

PRODUCING AN EARLY CROP - A NUTRITIONAL APPROACH

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To the question "Can nutrition affect earliness?" the answer must be a definite "Yes". Further, it will be just as important a factor as irrigation or pest management. Correct nutrition will form the basis of any attempt to produce a good early crop and without it one would be less likely to utilise other management tools in their most effective manner. Correct crop nutrition is more than just a question of what fertiliser at what rates or time, but rather an integrated approach leading to the most beneficial use of the fertiliser applied. The information contained in this paper applies to self-mulching black soils west of Wee Waa.

Some basic considerations

1. There is a need to build up a profile of your soils and paddocks as a starting point to the likely nutritional requirements of your crop. This can be best achieved by soil sampling over a period of say three years, noting the trends and any developing deficiencies.
2. Paddocks should be developed in a manner that will facilitate good drainage. It's important to be able to carry out all operations on time whereas badly drained paddocks will not allow this, nor will they produce even maturity of the crop. I.E. the head ditch end will be ready to pick while the tail drain end will require a longer ripening period.

3. Time should be spent on building up an operational and organisational plan as manpower and equipment have to be available and ready at the optimum time for each operation, e.g. groundspraying, cultivations, fertiliser application etc.

There must always be attention to detail ensuring that all operations are carried out correctly, remembering that the early crop is going to be in the ground for the minimum time and therefore cannot afford to be under any stress from such things as weed competition, insect attack, local flooding or non-availability of nutriment.

4. There is a better chance of producing an early crop from well prepared fallow land which has been hilled up before picking and rolled before and after planting so as to hold moisture and keep winds out.

5. Seed selection should take account of your region and stated aim to grow an early crop.

6. Don't confuse policies and practices to produce an early crop with those aimed at growing a four bale yield, as there could be a conflict.

Fertiliser Programme

Although rates of nitrogen applied may require some regional fine tuning, we can suggest as a guide the following rates. On new cotton country up to 80 units, on fallow, not cropped, or after legumes 90 - 100 units, after a cereal crop 110 - 120 units while on back to back land 140 - 170 units depending on how long it has been since a break from cotton.

In our area, there would appear to be little if any case, for the application of phosphate or potash, although there may be justification in some regions. We have found the addition of gypsum at rates of 1 to 2 tons per acre helpful in improving soil structure and the ability of the ground to retain moisture.

Very high rates of N are unlikely to produce an early crop as ideally one should, we believe, aim to run out of N by the first week in March and hence set the crop up for timely defoliation in late March. Excessive N will also encourage trash at picking time, plus the development of late, low quality top fruit.

Trace Elements

The need for zinc is an unresolved question, however local opinion supported by Department of Agriculture research suggest that zinc is likely to be beneficial when applied to areas recently laser-planed and in particular, the 'cut' areas.

It's unlikely that zinc is required after fallow but it could be helpful on back to back cotton applied while inter-row cultivating. At "Doreen" we have noted a case for the application of chelated zinc at one litre per hectare, in conjunction with 3kgs per hectare of urea applied as a foliar spray twice, with 14 day intervals to lift a crop which is slow in its development.

The case for the application of other trace elements is more difficult to justify especially as most of the commercially available materials do not contain sufficient quantities of any one element to correct any trace element deficiency that may be present. Any benefit from their application is likely to be of a cosmetic nature. It is in this area that more work needs to be done by research bodies.

Timing of Application

The time of application can be varied, depending on your preparation programme, availability of manpower and equipment. The major consideration is to ensure that all N to be applied is available no later than the first week of December. Our own practice is to side dress once in early November which we find suits our farming and cash flow programme. Application at this time requires care to minimise any drift of gas onto plants. The seedling plant doesn't seem to have any problems finding sufficient nutriment in a well prepared seed bed until applied fertiliser becomes available. However caution is required in a dry year when mineralisation may be retarded in winter months.

The suggestions outlined in this paper are drawn from the experiences on our own land and those of some of our neighbors who have been striving to grow the early cotton crop.

