WATER STRATEGIES FOR COTTON

John Seery - Cotton Grower, Moree

Growing irrigated cotton in the Gwydir Valley where the water resource has been over committed to such an extent that a full allocation of water will only be realized only 50 years out of every 100 years.

Using these parameters I will attempt to outline a few procedures we try to obide by.

Use of water early in the season:-

- We have found from experience difficulty in establishing good stands of cotton from rain moisture.

- In our situation we think it is almost essential to pre irrigate.

  - Weed control use of knockdown Herbicides

  - A saturated soil profile

Because of water shortages and other reasons we are not early planters. In our experience the earlier crops are more subject to disease and damage caused by cold snaps. We attempt to wait and plant during the middle of October. The risk of damage to the crop is greatly diminished and the chances of replanting is minimised.

In low allocation years our area of crop is not fully determined at planting but at first irrigation.

Basically what we do is estimate what is in storage on farm plus our allocation and allow very conservatively for surplus flows and rainfall. We try and allow 4 crop irrigations.

TECHNIQUES FOR DETERMINING SUBSEQUENT IRRIGATIONS

A Neutron Probe is used in conjunction with long established methods.

We consider it extremely important for someone to be in the crops on a daily basis. A few things we look for when in the crop are:- internode length

- the feel of the plant
- colour
- a shovel is probably one of the most important tools we use to make a decision on when to irrigate especially to gauge the moisture in the top 20 to 30cm.
- records, history of previous irrigation
- general farm labour can also be a great help. The tractor driver normally sees more of the crop than anyone else.

The diagram (1) shows what actually does happen in the field. The field has two distinct soil types but is mostly irrigated as one field.

- Field 7 Noonan Plains
- 2nd year cotton, previous 1 year soybeans, 2 years cotton.
- 164 ha (410 acres), 750m runs
- Irrigated 4 times this year
- Yield 6.3 bales/ha (2.58 bales/acre)

We know from previous years that in the northern end of the field the refill point is 240mm but we can not take it down that far because of the southern end of the field. Conversely the south end of the field can not be filled to a capacity of more than 300mm.

NEUTRON PROBE READINGS 1987/88

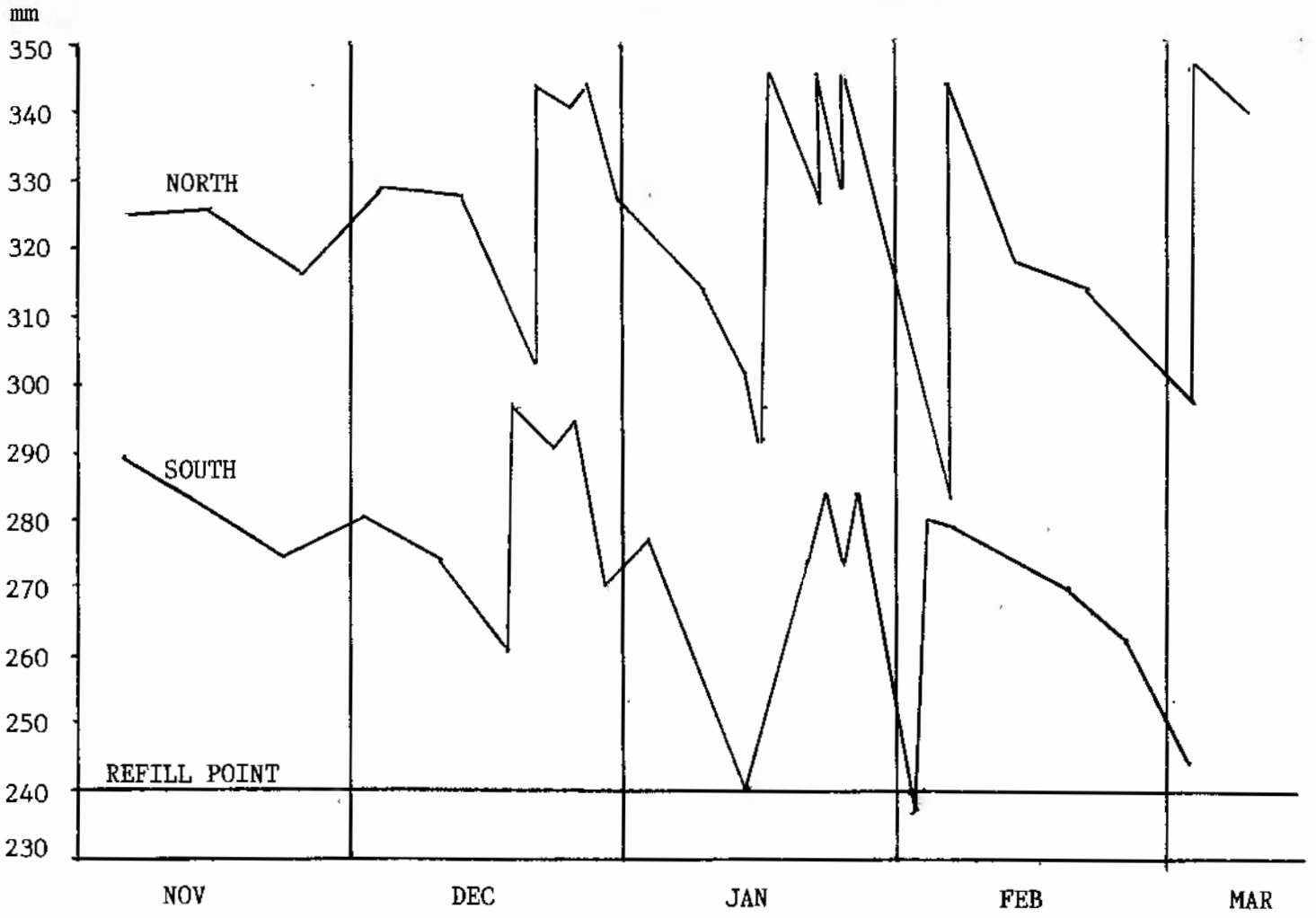

DIAGRAM 1