Continuous wheat – continues to get better!

Take Home Message

A closely-monitored paddock in the Charlton district has been in wheat for the last seven years.

- Continuous wheat can be successfully grown.
- Stubble has been burnt to reduce the incidence of Yellow Leaf Spot in the following crop.
- In most years the crop has been direct drilled.
- Disease levels are still low and the crop is checked at flowering every year for root diseases.
- Continuous wheat has been relatively low risk – after seven years it has not failed (except for in the drought year of 2002).
- Thus far there is no problem with grass weeds or soil borne diseases.

Wheat has been easy to grow, maintenance has been low and the return on capital has been on average 22%.

What happened?

A paddock in Charlton has been in continuous wheat for seven years (since 1997). Prior to that, it was in canola (1996) and field peas (1995). The paddock was leased for five years and all operations were contracted. Since 2002 the owner has been farming the paddock but all operations are still contracted. In the drought of 2002 the crop failed and was sprayed out in September of that year. In most years the crop was direct-drilled (single pass operation for urea, P fertiliser and seed); however during the drought the paddock was cultivated to stop it from drifting (to reduce the risk of wind erosion).

The variety of wheat sown over the last 5 years has been Krichauff – it has performed very well and has been disease free until last year. In 2003, a few hot spots of stripe rust were found but the crop was not sprayed with a fungicide and the disease did not spread beyond the hotspots. Thus far there have been no serious soil-borne disease problems except for low levels of Fusarium (Crown Rot).

Yields have been excellent and equivalent to other wheat yields in the same locality (Figure 1). The surprise of continuous wheat has not been the yield (we expected that we could grow continuous wheat) but the maintenance of quality. Protein levels have been maintained or even increased over the last seven years; in 2003 the protein was 12.5%. N fertiliser rates have not been excessive (no N in 2003 following the drought in 2002 when 50kg N/ha was applied at sowing).

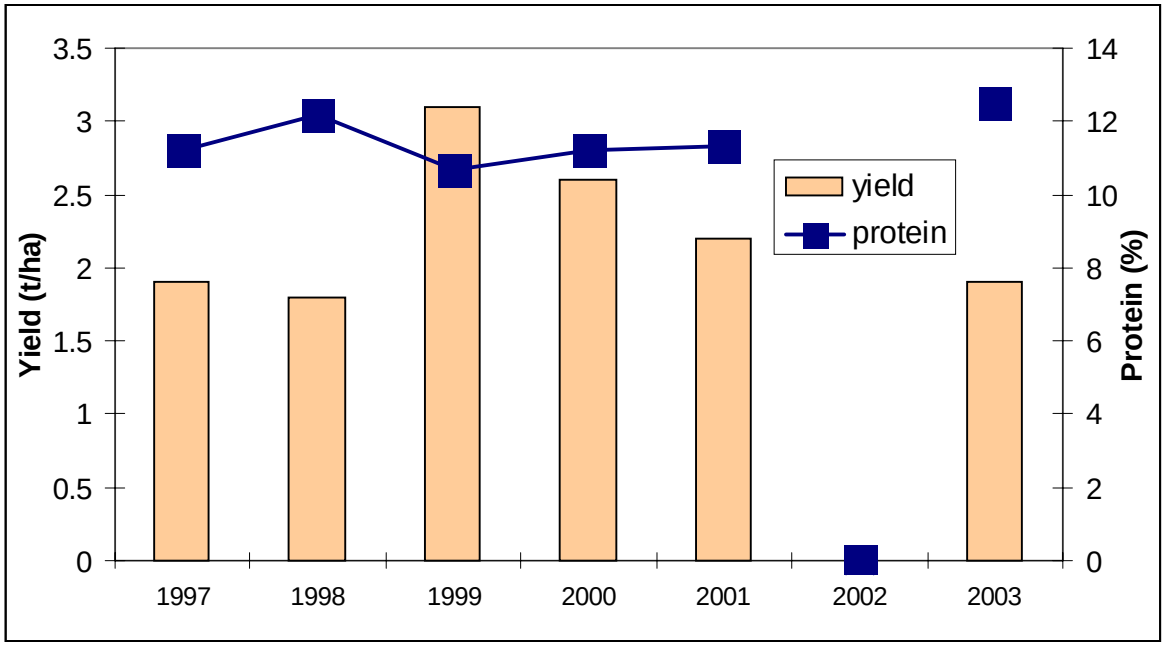

Figure 1. Wheat yield and protein for seven years of continuous wheat.

Since 1997 the area has been drier than average, in 2002 it was a drought and in 2003 the area was in a decile 3.5 growing season rainfall. Water use efficiency in 2003 was 16kg/mm/ha. Gross margins were poor in 1997 and 1999; and negative in 1998 and 2002. The gross margins in the other three years have been much better which was primarily related to the good prices received for wheat in those years (Figure 2).

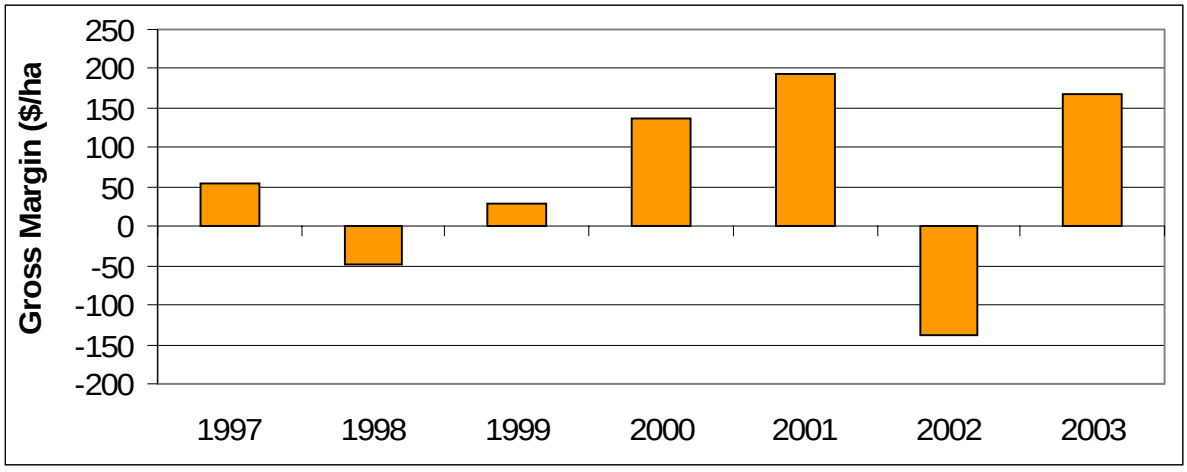

Figure 2. Yearly gross margins ($/ha) for continuous wheat.

From 1997 to 2001 the paddock was leased and all operations were contracted. Since 2002 the paddock is not leased but all operations are still contracted. Hence the dollar costs have decreased (no lease payments). The capital invested in growing the crop on a seven year average was $265/ha). The average rate of return on capital was 22% - an excellent result on a relatively low risk operation.

We are looking forward to cropping this paddock in a wet year – let's hope it is 2004!

Commercial Practice

- Continuous wheat is a viable option.
- Wheat stubble should be burnt to reduce the effect of Yellow Leaf Spot on the following crop.
- The wheat crop should be closely monitored for root diseases such as CCN and Take-all – if these diseases are found then the paddock needs a disease break.
- The crop can be direct drilled.
- N fertiliser rates have to be maintained but do not have to be excessive.
- Grass weeds such as ryegrass and wild oats need to be checked every year and may build up to levels at which a break crop is required (has not occurred as yet – primarily because of the excellent competition by the wheat crop).