

ACKNOWLEDGEMENTS.

On finally completing my much overdue report, I must firstly apologise and then inform those on the Management Council that, even though this must appear ungrateful, I sincerely assure this not to be the case.

I have been most busy in disseminating the knowledge I learnt to a vast area of farmer bodies and interested persons in Western Australia.

To thank and acknowledge all those that assisted me and made my Nuffield Study tour possible would, unfortunately, not be possible. In thanking a few I will undoubtedly leave out many, and for this I am most sorry.

Firstly I would like to thank the Australian Management Council and the Western Australian section of the Australian Nuffield Farming Scholars Association for making the tour possible.

I am most grateful to the following in the U.K.:

Mr. J. Cyster - Chairman of Nuffield Farming Scholarships (U.K.) and Mrs. Cyster for making me extremely welcome.
Captain John Stewart - Director of Nuffield Farming and Mrs. Stewart
Mr. R. Martin - Chairman Nuffield Scholars Association of U.K. 1978.
Mr. Eric Carter - Deputy Director of A.D.A.S.
Mr. M. Soper - Head Dept. of Agriculture, Oxford University.
Dr. K. Baker - Director Meat and Livestock Commission.
Mr. G. Ballard, Mr. D. Younge of the Nuffield Foundation.
U.K. Milk Marketing Board for their generous assistance in supplying a car for the 6 months.

My sincere thanks go also to Mr. Norton Look and Mrs. Look, my farmer "Host" in the U.K. and to all those U.K. farmers and Scholars who helped me to appreciate their way of life.

Thanks also to those members of A.D.A.S., M.A.F.F. and National Farmers Union who guided us through the 6 months.

Finally I would like to acknowledge the support of all the sponsors of the Nuffield Farming Scholarships in Australia, with reference to Western Livestock and the Rural and Industries Bank who sponsored my trip

Kevin L. Gleeson,
"Rye Park Farms"
Jerramungup,
Western Australia.

Protectants in Grain Storage:

Chemical spray control of weavils still appears to be more effective than any other in the U.K. Malathion and Fenitrothion, because of relative cheapness are the most common chemicals used. Iodofenphos and Pirimiphos - Methyl are sometimes used, but are relatively expensive chemicals.

Cleanliness of grain stores - i.e. brushing down etc. is of course the first essential and most effective means of hygiene before applying insecticidal sprays.

High temperatures as well as moisture are conducive to insect buildup. The U.K. has an advantage here over Australia as their ambient temperatures are considerably lower than ours at harvest time. Insects thrive in 'hot' spots in grain and for this reason aeration is used.

Fumigating infested grain is done using a mixture of two liquids, Ethylene dichloride and Carbon tetra-chloride. Tablets of Aluminium phosphide are also used. These fumigants are very dangerous and must be handled with respect.

As I have said the U.K. problem of insect infestation does not appear to be as great as ours. With Malathion breaking down we really have a problem in the search for newer control measures. This is compounded by the fact that most of our grain is exported and the U.K.'s is used mainly internally.

The use of Propionic acid as a preservative was noted with feed grains. This enables grain to be stored at high moisture levels as build up of moulds is counteracted. This approach is only good for stock feeds and out for human consumption.

Harvesting in the U.K.

Harvesters or "Combines" need to be geared in size to the complementary handling systems at harvest time. Grain handling and drying equipment capacity tends to be greater than the combine capacity on U.K. farms. This of course is a handy situation to be in. As in Australia combine prices have soared in recent years. Approx. U.K. increase is some 500% in the past 5 years.

All the timeliness and mechanisation studies have of course been done for set circumstances and conditions, but as these are different to ours, only generalisations can be made. It was interesting to see combines - harvesting in the light rain with tarpaulins over the grain box. Grain samples are of course very poor in these conditions and seed in almost all cases to be cleaned again after the header before drying and storage.

One improvement to the combine of interest to me was seen at the Royal Show Stoneleigh. It was a rubber belted 'table' being motivated by a hydraulic motor and set of course behind the cutter bar.

I could see great benefit to our areas of Australia where short strawed - light crops would 'feed-in' better. From my personal experience in these conditions results of even feed and less cutter bar loss and crop drag loss would occur. Massey Ferguson won the Silver Medal for this concept and I am hoping will eventually bring it to Australia.

At the International Agricultural Machinery Show in Frankfurt, Germany, an Eastern Block Combine was seen. I was under the misconception that technology of Agricultural Machinery was not as good as the "West's". It was amazing to see a "Combine" called a "Fortschritt" made in East Germany with such features as

- a) throughputs as high as 12.3 kg/sec. for wheat
- b) transverse and longitudinal control of cutter bar
- c) electronically controlled automatic steering system making full use of working width and relieving the driver also.

These and many other features including a price tag of 40,000 pounds sterling landed in the U.K. makes one think of our pricing structures and values for money.

Schleswig - Holstein, West Germany

It was whilst on a trip to West Germany in May that we had the pleasure of meeting with Dr. O.H. Brandenburger - Chairman of Agriculture, Schleswig Holstein and Dr. H. Effland of B.A.S.F. chemicals Keil. A past U.K. Nuffield Scholar, Mr. J. Miller, the Canadian scholar and myself, were toured around by these two gentlemen to two Experimental Farms and various farmers in Schleswig-Holstein.

It was interesting to see the Schleswig Holstein system of "recipe" cereal growing in progress. Emphasis is put on breeding mainly for yield. Inbuilt resistance to disease is not considered as important as the yield factor as disease is of course controlled with chemicals. However a very high quality hard wheat called Monopole and developed in Schleswig-Holstein was seen. It has an extremely good baking quality with approximately 75% flour and 15% protein levels and averages 6.5 t/ha.

The use of growth regulators to help stop lodging was noted in the U.K. These chemicals make the outer cell walls of straw thicken with more lignin and less cellulose, and possibly increasing the silicon content of the cells - thus stiffening the straw. The use of growth regulators in cereals have so far been restricted mainly to wheat and some varieties of oats.

However in talking to Dr. Effland of B.A.S.F. he mentioned a new growth regulator with the name of TERPAL for winter barley. In trials so far over 5 years Terpal has increased yields by 10% average. It is good for use on winter rape also. Terpal has now been released in Germany. Claims of 30% to 80% more root development was made in using Terpal. This aspect as well as the fact that the plant can be fed with more Nitrogen in going for optimum plant population, opens up several other points.

Perhaps with this increased root development or concentration of plant growth below the ground, under Australian conditions, moisture stress would be lessened. Damage to plant because of root disease could possibly be less severe also.

On the subject of Septoria (Modorum), as some spores of this disease come across in the seed, it was felt that the old Mercury seed dressing did the better job of control. A seed dressing box placed inside the seeds box directly over the seed outlets and fed through the seed tubes was seen and noted with interest in Germany.

Once again it was interesting to see how political legislation can govern the food output of a country. Across the border in Denmark we were told that because of legislation only Spring grains were allowed to be sown, this was mainly due to mildew carry over from Winter to Spring barley.