RESEARCH GAPS IN THE McINTYRE & GWYDIR VALLEYS

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If research gaps exist,we are all at fault.
If researchers are thought of as 'being in their own little world', it is a reflection of poor communication efforts on the part of producers and advisors. If growers and others are accused of taking little notice of research findings, then researchers need to determine the effectiveness of their communication effort.
So, the first message to growers and researchers in the two valleys is to improve the two way flow of communications.
Having said that, it must be mentioned that the industry has an excellent reputation for information transfer, so there is a sound base to build on.
As well the research effort, and implementation of research in the field to date has been excellent, for such a young Australian industry, and even younger producing areas in the Gwydir/McIntyre.
The following opinions on research needs,etc., have been formulated with the co-operation of my fellow advisors working in the two valleys.

McINTYRE AND GWYDIR VALLEYS

To place these valleys in perspective the areas of cotton involved should be mentioned. The Australian Cotton Foundation publication,"Cotton Profile" reported that the area of cotton in the Gwydir and McIntyre Valleys in 1984-1985 was 50,000 and 16,000 Ha respectively. This constitutes a significant 42% of the Australian Cotton production.

From a cotton production standpoint, requirements for research in these areas varies little from that required overall by the industry. However, some features of these areas make some research not relevant, or require area specific treatment from researchers.

Area specific research needs were not seen as research gaps, but rather as policy or research structure matters as follows:

(a) The long term goal should be a research facility in the Gwydir VAlley to complement Myall Vale.

(b) A.C.G.R.A should ensure that any research under its control is located so that findings are applicable to these Valleys.

(c) The geographic location of the main town in

the Gwydir Valley (Moree) is ideally centralized to cotton production areas and is within easy reach of large areas of cotton.

THE PRIORITIES

To enable priorities to be highlighted a table has been presented to give a quick reference to where research gaps are apparent,and to establish priorities for funding and support.

As well,to identify some more specific areas, after much discussion,the following areas are seen as important,and requiring more research.

1. Establish as clearly as possible what the world cotton market situation is likely to be for the long term,eg., 10 years. This could mean appointment of a market research officer funded by the A.C.G.R.A.

2. Evaluation and development of reduced tillage machinery. More involvement of Department of Agriculture Mechanisation section or A.C.G.R.A funding for this type of project are seen as two possibilities.

3. Evaluation of various in-crop herbicides, particularly in reference to crop tolerances and specialised techniques and timing.

4. Further input in the area of application

technology. Swath widths, droplet size and spray patterns.

5. Quantify the effect of cold weather early in the crops life,and effect on final yield and earliness.

6. Develop a more reliable system of crop and soil Nitrogen status monitoring.

7. Effects of rotations.

8. Plant variety/population interactions.

9. Increased effort on Bacterial Blight and its control.

10. The effect of various defoliants on grade and quality.

11. Improvement in communication between growers and researchers.

12. More detailed examination of mites, their control and effects.

13. A restructuring of the research effort to make Siratac more commercially relevant and viable.

14. Encouragement of private enterprise to undertake research funded by A.C.G.R.A.

15. Phosphorous response in cotton - requires much research to evaluate rates, placement and timing.

16. More widespread testing of shorter season varieties, especially in light of the uncertain rainfall and irrigation water situation in the

Valleys in the future.

CURRENT RESEARCH

Although gaps do exist, many fields of research are being, or have been adequately covered by various organisations, and we support their continued efforts as important to the industry.

For Example:

1. Resistance monitoring: This programme deserves your full support, and its success is vital.
2. Rate timing and placement of Nitrogen.
3. Cotton breeding programme.
4. Intergrated pest management programme
5. Heliothis and Mite control investigations
6. Soil physical degradation
7. Crop rotation effects
8. Heliothis behavioural and migratory studies.
9. Irrigation frequency studies
10. Irrigation method studies
10. Fibre testing studies.

EXPLANATION OF RESEARCH NEEDS TABLE

CURRENT PRACTICE SCORE

Rating 1 - 10.

A ten indicates that current practice is well developed and efficient with no scope for improvements through research. A score

of one signifies that current practice is poor, there is urgent need for research, or implementation of research results existing at present, or a rapid development of alternative practices.

CURRENT RESEARCH STATUS

Rating - G = Good, F=Fair, P= Poor

Good = Research is well designed, relevant and is being applied in practice. Research is rapidly solving the major problems.

Fair = Research is being carried out, but is insufficient, oris not properly addressing the problem.

Poor = Research at present is ill designed and irrelevant with little chance of solving the problems being addressed. Insufficient research being done.

N/A = No research is being undertaken or needs to be.

RESEARCH GAP

Yes = More research or better communication needed.

No = All research findings are being implemented at present, or there is no research being done.

PRIORITY FOR INDUSTRY FUNDING OR SUPPORT

10 = a good investment for producer funded research

1 = low priority, little need for any new or additional funding, or poor chance of economic return.

A low priority rating in this category may also indicate that past research and therefore present practice is adequate.

It does not necessarily mean that this aspect is of little importance to cotton production.

RESEARCH NEEDS - AT A GLANCE

ITEM	Current Practice Score (C.P.)	Current Research Status (C.R.)	Research Gap ? (R.G.)	Priority for Industry funding (P.F.)
LAND DEVELOPMENT				
Irrigation Design	8	G	N	2
Pump Installation	7	P	N	2
Reticulation Systems	7	G	N	3
Water storage	8	G	N	3
SOIL PRERARATION				
Primary Tillage	8	G	N	4
Seedbed Preparation	8	G	N	6
Reduced tillage Systems	5	F	Y	8
COTTON VARIETIES				
Breeding	7	G	N	8
Testing	6	F	Y	8
CROP ESTABLISHMENT				
Sowing Techniques	8	F	N	5
Seed and Seed Quality	8	G	Y	9
Sowing Rates	6	F	Y	7
Sowing Times	8	G	Y	7
Plant populations	7	F	Y	6

	CP	CR	RG	PF
SOIL				
Physical Problems	8	G	N	5
Irrigation Effects	8	G	N	5
Rotations	7	G	Y	9
FERTILITY				
Rotations	8	G	Y	9
Nitrogen	7	F	Y	8
Phosphorus	5	F	Y	8
Trace Elements	6	P	Y	5
WEED CONTROL				
Mechanical	6	F	N	8
Chemical	6	F	Y	8
Fallow	9	G	N	3
In-Crop	7	F	Y	8
Channels and ditches	7	G	Y	2
Grass	9	G	N	2
Broadleaf	6	F	Y	9
INSECT CONTROL				
Seedling	8	F	Y	3
Heliothis armigera	7	G	Y	8
Heliothis punctigera	8	G	Y	7
Mites	6	P	Y	9
Tipworm	6	P	Y	4
Aphids	9	G	N	4

	CP	CR	RG	PF
R.B.W	9	G	N	2
Plant Bugs	6	P	Y	6
Resistance	8	G	Y	9
Biological	6	F	Y	8
Int.Pest Management	7	G	Y	9
DISEASE CONTROL				
Seedling	6	F	Y	6
Bacterial Blight	3	P	Y	9
Vert.Wilt	6	F	Y	6
CHEMICAL APPLICATION				
Aerial	8	G	Y	8
Ground	5	P	Y	8
IRRIGATION				
Furrow	8	G	N	6
Drip	6	F	Y	5
Spray	7	F	Y	3
Timing	7	G	Y	7
Use Strategy	6	G	Y	8
CULTIVATION				
Timing	7	F	Y	5
Efficiency	7	F	Y	4
Accuracy	6	F	Y	6
Crop Effects	6	P	Y	7

	CP	CR	RG	PF
DEFOLIATION				
When ?	8	F	Y	6
Products	7	G	Y	4
Quality effects	5	P	Y	8
HARVESTING				
Techniques	8	G	N	4
Module Building	7	G	N	4
Weather Effects	7	F	Y	5
PRODUCT				
Marketing	5	P	Y	9
Quality	7	G	Y	9
Price Stabilisation	3	P	Y	9
Promotion	6	G	Y	7
MACHINERY				
Soil Preparation	8	G	Y	7
Cultivation	7	F	Y	5
Planting	8	G	N	5
Reduced Tillage	5	G	Y	8
Handling	8	G	N	4
SERVICE INDUSTRIES				
Aerial Operators	8	G	Y	8
Consultanta	7	F	Y	n/a
Ginners	8	G	Y	n/a
Marketers	6	P	Y	9

	CP	CR	RG	PF
Siratac	6	F	Y	4
Fert. and Chem.Suppliers	7	G	N	n/a
Financiers	7	F	Y	7
Accountants	7	F	Y	6
Retailers	8	G	N	4
Govt.Departments	6	F	Y	n/a
INDUSTRY MATTERS				
Pesticides	5	F	Y	8
Environment	5	F	Y	8
Public Image	5	F	Y	7
Political Impact	6	F	Y	6