

THE GOVERNMENT'S VIEW OF THE TECHNOLOGICAL NEEDS
OF THE COTTON INDUSTRY

(DAVID F. SMITH TO ACGRA CONFERENCE, 18 AUGUST 1988)

My immediate feeling at this invitation was surprise that I should be asked to put the Government's view because we do have a Government member on Council. But then, of course, I am, too, a Government person, appointed not selected. Thus your view of me is like my view (as a wool and wheat grower) of the Chairmen of those Councils from a grower perspective. Just in passing I would like to pay tribute to the strength and effectiveness of your industry representatives on the Cotton Research Council. I hope my representatives on wheat and wool are as good!

Your committee has asked me particularly to focus on the technological needs of the industry. As a background to this it's worth talking briefly about the research councils and their evolution.

Really, it all began in 1936 with the Wool Industry Fund. This was, surprisingly, set up to counter the inroads of artificial fibres - we think of this as a modern problem. Since then most industries have had research committees, councils or corporations on much the same principle as the Wool Fund, dollar for dollar industry and Government money. Through the 50s, 60s and 70s these have tended to focus on production research even though that first one established was really to do with promotion and marketing. However, there has been a continuing emphasis on developing national priorities (as opposed to state or local) and seeing the industry as a whole.

Cotton Research Council

In 1985 there was a Commonwealth Government review of rural research arrangements, resulting in an effort to bring uniformity of approach to all major industries and hopefully have research and development for all industries. So in 1986 the Cotton Research Council was formed as part of this.

A good start had been made by the Cotton Research Committee in the three years before and eight of the members of the Council had been members of that committee. I was the only new person. The Chairman's task is defined as looking both ways, having responsibility and accountability to both industry and the Minister (some would say the meat in the sandwich!), whereas, in a sense, the other members' responsibilities are specifically to the industry. Thus it is perfectly appropriate for you to hold me to account for the Government's view of needs.

Government View of the Council's Task

In broad terms the Government's view is reflected in the emphases given in setting up councils.

1. Cotton must be seen as an industry not just a farming activity - as it were from genes to jeans, that is, from the genetics of the seed through to the cotton on a person's back.
2. Council has responsibility for research and development, that is, not just the carrying out of experiments, but the development to commercial applicability and a vital interest in adoption by the industry.
3. Council must be concerned about communication and training - we see this as a need to consider the long term supply of staff both research scientists and advisers.

The Technological Emphasis

Though one cannot impute a specific technological view to the Government, it would be true to say that the Government's general emphasis on technological innovation, and reasoned application of technology, is seen as a guiding light by me as chairman. It is also fair to say that this fits well with the whole ethos of your industry - it in fact developed this ahead of time. From my own wide familiarity with other agricultural industries, I can say that in my two years or so of close contact I have come to admire - and enjoy - the balance in the industry between "knowing" new technology, and sensibly adopting it.

I believe cotton is a model industry, is generally seen to be so by governments, and is an example for other industries to emulate. Council has no difficulty in working to this concept - but the overarching priority is to keep it so!

As I have indicated at cotton industry gatherings before, and in writing in *The Cottongrower*, we use a model for research fund allocation which is simple, and comprehensible to the grower. It does not hide behind technical terms, but yet readily accommodates emphases and priorities. It has been widely published, e.g. in the Annual Report, so I will not repeat it here: rather I will select several points at which we see possibilities for more technological advances, and/or fine tuning.

1. Genetic engineering and cotton breeding.

We all dream of a cotton plant seed with specific genes inserted: for glyphosate (Roundup) tolerance, for seedling vigour at low temperatures, for Heliothis resistance - the list is endless. We are investing some funds directly into this, and the Government, through CSIRO Division of Plant Industry, is also supporting it.

2. Soils and Nutrition.

What a fragile, fickle resource soil can be, especially along with weather! Yet we feel much knowledge has been gained, and we would like to see much more objective soil moisture and nutrition measures. The awful title, COMPUCLOD, has been given to an overall database. We have had a review of soils and nutrition work, including experts from CSIRO and state departments, and believe we can harness new technology and greatly sharpen the effectiveness for you of much soil and nutrition work.

3. Heliothis ecology, and physiology and control.

So much time and money is spent on insect control, and so much chemical is used. I see no evidence that the government has anything but a balanced, realistic view of the problems of insecticide use, and believes that most farmers are concerned to find alternatives - both as the one who foots the bill, and one who cares. Our priority here is a multipronged attack - costing your fund about \$1m per year: everything from migration to parasites to the pyrethroid strategy to biodegrading of residues. We are prepared to spend some funds on specific detoxification studies. The image of the industry must be one of a responsible user.

4. Cotton quality and export markets.

Though not perhaps as wide as most farmers would want, there is increasing acceptance of John Kerin's claim that rural industries are sunrise, not sunset, industries that can hold their own and grow in their contribution if quality is unsurpassed. Hence a Council objective is to increase yield steadily and maintain or improve quality. Thus breeding is sharply focussed on quality, and we are also funding a fibre testing facility. Handling is seen as efficient and gins are generally modern and well run,

but it might also be useful to take a close look at some aspects of their overall technology.

5. Marketing

Remembering the downward price shifts of two years ago, Council contemplates the need for the fastest and best possible feedback of worldwide information on cotton markets and prices, but has not been able to commission worthy projects. And is it worthwhile going further - into textile and fashion research? We ponder. We talk to the Australian Bureau of Agricultural and Resource Economics fairly regularly.

6. What if?

Over all these things hangs a need to be prophetic: to know better what will happen given a certain germination temperature, genotype, soil moisture level, nitrogen availability, etc; or to predict what those insects, in certain numbers, will do to that variety of crop in that soil with that expected daily temperature pattern.

Council sets a high priority to knowledge transfer. Technology can help here - in the transfer of research information into realistic and helpful models.

Everyone hoped SIRATAC would be the ultimate in applying technology - and I am sure that something like it will be.

Overall, then, we see our charter as the continued application of new and better technology to the cause of the cotton grower: biotechnology in new cultivars; the latest in fibre testing equipment; "smart" strategies to confuse insects; top of the line equipment to monitor and measure soil water and nitrogen; and the best possible combinations of computers and old fashioned printed words to most effectively convey new knowledge to you. I hope we give you value for your dollar!

