



# **Australian Nuffield Farming Scholars Association**

c/- Royal Agricultural Society of Victoria, Royal Showgrounds  
Epsom Road, Ascot Vale VICTORIA 3032.  
Telephone Telephone (03) 9281 7444

***Report of the Study Tour to the  
United Kingdom and Europe***

***By Peter Cooper  
1994 Tasmanian Nuffield Farming Scholar***

**SUBJECT:**  
***Production and Marketing of Edible Fungi  
and Berry Fruits.***

**SPONSORS:**



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# *An International Scholarship for Australian Farmers*

The Nuffield Farming Scholarship Scheme has been established in the United Kingdom, Australia, New Zealand, Canada, Zimbabwe and France for almost 50 years.

Each country has its own independent Association responsible for funding, selection and administration.

The United Kingdom remains the focal point of the Scheme, with the United Kingdom Nuffield Farming Scholarship Trust providing an overall secretarial / liaison service.

Since 1950, more than 700 Nuffield Farming Scholars from the participating countries have criss-crossed the world studying a range of agricultural, trade, political and cultural issues.

Each country awards two or more scholarships annually and as a general rule, scholars from all countries assemble in the United Kingdom in February each year for approximately six weeks of group study before pursuing their individual programmes in the United Kingdom and / or other countries.

The interchange of scholars between countries is facilitated, costs are reduced and the standards of study enhanced by the Association and individual scholars in each country accepting an obligation to assist visiting scholars with itineraries, introductions, travel arrangements and accommodation.

This "Nuffield Network" has become a potent force within the overall scholarship scheme and it is constantly re-enforced through the holding of a World Conference in one of the participating countries every three years.

These conferences are usually attended by over 150 former scholars at their own expense. They are concerned with the maintenance and improvement of the scholarship scheme and at the same time they provide an opportunity for former scholars to further expand and increase their knowledge of farming and related issues.

## **The Scholarship**

The scholarships are awarded annually by the Australian Nuffield Farming Scholars Association to enable established farmers to travel to the United Kingdom and other countries for the purpose of increasing their knowledge of practical farming and the broader issues of agricultural production.

## **Obligations**

Scholars are required to devote the whole of their time to a programme

approved by the Australian Management Council; to resume residence in Australia upon completion of the scholarship; to submit a written report to the Association covering the study programme completed under the award; and to communicate details of their newly-acquired knowledge and experience to other Australian farmers.

## **Eligibility**

The scholarships are open to Australian citizens of either sex who are engaged in farming of any kind in their own right or as managers, and who intend to continue farming in Australia. The preferred age is between 28 and 40 years, although outstanding applicants outside of these age limits may be considered.

## **Tenure and Location**

The scholarships are tenable for four months. Initially a minimum of six weeks must be spent in the United Kingdom; a group orientation study with the Award winners from other countries is undertaken during this period. Scholars are then able to pursue their individual study programmes.

The United Kingdom Farming Scholarship Trust, the national Farmers Union and the Ministry of Agriculture provide generous support and assist in the development and execution of these programmes. Should successful applicants have farming interests which are not practised in the United Kingdom, they are permitted to complete their study programmes in the country or countries best suited to their pursuits.

## **Application Procedure**

The Australian Nuffield Farming Scholars Association allocated a scholarship to each of the States and the Northern Territory once every three years in rotation.

Applications are invited by advertisements in the daily press from February to May; final selection takes place in August; and the scholars are expected to arrive in the United Kingdom in February of the following year.

## **Further information is available from:**

The Secretary  
The Australian Nuffield Farming Scholars Association  
Royal Agricultural Society of Victoria  
Royal Showgrounds, Epsom Road  
Ascot Vale VIC 3032 Telephone (03) 9281 7444

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## Acknowledgement

As any traveller would know, one prerequisite for international travel is that small blue book called a passport. I am indebted to the Australian Nuffield Farming Scholars Association for providing me with an additional passport in the form of green tie with red and yellow motif, without which I believe doors and opportunities that opened for me would not have appeared.

The opportunity to travel on my scholarship would not have been possible were it not for the help and assistance of many people and I take this opportunity to sincerely thank them.

Firstly my wife Gillian. For her support and encouragement for me to apply for a scholarship and the workload she undertook whilst I was absent. To my parents Byron and Gwen for literally moving house to care for our children, to my parents in law Don and Jenny, and to friends Maureen and Raylene for their aid and assistance and to the many others that helped in many varied ways.

## Sponsors

Qantas - my thanks for being such a comfortable and efficient airline  
Tasmanian Department of Primary Industry - for supporting the Tasmanian Scholarship  
The Myer Fund - for enabling me to attend the Wye College course organised by the Worshipful Company of Farmers

## Referees

Professor Robert Clark, Professor of Agricultural Science, University of Tasmania.  
Mr Owen Carrington-Smith, Aquatas.

## To Many Others

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To my fellow students at Wye College especially those Nuffields - Jem Sewell, Roger Derryman, Jill Willows and Gordon Rennie for their assistance and friendship.

## Objectives

My principal objective was to investigate the production and marketing of the French Black Truffle (*Tuber Melanosporum*) and other edible fungi with the aim of establishing an edible fungi industry in Tasmania. Secondary objectives were to investigate the production and harvesting of Essential Oils in a bid to identify best practice for adoption in Tasmania.

I was wisely advised by past scholars not to narrow my field of view and accordingly I would add an area of interest that evolved whilst travelling which was production and harvesting of berry fruits.

## Scholarship Travels

### Advance Course in Agricultural Business Management

I was indeed fortunate to be offered a place in the Worshipful Company of Farmers 44th Advanced Course in Agricultural Business Management at Wye College, Wye. I left Australia on 13th January, 1994 to join the course on the 16th January. The course was attended by 19 other participants from the following countries: fifteen from England, two from Scotland, one from France and one from Canada.

As suggested by the title, the course was a comprehensive and concentrated study of the management tools and techniques used in agricultural business management and was conducted using the facilities of the Centre for European Agricultural Studies (CEAS) campus within the Wye College complex.

The agricultural activities pursued by participants was very diverse and ranged from broad-acre arable cropping to intensive horticulture as well as representatives of the major livestock options, being beef, lamb, pigs and dairy. Also participating were land agents and a specialist agricultural banker.

This diverse range of activities combined with the fact that every option available to U.K. farmers with respect to landholding was represented by at least one participant provided for a rich and varied melting pot of ideas, values and perspectives, so that to say there was never a dull moment in most debates and discussions would be a gross understatement.

The course was conducted over a period of three weeks and teaching methods included seminars, discussions, case studies and lectures supported by a range of after dinner speakers and debates with senior members of business and politics, including Lord Carter, Opposition Front Bench spokesman for Agriculture in the House of Lords, Sir Roy Griffiths, immediate past Chairman of J. Sainsbury and Co., one of the leading supermarket chains in the U.K., Ms. Robyn Preddle, Australian High Commission spokesperson on Agriculture and Trade, Mr. Barry Leatherwood, Secretary of Transport and General Workers Union, Mr Shaun Rickard, Chief Economist, National Farmers Union of U.K. and Mrs A. Wheatley-Hubbard, Master, Worshipful Company of Farmers.

The course discussed strategic, operational and tactical issues in the management of agricultural businesses.

The importance of drawing on other fields of study including agricultural science, accounting, finance, statistics and personnel management were stressed.

At the beginning of each week the group was divided into three teams to facilitate team assignments and group presentations with the final assignment being the appraisal and reporting with any recommended alterations to the structure and or management practices of the business of one member of the team using actual data and financial information of the selected operation with a team presentation to a panel consisting of lecturers and wardens of the Worshipful Company of Farmers

I have no doubt whatsoever that all participants in the course gained a tremendous amount of knowledge from their attendance. For me the course was a valuable learning experience in many areas.

The pressure cooker nature of the course combined with the policy of group or team assignments and the requirement to meet strict deadlines meant that all participants had to be very aware of group dynamics and the necessity to assess the strengths and weaknesses of individuals quickly and efficiently to ensure that individual contributions could be maximised for the benefit of the team. This experience was a salutary lesson in personnel management in itself.

The 1994 course was extremely timely as it was the first course to be held since the Uruguay round of negotiations for signatories to General Agreement on Tariffs and Trade (GATT). As a result a good deal of time was given to discussion of the implications, both to the E.U. and global agriculture as a result of the negotiations.

Given the relative size of Australia's agricultural production and the importance of agricultural exports it was particularly timely to be able to gain the views of all involved in the course. The implications of GATT and its resultant influence on the Common Agricultural Policy (CAP) currently operating in E.U. member countries was exhaustively discussed.

At the conclusion of the Wye course I flew to Toulouse to join my partner in our company, Perigord Truffles of Tasmania on a two week tour of French Truffle production areas. During the course of those two weeks we travelled over 4000km and averaged two appointments per day. Our objective was to

investigate all facets of production, processing, research and development, marketing and consumption of truffles and other pertinent edible fungi.

### **The Truffle Industry in France and Italy**

The French Black Truffle has been produced in France for hundreds of years and is internationally recognised as a delicacy. The principal production areas are located in the regions of Bordeaux, Perigord, Provence and Dordogne. Official French Bureau of Statistics figures suggest that production is currently running at about sixty tonnes per annum, this production is supported by additional production from Italy and Spain both of whom officially produce approximately twenty tonnes per annum each. These production figures are in stark contrast with levels of production in the early nineteen hundreds peaking in 1903 at approximately Thirteen Hundred Tonnes.

The reasons for this decline are many but principally they are the devastating effects of two world wars on native forests, the increasing urbanisation of rural France and a subsequent decline in demand of wood for fuel and therefore a resultant decline in pruning and collection of firewood contributing to forest understories becoming cluttered and darker and the impact of industrial pollution from fossil fuels returning to earth as acid rain. One may note my reference to official figures as I believe that the published figures probably represent about half of the actual production of Truffles.

Whilst attending a weekly truffle market in Southern France, my partner and I witnessed the sale of approximately three hundred and fifty kilograms of fresh truffles offered by approximately sixty vendors and purchased by fifteen to twenty buyers. Of particular interest was that without exception the method of payment was in cash and one can only wonder how often this process is repeated at small provincial markets during the three month season.

In contrast to the traditional truffle hunter searching in crown or private woodland there has, since 1972 been a concerted effort in establishing purpose planted "Trufferies" (Truffle Orchard) using seedlings inoculated with the fungus and then planted out. One nursery visited was producing One Hundred thousand trees per annum for this purpose and had been doing so for a number of years. At present in excess of 2.5 million trees have been planted out for this purpose.

Harvesting of truffles was traditionally done using the aid of sows to locate the truffles but dogs have now nearly replaced pigs in finding truffles and such is the importance of these dogs that there are National Truffle hunting trials similar to and regarding with as much importance as our Sheep Dog trials.

We were fortunate to be able to participate in some truffle hunts and one in particular was with the three time National Champion Truffle dog who located nearly 1.5 kg of truffles in a little over an hour.

The marketing of truffles takes many forms, approximately eighty five percent of truffles produced are consumed as fresh product with the rest being preserved either whole or in pieces or used in conjunction with other food products such as pate and foie gras. Prices of truffles varied depending upon where in the marketing chain they are purchased and range from 2800FF-3200FF per kilo, unwashed up to 7900FF per kilo in Parisian fine food stores such as Le Maison de la Truffe (The House of the Truffle) where to stand and watch a customer select and purchase 500 grams of fresh truffles for AUD\$1000 was a sight I will never forget.

In a bid to differentiate their product, there were moves by some truffle growing producer groups or associations towards gaining appellation for their produce and since returning home I have learnt that the Truffle producers association of the Provence area have been successful in gaining Government approval for appellation of their product.

As in the case with wines produced in different areas there are consumers who regard truffles produced in particular regions to be superior to others and it will be of interest to follow the success or otherwise of the attempt to differentiate the Provence product through appellation.

It was surprising to find that my expectations of all French people knowing of and about truffles were unfounded and in fact once outside of the principal production areas the average person quite often did not know much at all and certainly those that had not eaten them outweighed those that had. Undoubtedly the price would be a major reason for this.

Other species of truffle being investigated were *Tuber brumale* and *Tuber aestivum*. *T. brumale* poses particular problems for producers of *Tuber melanosporum* in that it is a very much inferior truffle that has the ability to invade and proliferate in competition with *T. melanosporum*. The *T. aestivum* or the summer truffle is as its name suggests harvested in spring and summer and is a species regarded as inferior to *T. melanosporum* and production of *T. aestivum* is much higher than *T. melanosporum* and as a consequence prices received are considerably lower than the Black or winter truffle, *T. melanosporum*.

In addition to time spent in France I also visited truffle production areas of Italy and spoke with researchers. As well as research and production of Black Truffles species there is also production and research and development of white truffles. Italy is considered the home of white truffles with the main species being *Tuber magnatum* commonly known as the Piedmont Truffle and other lesser varieties such as *Tuber uncinatum* and *Tuber albidum*. *T. magnatum* is the most expensive of all truffles, again a reflection of supply limitations.

*T. magnatum* presents extreme difficulties for researchers and growers as it is very difficult to produce and requires different procedures to effect inoculation. There is great consternation at all levels of industry about this problem, as it is impossible for the untrained eye to distinguish between the *T. magnatum* and its much lower valued cousin and indeed researches of many years experience speak of the difficulties of identification even with the aid of microscopes and D.N.A. fingerprinting. One area of research was to use intestinal enzymes of worms and insects that eat *T. magnatum* mycelium to trace and identify spore genotypes.

The principal problem of lack of identification was seen as a great impediment to the establishment of trufferies with inoculated seedlings. Because of the extreme difficulty in identifying the species with which the trees are inoculated and the subsequent uncertainty with regard to the income generating capacity of trufferies infected by these species of much less worth, expansion of trufferies is proceeding at a relatively slow pace and certainly is much less than *T. melanosporum*.

We were fortunate to attend a festival of truffles in Provence as guests of the President of the Provence Truffle Growers Association and joined one thousand guests for a memorable lunch of truffles in many forms. Again an unforgettable experience.

Because of the history of truffle production and the relatively recent introduction of purpose planted trufferies there is still a certain level of mystique and myth surrounding production techniques and indeed it was not that long ago that the location of truffle producing trees was regarded as an heirloom passed from father to son on the deathbed. Whilst this may seem inconceivable to some reading this report it was commonly repeated by older producers and hunters we were fortunate enough to meet.

Research and development of truffles is basically reliant on government research stations similar to our Primary Industry stations here, but it was interesting to note that there appeared to be very little interchange between staff at the five or six stations visited and in fact one could almost detect a desire to operate in isolation at some centres.

In addition to the French Truffle other edible fungi were being researched but not to the same degree except for the champignon, button mushroom varieties where there was considerable research and development effort both in the United Kingdom and France resulting in some extremely beneficial outputs for commercial producers of those varieties. Limited work was being done on Chantarelles, Morels and Cepe in France.

### **Nuffield Tour in the United Kingdom and Europe**

After two weeks in France I returned to London to meet with my fellow

scholars to commence our group tour. After an initial briefing by the Nuffield Director Mr Stephen Bullock we embarked on a series of meetings with Government Ministry for Agriculture, Fisheries and Food (M.A.F.F.), banking and industry bodies, National Farmers Union (N.F.U.) in London and then travelled to Wye College for a briefing by staff on the European Union (E.U.) policy, the Common Agricultural Policy (CAP) and the General Agreement on Tariffs and Trade (GATT) and their interpretation of the significance of the Uruguay Round of negotiations and the subsequent impact on E.U. member countries and their trading partners. From Wye it was all aboard our mini bus and across the channel after viewing the Channel Tunnel and its associated infrastructure and enjoying the hospitality of South East English Nuffields thanks to the efforts of Mr Chris Older, Chairman Nuffield Farming Scholarships Trust.

Of particular interest to me as a woolgrower was our visit to the Ashford premises of Kent Woolgrowers Co-op where we were shown the United Kingdoms methods of Wool classing, sorting, interlotting and packaging of predominantly strong carpet type wools. It was interesting to note that there were five hundred lines of wool and that classers were required to undertake up to eight years training before being considered fully qualified.

From Dover to Calais and then onto Brussels was our itinerary to meet with Eurocrats of N.F.U, British Minister staff of D.G 6. and a briefing by C.O.P.A. the French equivalent to N.F.U. in a bid to better understand the policies of the E.U. and what seemed to be the differing views of the commission and farmer bodies.

From Brussels to Paris to view the Rungis Market with its display of produce from all over the world and then to visit the Paris Sima Exhibition.

After leaving Paris we were shown around the Chauvigny Region by Jean-Marc Texier and the Amiens Region by Philippe Quignon (past French Nuffield Scholars). Following our French tour we returned to the United Kingdom to continue our organised tour around England and Wales being principally hosted by Shropshire Nuffields and visited farms, colleges, universities and research stations.

The two areas of France visited were at the opposite ends of the scale in respect to the size, nature and diversity of operations. On the one hand we were shown small one man operations surviving on one hundred and fifty ewes producing prime lambs on sixty five acres of land and supplementing income from a small distillation unit contracting to other farmers for the production of "eau de vin", or small on farm goat cheese operations in the Chauvigny area up to broad-acre arable units in the Amiens area of the Paris Basin, the equal of any broad-acre operations seen with respect to efficiency and productivity. Similarly there was a vast difference in operations seen in the United Kingdom ranging from small hillside operations in Wales to the large broad-acre farms of East Anglia.

It would seem that one of the major challenges facing the E.U. is how to equitably implement income support mechanisms for these operations that are poles apart in size, scale and in many cases need. Not only is it a problem for Government but equally represents a monumental headache for respective farmer representative bodies such as N.F.U. of the United Kingdom and C.O.P.A. of France in how to best represent the divergent interests of these groups. I believe that this conflict will present one of the greatest challenges to European Agriculture as we know it. Further I believe that if it is not addressed the backlash generated by an increasingly aware public who at the end of the day are responsible for funding these support mechanisms will be overwhelming, given situations of large holdings generating gross incomes in excess of Seven Hundred and Fifty Thousand Pounds from two thousand three hundred acres of arable farm of which one third is E.U. subsidy in one form or another.

Equally challenging was the divergence of opinion between the large and small producers. In both the U.K. and France the vast majority of large scale farmers were of the view that if the aim of the E.U. was to eventually operate at world market prices through the removal of aid then it ought to happen sooner rather than later, whereas exactly the opposite was the case for the smaller farmers, where to talk world market prices unaided by subsidy would not be countenanced.

## **Berry Fruits**

A significant area of interest to me was that of berry fruit production. Raspberry production in the United Kingdom and Scotland can be divided into three areas which are: pick your own; punnet grade fruit for fresh consumption; or quick frozen and processing fruit.

### **Pick Your Own**

It would appear that the pick your own market for raspberries and strawberries is well and thriving in England and Scotland and seems to be one of the most profitable options with respect to these two crops. With raspberries there is also the opportunity to include some element of machine harvesting either before or after pick your own as well as punnet grade fruit picked first and then opened for pick your own.

Undoubtedly one of the reasons for the success of pick you own operations in the United Kingdom was the sheer density of population, a fact that was to figure in the operation and profitability of many ventures.

Fresh punnet fruit accounted for a large area of raspberry production and, due to the geographical spread of plantations from Kent through to Scotland combined with varietal selection, this enabled fresh raspberries to be presented to the market for considerably longer than is the case here.

In conversation with growers and agents there appeared to be some parallels with respect to a decreasing availability of labour and very real concerns regarding both the cost and availability of labour were expressed.

As is the case with many other agricultural foodstuffs within the U.K. quality control and total quality management (TQM) seen in the raspberry industry was years ahead of our systems with supermarkets building very close relationships with producers and demanding and receiving ever increasing standards of hygiene and accountability throughout the whole chain of production. The TQM controls required growers to furnish documentation with respect to all agronomic practices including fertilizer, herbicide, fungicide and insecticide rates and dates of application. Hygiene was taken to the level of it being mandatory that flushing toilets and washing facilities were on site during picking and smoking by pickers whilst picking was strictly forbidden.

The processing fruit sector appeared to be undergoing a revitalization with respect to increasing areas of biennial cropping for machine harvesting and considerable input was being directed to on-going research and development in the area of mechanised harvesting and machine design by Korvan and Pattenden. Whilst I was not able to view machines picking, there was ample photographic evidence that the ability to pick fruit for punnets or individually quick frozen (I.Q.F.) was almost a reality. Should this research and development result in the ability to harvest fruit of this quality mechanically, it will revolutionize the industry.

The ability of the E.U. to help and aid its farmers was again evident in the raspberry area with some Scottish Co-operative members able to receive subsidies of up to forty percent of the cost of establishing new plantations and up to sixty five percent subsidy on the capital cost of new harvesting machinery. The impact of the destabilisation of Eastern Europe was evident in prices for processing fruit which was trading at Thirteen Hundred pounds sterling per tonne for block frozen sieved fruit in March and had risen to sixteen Hundred Pounds sterling per tonne by August. These price increases were clearly a result of lowered supply from former Eastern block countries who had in the past decimated the Australian and Tasmanian soft fruit markets with a flood of cheap fruit which I am led to believe was as a result of a focus on foreign exchange earnings rather than product value.

### **Biennial System**

The biennial system of production is particularly suited to machine harvesting. As raspberries bear fruit on canes produced in the previous year, existing systems rely on winter pruning of old previously harvested canes and support or tying of the current season's fruiting canes. The disadvantages of existing systems are (a) the plant is required to simultaneously produce fruit and new canes (primo canes) for the next season. (b) the removal of old canes and

tying of new canes is an extremely time consuming and labour intensive operation. (c) the shielding of fruit by primo canes makes for increased difficulty for machine harvesting. Under the biennial system, production is usually undertaken on two sites one of which is in fruit production (on year) and the other devoted to primo-cane production (off year). During the on year any primo-cane growth is chemically suppressed by the use of desiccating agents so that the plant can direct its energy towards maximising fruit production. In the off year primo-cane growth is managed to produce the desired density of canes (which may vary between cultivars) for the next year's fruit production and again this is usually controlled chemically.

In the winter following harvest the old canes are mechanically slashed or mulched back to ground level ready for the next year's flush of primo-canecanes.

The principal advantages of this system are :-

- (a) To maximise production of fruit during the on year.
- (b) Mechanical rather than manual removal of old canes lowers operating costs.
- (c) No undergrowth of primo-canecanes makes for much easier access to the fruit for machine harvesting.
- (d) Total removal of old canes lowers the incidence of over wintering pests and diseases.
- (e) Usually larger and better quality fruit.

The disadvantages are that a larger area of production is required to produce the same amount of fruit as an area operating on the annual system. This is not as great a disadvantage as it may first seem as research in United Kingdom, Germany and Australia has demonstrated that raspberries grown using the biennial system have the ability to produce up to eighty percent marketable yield from an area half the size of an area producing annually.

### **Blackcurrents**

Whilst visiting the United Kingdom it appeared that growers were being hit on all fronts. Prices offered were on a par with those received here at around fifty five pence per kilo or AUD \$1.20 per kilo but there was certainly a degree of unease among growers with expectations of decreasing prices and demand being generally the view. On the agronomic front, my first view of a blackcurrant plantation was to see, to my horror, small excavators moving through the rows removing what appeared to be healthy bushes. Further enquiry revealed the terrible effects of big bud mite and reversionary virus which had the effect of decimating plantations and in extreme cases rendering fields to non-viable units in the course of five years after planting. To see the effects of those two pests was a salutary lesson in the benefit of Tasmania's island status and the vigilance of our quarantine services and the need for their maintenance as we do not yet appear to have been exposed to these pests.

The reaction by the industry in the U.K. has been to breed and develop cultivars able to produce larger crops earlier in the life of the plantation and yields of six tonnes per acre or fifteen tonnes per hectare on three year old bushes were commonly heard. Undoubtedly the credit for these varieties almost invariably resided with the researchers and breeders of the Scottish Crop Research Institute, Invergowrie, Scotland.

In order to be able to harvest these smaller bushes, considerable work and effort had been undertaken by two of the major picking machine manufacturers in Pattenden and S.F.M. so as to lower the picking height and conveyor design and therefore gain much higher recovery than machines used in Tasmania. Discussions with growers also revealed a downside with the newer varieties in that their window for picking was much narrower than ours and in some cases some varieties would drop fruit in the space of four days.

Cultivars used in Tasmania, namely Baldwin and Goliath had not been seen to any great extent for twenty years and I was often given looks of disbelief when our industry was explained. Discussions with breeders at Scottish Crop Research Institute revealed a desire to aid in any trialling programs we might wish to undertake here and I believe that the industry here should be investigating and trialling some of the cultivars available from S.C.R.I.

### **Mint**

Whilst in the United Kingdom I was able to visit some mint producers (Dry Herbs) who, with the aid of Silsoe Research Institute engineers have developed a new method of harvesting mint. The system is based on the principal of stripping leaves from the plant rather than harvesting in the conventional manner of mowing and taking the whole plant. Whilst I was not able to view the machine at work I believe it would have great potential for mint harvesting in there being significant savings in volume, drying and grading for dry herb production. The limitation for oil production would be that distillation may be impaired by uneven steam flow in vats due to the herb not being dried as in our conventional system. Further, personal experience has shown the problems that occur through bruising of leaf under our existing system, of harvesting of peppermint and spearmint often leads to discolouration which detracts markedly from the worth of the product, which leads me to believe that the likelihood of damage to oil sacs using this new system must be minimal and therefore I believe that further investigation of the design of this machine would be strongly warranted.

Sites visited in the United Kingdom ranged from newly planted to mature paddocks and it was noteworthy to inspect spearmint paddocks that had been established for twenty years and were as clean or cleaner with respect to weeds than any seen here. Without doubt a contributing factor to the longevity of these fields was the fact that irrigation was viewed as only being required in the driest of springs. Cultural practices and management techniques were very similar to programmes in use here but there was considerable interest in the residual levels of some fungicides particularly propiconazole.

### **Other Interests**

The advice given by past scholars with respect to not focussing too sharply was particularly apt and I would like to comment on those and some additional areas of interest.

Perhaps the most intriguing and challenging aspect of my scholarship was to put into perspective the many issues that confronted me whilst travelling. What is the relevance of the E.U., G.A.T.T., W.T.O. to Tasmania and its farmers?. Does it really affect my livelihood if the E.U. chooses to support a Social Security scheme disguised as agricultural support? Do the public of the United Kingdom really demand the ever increasing quality standards imposed upon producers or, is it a marketing opportunity started by one of the major supermarket chains so that the other competitors are now playing "keep up with the Jones"? Does the average city dweller really care about the countryside or is it a case, particularly in the United Kingdom, of the tail wagging the dog or of the media particularly the tabloid press selling more newspapers.

These and many other similar questions were raised time and again and so I believe that rather than disgorging facts and figures about what it takes to grow particular crops there are more important issues that I will address from the perspective of Tasmania and its future as I see it in light of my travels.

### **Quality and Total Quality Management**

One of the most striking memories of United Kingdom agriculture was the ever increasing degree of quality control and quality assurance programmes that were in place. Whether it were eggs, fruit, vegetables, meat or dairy products, quality was the key word. The quality was not only at production level but pervaded the whole chain of production, packaging, marketing and distribution. To be a Marks and Spencer supplier was considered to be the epitome of high standards and indeed it appeared that the relationships that had developed between this company and its supplier, producers had progressed to the stage where price had become a secondary issue. Quality assurance in production, continuity of supply and the ability to meet delivery timetables were all ranked above price. As an example capsicums from Holland, identical in size, shape and colour, with each packet containing one each of red, green and orange, all unblemished were outselling those locally produced and bulk displayed at the rate of six to one even though the Dutch produce was thirty five cents dearer. Seasonal produce was it appeared, rapidly becoming not acceptable, with supermarkets demanding strawberries all year round and importing from as far as Chile so as to be able to meet

customer demands. Why Chile? Why not Tasmania? Fresh herbs were coming into the United Kingdom by the tonne from Israeli glasshouse production. Why not Tasmania? The list goes on and on and on. You may ask where is this argument heading? For the past ten years, Government and industry have made much of our clean, green image and I applaud their initiative for I believe it has served us well. In the context of our future I believe that no country will lower the protection it affords to its agricultural sector for the benefit of others. The implications to Australia and particularly Tasmania from GATT are I believe, that we will see ever increasing demands for quality and quality assurance programmes and that the protection devices employed by the major players will be in the form of non-tariff barriers with an emphasis on increasing phyto-sanitary requirements.

As mentioned earlier quality in all aspects is I believe the key to our on-going prosperity and the concept of quality and reliability must be nourished and enhanced through all sectors from production, packaging, processing, freighting and marketing.

### ***Research and Development***

Earlier in my report I commented on the status of research and development with respect to edible fungi in France. Similarly in the United Kingdom, levels of funding by government to research and development have been dramatically slashed. The famous East Malling Research Station, responsible for the breeding of many famous fruit cultivars and root stocks is now sadly a shadow of its former self.

Plant breeding and seed multiplication research and development units have declined dramatically in the United Kingdom. In contrast, the Dutch have invested heavily to the point where most seed houses in the United Kingdom have some degree of Dutch ownership.

It is heartening to see the increase in levels of research and development funding and strength of our various national research and development corporations and again from a Tasmanian perspective I believe that we farmers must pursue and support quality research and development programmes. We must be prepared to accept that some will fail, for to not accept failure will, I believe, narrow our field of view with respect to the myriad of opportunities for potential Southern Hemisphere production.

Equally as important is the acceptance of the need for dissemination and extension of information gained by those organisations undertaking the research and development. Since my return I have noted with concern the recommendation from the Industry Commission that government funding to the various research and development corporations be reduced from the present dollar for dollar funding to a ratio of one to four and sincerely hope that this recommendation is not adopted.

### ***Environment, Politics and Public Relations***

How fortunate we are to live in an area of the world, on an island of only five hundred thousand people. On a visit to the Snowdonia National Estate in Wales I was staggered to learn that arrival visitor numbers to this fifty thousand hectare national park were one hundred thousand people per annum higher than our total population.

We must, I believe, engage in meaningful dialogue with those who wish us to change our practices so that we may be able to make people aware of our desires and needs as farmers before the changes are made for us. In contrast to the United Kingdom where farmers now represent only one point five percent of the population we are fortunate that Tasmanian Agriculture and its flow on effect means that our industry represents in excess of twenty five percent of our states population.

In France the figure is eleven percent and the French are without doubt the most militant farmers I encountered. I am not proposing that we become as militant as the French, but we must become more active in presenting our thoughts and views and I believe we can learn a great deal from the environmental lobby groups with respect to media relations.

The quality issue again is pertinent in this aspect and I am sure that the axiom "you only get what you pay for" applies to us as farmers. How often do we

assume positions that eventually demand more of our time than we are able to commit? The result is that our performance suffers, yet all too often when the question of payment is raised there is a reluctance to support financially even if it is just to a level sufficient to allow our representatives to replace themselves in their business whilst they are acting on our behalf.

As a result of the ever increasing questioning by tax-payers of the need for the E.U. to subsidise farmers the United Kingdom farmer organisations are undertaking an aggressive and proactive attitude to educating children about agriculture and its place in the community. They are actively promoting and encouraging visits by school children to farms and involved in "Buddy" projects whereby children have access to farms and farmers in a bid to help the next generation appreciate the need and worth of agriculture. All too often we, as farmers, assume that the community is as aware of our industry as we are. This is not the case and whilst I don't believe that our position is as desperate as the United Kingdom we should also be actively encouraging schools and their pupils onto our farms so that they too have the opportunity to share our concerns and problems through a better understanding of what and how we live and work.

If we take a critical look at our assets and liabilities as an agricultural production area, I believe our balance sheet is sound and in good health. However, like any business to stand still is to go backwards and the same applies to us as an industry.

If we examine our competitive and comparative advantages of Southern Hemisphere temperate production in a clean relatively unpolluted environment and adapt an attitude of "can do", the world is our oyster. We must, I believe, build and nurture the clean, green image Industry and Government have so capably established over the past decade.

We must further reinforce the quarantine benefit that our Island status provides and we must be ever vigilant in the protection of this status. We must continue to move in the direction of quality assurance and documentary evidence of the claims we issue with respect to our cleanliness and unpolluted production.

We must address the issues of total quality management in all aspects of production, packaging, promotion, freighting and reliability with respect to our agricultural produce. We must continue to actively pursue niche markets and research new and existing agricultural opportunities.

None of the views I have expressed above are new or original but I believe that they have never been so pertinent or important to us as an industry as now. As stated earlier it is my belief that the mechanism for protection of markets and market share combined with the ever increasing capability to identify ever smaller amounts of pollutants and undesirable elements in food of all classes will lead to a heightening of phyto-sanitary requirements throughout the world that will flow on to our domestic markets.

Our answer should be that we are the ones that not only meet the standards but become the standard setters for others to follow. Without doubt there will be some pain attached to this course of action but the rewards to be gained will I believe far outweigh the pain in achieving the position.

There are many examples of success through quality not quantity and one only has to look to the Swiss and their reputation for excellence in watch manufacture and confectionery, or to the Germans for engineering and motor vehicles and closer to home the success of Tasmanian businesses such as Tassal and the premium it receives for its product on international markets, to international Catamarans and the market they have developed for a quality product and to Essential Oils of Tasmania whose peppermint oil has become the standard against which others are measured by some of the major food and fragrance houses of the world in just five short years.

In conclusion I wish to thank the Australian Nuffield Farming Scholars Association for giving me the opportunity of a lifetime to view some other parts of the world and to better appreciate all of the things we take for granted about where and how we live and farm. In closing I believe we, in Australian and particularly Tasmanian agriculture, are on the threshold of an era of unprecedented opportunity and our greatest impediment will be our reluctance to grasp the nettle and run with the opportunity.

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