cotton

Even with late installation of the N-Drip system due to ongoing wet conditions at the end of December, Peter was delighted with the performance of the crop.

> "We had forgone some of the top end yield by the time the system got going, but we are happy with the average of 7.42 bales per hectare picked, given our dryland cotton averaged just 1.45 bales per hectare. With only 3.3 megalitres of water per hectare used as a supplementary irrigation solution, achieving a water use efficiency of 2.25 bales per megalitre, this was a great result."

### Planet barley

Following a successful cotton season, 96 hectares of Planet barley was planted in the first week of June. This was a great bonus, as usually the land can't be used for back-to-back growing and lies fallow until the next summer season. However, thanks to N-Drip's efficient water use, the field could be sown immediately after the harvest, using the same infrastructure and drip lines.

Despite a dry and warm winter growing season with supplementary rainfall of just 40mm and a very low starting sub soil moisture profile, only 160mm of irrigated water per hectare needed to be applied to the field. The Planet barley yielded 3.2 metric tonnes per hectare, at 9% protein with a water use efficiency of 2 metric tonne per megalitre – an excellent result, especially compared to the dryland barley which failed to produce a crop at all.

## Looking Forward

Depending on the available water in the dam next summer season, Peter plans to expand his N-Drip irrigation system by an additional 70 hectares, where he will continue to rotate cotton and cereal crops. Being able to readily add irrigated areas to the existing infrastructure will significantly increase Peter's ROI, while also allowing more sustainable rotational practices.

> "Given that our first summer and winter using N-Drip were abnormally hot and dry, we were really fully irrigating with the new system, rather than supplementary irrigating as planned. In the future, our preference will be to have a good moisture profile to start the crop and use the N-Drip as a true supplementary irrigation tool. I believe that, with a normal start date and full irrigation season, we can expect to pick 9-10 bales per hectare with the N-Drip system."

14572 02/2024