UNR-THE TANDOU EXPERIENCE

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There are a number of issues that were considered before TANDOU LIMITED began trialing UNR (ultra narrow row cotton). The first was to understand the concept and visualise its best fit for our operation.
The concept being to halve the number of fruiting nodes per plant and double the number of plants per hectare. The up side for this concept at first glance is half the fruiting branches should and could impact on the growing season. At Tandou we can and do suffer from cool starts and drawn out cool finishes. Another upside to the UNR concept is there is no yield penalty for the earliness. What we had to establish was how to go from concept to the field. Our first action was to evaluate required resources . It is a strongly held belief that any concept no matter how positive will not come to fruition without someone to embrace it. In that area we have been fortunate. Rob Lowe locked on to positive potential for Tandou and has driven the UNR since, with the help of the agronomy team. Robs first action was to go to the USA to get background information for our first trial. This was 1998.
At Tandou location has taught us well the requirement for diversification within an enterprise so as to be able to take advantage of any up side the season may offer. Our cotton enterprise consists of upland , Pima, conventional flood, subsurface drip, 36 inch row spacing and UNR. These variations are efforts to capitalise on the best parts of the season.

BENEFITS OF UNR

UNR has given up to twenty days earlier picking than the conventional flood fields. This allows the gin to start up earlier. The benefits of this are very positive operationally and economically.
In a cooler climate the UNR shorter growing season opens up the planting window.
There is the opportunity to close the stage three insecticide window earlier.
UNR at Tandou has a yield result of three bales plus per acre depending on what earliness we seek. To match our conventional yields we can achieve up to 3 weeks earliness. To better our conventional yields by 0.25-0.5 bales per acre earliness may be reduced to one week to 0 weeks. UNR provides the opportunity to utilise short season varieties that maximise earliness whilst maintaining yields. These varieties generally fruit early (node 4or5) and under conventional row spacing cut out early which can reduce potential yields in this system.

CHALLENGES FOR UNR PRODUCTION

The challenges are the same for all crops but are presented in different packages for UNR. The same high standards of ground preparation and readiness are required for accurate seed placement. Planting equipment has given us some concerns. If the stand is gappy or weak you are not really growing UNR. Attention to detail during planting is very important. Selection of planting equipment is part of controlling the qualitative parameters for a successful UNR stand.

Weed control has not proven to be such an obstacle at Tandou with UNR but if not well considered before planting will cause some interesting times.

Irrigation scheduling requires refinement with respect to the greater number of plant and root mass Scheduling as a requirement of plant growth relation, maturity, fibre characteristics and final yield.

Harvest is something that will challenge the UNR grower . The major challenge here is making sure that the crop is properly prepared for the harvest operation. The harvest process its self works very well with the finger front on a stripper if the crop is well prepared. The current stick machines will give a well prepared sample if the crop is defoliated well and the crop is harvested at the optimum time(7-30 days after dessication)
Machine capacity is also a limiting factor contributing to drawn out harvest our experience is that depending on conditions one machine can do fifteen to twenty acres per day in three to three and one half bale cotton. Basket capacity slows things down in these crops.

Early insect control is important for UNR as the harvest is easier with non tipped plants

Plant nutrition needs to be better understood in UNR especially nitrogen requirements in relation ship to yield and maturity.

HOW DO WE PROGRESS UNR FROM HERE

The most positive way to progress UNR would be to have it accepted as a legitimate production technique and encourage those people involved to net work with each other and the research community. The end game being to refine the processes.
Four key factors will determine the overall acceptance of the production technique.

1.Cheaper reliable planting units that maximise the successful establishment of an even stand.

2.Development of specialised varieties.

3. Mastering the growth control phase and the development of a better "termination" product.

4.Bigger capacity harvest equipment.

5.Getting the majority of crop harvested at optimum time to reduce discounts and poor quality cotton entering the market. It is this early period where people are experimenting and are perhaps under resourced that presents the greatest risk. UNR cannot afford a poor reputation in terms of quality before it even gets started in a full commercial sense.

I am sure we can progress UNR much further, the cooperative way participating growers and organisations are working on the issues will be for the greater good