

Optimising rotations with Mungbeans

The IREC Field Station at Whitton is where they road test new irrigation layouts, new cropping systems, new products, new gear and sometimes revisit old crops and old systems with new technology applied. Everything that happens at the field station comes from the suggestions made by IREC members in their annual survey.

At the IREC field station, they endeavor to keep plants actively growing for as many months of the year as practicable. This report follows the Optimising Irrigated Grains focus paddock which looked at winter crop of barley followed by summer crop of mungbeans in 2020-21.



PRACTICAL LESSONS

from
IREC Field Station



Mungbean is a summer pulse crop grown in Queensland and northern New South Wales. Taking about 100 days from sowing to harvest, mungbeans are a quick cash crop that fits nicely into the rotation for northern growers where they have two planting opportunities—spring and summer.

Across the site, winter crops were planted in autumn 2020. Summer crops for 2020–21 were planted off the back of the actively growing winter crops of barley and green manure mix.



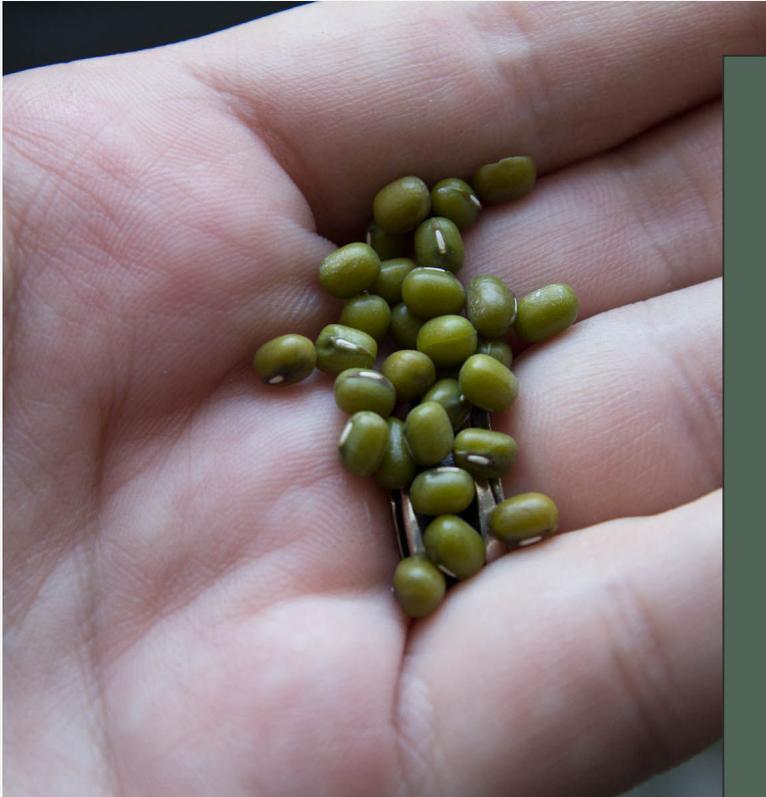
In 2021 Mungbean yield at the field station was disappointing, but much was learned about growing the crop.

- Short season crops like mungbeans (90 days) cannot suffer any setbacks, such as poor drainage.
- One metre spacing was too wide for mungbeans. The plant population was too low for a plant with poor stem strength. The crop fell into the furrows and late summer rains reduced grain quality.
- Strong, standing stubble is essential for mungbeans. The volume of lodged barley stubble in furrows restricted drainage to the detriment of mungbean crop, and barley grain on the ground contaminated the mungbean sample.
- Drainage is king. Clean paddocks and furrows are critical in surface irrigated systems.
- Maintaining winter crop stubble provided a good mouse breeding environment.
- Yields of 3 t/ha are possible for mungbeans in a favourable year and 2 t/ha crops were achieved in the Murrumbidgee Irrigation district.



"New research has shown improved agronomic and irrigation management could increase the yield potential of mungbeans to 2.6-3.0 tonnes per hectare"

Key Messages



Barley – Winter 2020

One of the aims of the Focus paddock was to assess the role of barley in a double cropping system with mung beans. There are good marketing opportunities for mungbeans. While the crop is low cost to grow, it is high risk for getting a good result.

Barley was planted on 1m hills on a pipe-through- the-bank layout. The crop grew well but lodged heavily. A substantial amount of grain remained on the ground after harvest, contaminating the sample of the subsequent mungbean crop.

The extent of lodged barley and residue laying in the furrow affected watering up and drainage for the next crop. Irrigation water could not run down the furrows and instead went over the tops of the hills, so the system did not operate as raised beds should.

Mungbeans– Summer 2020–21

Opal mungbeans were sown at 1m spacings into full stubble on hills, using a cotton planter.

The field was pre-irrigated and the crop was sown into moisture. After sowing, watering took 15 hours to get through the layout but establishment was satisfactory. The crop grew well through summer.

Growing season rainfall was satisfactory but 2 in- crop irrigations were required. Poor drainage caused waterlogging and the crop didn't flower well.



[Watch the mungbean harvest](#)



The optimising irrigated grains projects are part of the GRDC investment in ICF1906-002RTX: Facilitated action learning groups to support profitable irrigated farming systems in the northern and southern regions