The Board of Management is elected by the Federal Council of The ADFA.

Grower Members
Mr F. H. GILL, Red Cliffs, Vic., (Chairman).
Mr D. ANDARY, Berri, SA.
Mr V. L. BYRNES, Coomealla, NSW.
Mr J. L. T. DICKIE, Merbein, Vic.
Mr J. DUFF, Caversham, WA.
Mr H. K. TANKARD, Irymple, Vic.
Mr R. W. TILLER, JP., Cadell, SA.

Packer Members
Mr R. G. HORSBURGH, Vic.
Mr W. A. JACKSON, Vic.

Agent Representatives
Agents Representatives attend Board meetings in an advisory capacity.
Mr I. SMITH, Vic.
Mr R. L. WOOD, SA.

GENERAL SECRETARY-MANAGER OF THE ASSOCIATION
Mr L. P. Burgess

HEAD OFFICE
"Sunraysia House", 24 Jeffcott Street, Melbourne, 3003.
Telephone: 328-3019, 328-3010.
Telegraphic Address: "Adfasson, Melbourne".

CORRESPONDENCE AND CONTRIBUTIONS
Reports and contributions are welcomed and should be addressed to the Editor, "Australian Dried Fruits News", Box 4524, Melbourne, 3001.

Branches and District Councils of The ADFA are asked to forwards items of interest through their appointed Press Correspondents.

Advertisers may obtain details of rates on application to the General Secretary.

EDITOR
Mr L. P. Burgess

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COUNCIL PHOTOGRAPHS
The photographs of Federal Council Delegates in this issue by Robert Pell.

OUR COVER PICTURE
The container ship "ACT7" in the Tilbury container docks, London. The "ACT7" is the latest container ship in the ACTA line which is a major carrier for Australian Dried Fruits.
EDITORIAL

With our critics again suggesting that the long-term salvation of the industry lies only in the arms of a single statutory marketing board the time is perhaps opportune to give an outline of ADFA policy.

Contrary to the belief of some, the Board of Management is not opposed to the principle of a statutory marketing board. It has investigated the matter on many occasions, in depth and, I believe, impartially and has yet to be convinced that such a board can work.

Before investigating the matter any further The ADFA Board would need to be assured on two points:

1. That the Commonwealth or States, acting alone or in conjunction, have the ability to impose a compulsory marketing scheme on the industry; and
2. That such a board would demonstrably bring both immediate and long-term benefits to growers additional to those which they now already enjoy.

The second point may require some judgement assessment, but the first is based solely on fact, and it is on this point that I have grave doubts. Can the government enforce a scheme, which to be effective must include the power of acquisition, on an industry in which almost its total production is grown within 20 or 30 miles of a State border? Will the non-Association packer, who has consistently refused to join The ADFA because of the need to equalise, submit to a statutory board if there is any possibility of challenge? I think not! Would ADFA packers, who have given total loyalty to the voluntary system over many years, give the same loyalty to a compulsory scheme? Again there must be a big question mark.

The first attempt at statutory marketing control was made in 1924/1925 when the State Governments of Victoria and South Australia introduced legislation to enable them to determine the amount of any variety of Dried Fruit which could be sold in Australia, and compulsorily acquire fruit processed by packing companies which would not observe the legislation. The Act was challenged by James in 1927 and, subsequently, was declared invalid in respect to both the above requirements.

As a result, in May 1928 the Commonwealth Government introduced supporting legislation. This Act enabled the Commonwealth, acting through the State Boards, to determine the quantity of fruit a packer must export in any particular year, and placed severe restrictions on the inter-state movement of fruit.

This Act also was challenged by James and in the now historic ruling by the Privy Council in James v. Commonwealth, was ruled invalid.

Since then there have been many challenges to legislation affecting the free movement of products between States and, in each case, Section 92 of the Australian Constitution has proved superior.

The forthcoming test of wheat legislation, which I understand is based on the status of Commonwealth/State complementary legislation to compulsorily acquire a product, may resolve this vexed question once and for all. If the High Court rules in favour of the Wheat Board we will, of course, be entering a new ball game and the whole rules of marketing boards will need to be reassessed. But until then it has yet to be proved that a statutory marketing board can acquire a product against the wishes of the owner, if that product is destined for interstate trade.

The second point on which the Board needs assurance is more complex. The Board will still need this assurance even if the first point is satisfactorily answered. But until the first point is proven there is really not much use in pursuing the second. It must be pointed out, however, that Dried Fruits is not a marketable product when delivered to packing companies, it requires further processing. If growers were required to wait for a delivery payment until their fruit had been processed they would clearly be much more dependent on pre-delivery finance than they are now.

FRANK GILL, Chairman.
SALES TO AUGUST 25

Vine fruits

Australian deliveries for the five months to 25th August continue to show an increase over the previous two years. Comparative figures for the five months (in tonnes) are:

<table>
<thead>
<tr>
<th>Year</th>
<th>1975</th>
<th>1976</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currants</td>
<td>1,373</td>
<td>1,611</td>
<td>1,681</td>
</tr>
<tr>
<td>Sultanas</td>
<td>5,641</td>
<td>7,906</td>
<td>9,123</td>
</tr>
<tr>
<td>Raisins</td>
<td>1,074</td>
<td>1,129</td>
<td>1,068</td>
</tr>
<tr>
<td>Total</td>
<td>8,088</td>
<td>10,646</td>
<td>11,872</td>
</tr>
</tbody>
</table>

Agents are confident that they will need the full allocation of 19,000 tonnes for the Australian market.

Export orders for Sultanas accepted to date total 29,373 tonnes for shipment to:

- New Zealand: 5,525 tonnes
- Canada: 8,940 tonnes
- UK/Continent: 10,071 tonnes
- Japan: 3,071 tonnes
- Other: 1,266 tonnes
- Total: 29,373 tonnes

Uncommitted stocks of Sultanas, after allowing for the Australian allocation of 19,000 tonnes, now total 8,442 tonnes.

If Australian sales of Currants and Raisins reach the expected levels of 4,000 tonnes and 3,500 tonnes respectively, Currants will be fully committed and only 86 tonnes of Raisins remain to be sold on export.

Apricots

Although the three months' special promotion has led to some increase of sales in Australia, unsold stocks as at 25th August still remain high at 367 tonnes. The promotion allowance will now continue for a further three months to December.

Australian sales for the past three years of ADFA fruit have been:

<table>
<thead>
<tr>
<th>Year</th>
<th>1975</th>
<th>1976</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apricots</td>
<td>545 tonnes</td>
<td>480 tonnes</td>
<td>564 tonnes</td>
</tr>
</tbody>
</table>

Export sales have not been easy this year and could become even more difficult in the short-term. The USA 1977 crop is estimated at 4,600 tonnes to which must be added a carry-over from Season 1976 of 2,000 tonnes giving a total availability of 6,600 tonnes. Most of the carry-over is stated to be in small sizes.

Peaches/Pears

Only 41 tonnes Peaches and 5 tonnes Pears remain unsold from the low production of 140 tonnes and 75 tonnes respectively in Season 1977.

Prunes

Prune sales show an encouraging up-trend with comparative figures for the five months being:

<table>
<thead>
<tr>
<th>Year</th>
<th>1975</th>
<th>1976</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prunes</td>
<td>886 tonnes</td>
<td>1,034 tonnes</td>
<td>1,165 tonnes</td>
</tr>
</tbody>
</table>

With the exception of a small tonnage, all Season 1976 Prunes have been cleared and final adjustment is now in process.

SECTION 92

Wheat legislation at test

Can a statutory marketing board compulsorily acquire a product? This question may be given its final test before the High Court of Australia later this year.

Major stock food companies have challenged the right of the Australian Wheat Board to prevent them buying non-Board wheat from interstate.

The Dried Fruits Industry has a vital interest in the case. On two earlier occasions legislation to enforce orderly marketing within this industry have failed because of Section 92 of the Australian Constitution.

The wheat legislation challenge is believed to be the first test case aimed jointly at Commonwealth and State complementary legislation.

Retiring age

A retiring age of 70 years has been fixed by The Australian Dried Fruits Association for members of its Board of Management, committees and delegates to Federal Council.

The decision, made at Federal Council 1977, followed advice that personal accident insurance was no longer obtainable on members 70 years of age or over attending meetings.

The alternative to the retiring age decision would have been for members to enter into agreement with the ADFA that they attend meetings at their own risk.

London office closes

The London Office of The Australian Dried Fruits Control Board closed on September 30. The Office was first opened in 1925 and played a large part in building up the British market.

Alterations within The Australian Dried Vine Fruits Industry and changes in the marketing arrangements for its products in the United Kingdom are the reasons given by the Board to close the Office.

Mr A. E. Sage, the Board's London Manager and European representative, will continue to be employed by the Board in the United Kingdom until January 31, 1978.

Following Mr Sage's retirement, The Australian Dried Fruits Control Board is to be represented at meetings of the Sultana (Raisin) Producers' Liaison Committee, London, by Mr R. Walls, Manager, Australian Dried Fruits (Europe) Limited, the exclusive Agent for Australian Dried Vine Fruits in England, Wales and Scotland.

4 October, 1977

DRIED FRUITS NEWS
INDUSTRY ADMINISTRATION

"The Australian Dried Fruits Industry has a long history of self-help and regulation achieved through the co-operation and loyalties of its growers, packers, agents and organisations." This was said by the Board Chairman, Mr Frank Gill, in replying to criticism by the Victorian Farmers' Union of the excise and industry re-organisation proposals approved by ADFA Federal Council 1977.

Is that a valid statement, and just how strong is grower representation within the industry? The following statement of industry administration should remove any doubts.

Federal Council
The supreme body of The ADFA is its Federal Council which meets at least annually. In addition to determining Association policy its duties include the election of Board members, the appointment of Committees and the setting of levy rates. It is the sole custodian of The ADFA Constitution and amendments to Rules and Regulations must be approved by at least two-thirds of the delegates attending Council.

Representation at Federal Council is: growers 43, packers 5, agents 3, a total of 51.

Of the 43 grower delegates attending Federal Council 1977 two are heavily involved in the day-to-day administration of packing companies.

Board of Management
There are nine members on the Board of Management; seven growers and two packers. Two agents' representatives also attend Board meetings without vote during discussion on marketing items. The Board usually meets for three days, agents being present only on one day.

Processing
In almost all areas, except in South Australia, growers have the option of delivering fruit to grower-owned co-operatives or to proprietaries. In South Australia all ADFA packing sheds are co-operatives.

There is almost an equal balance between the quantity of fruit being processed by co-operatives and proprietaries.

The status of packing companies in respect to grower financing is no different to that of a wool broker or stock and station agent in the agricultural or pastoral industries.

Selling agents
Even before the arrangements between CDFS Pty. Ltd. and G. Wood Son and Co.

Limited, CDFS Pty. Ltd was handling Some 95 per cent of total Australian production. From Season 1976, with the exception of Prunes and a small quantity of Currants, it will be the sole selling agent.

CDFS is owned by packing companies with a shareholding of proprietaries 40 per cent, and co-operatives 60 per cent. Cooperative packers are, in turn, owned by growers.

There are seven directors on the Board of CDFS, two representing proprietaries and 5 representing grower-owned cooperatives. These five could be growers.

Both the rate of selling and promotion commission which may be charged by agents against fruit proceeds are determined by the Rules and Regulations of the Association and any variation of these rates would require a two-thirds majority approval of Federal Council.

Other costs and charges which may be debited against the pool accounts are also determined by The ADFA for Australian sales or by the Australian Dried Fruits Control Board for export sales. The agents' sole area of profit is the 2½ per cent commission allowed by The ADFA. With CDFS 1½ per cent is rebated back to packing companies as an offset against administration costs and any resulting profit from the remaining 1 per cent is, in turn, rebated through packing companies to growers. (Repeat, to growers, not packers.)

Australian marketing
The ADFA Board of Management sets the Australian selling prices for all varieties of Dried Fruits. It also determines the rate of trade discount and minimum quantities which agents may supply under the free-in-to-store selling policy. The Board seeks the advice of, but is not bound by, the agents' representative on the Board when setting prices. It also seeks the advice of distributors.

Export markets
Prices and terms and conditions of sale on export markets are set by the Australian Dried Fruits Control Board. This Board comprises 11 members; seven representing, and elected by, growers, three members with special marketing or commercial experience appointed by the Minister, and one Government representative.

In summary we have:

- a grower-dominated Federal Council which, amongst duties, sets agents' selling commission and elects the Board of Management.
- a grower majority Board which sets Australian prices and terms and conditions of sale.
- a grower majority Statutory Board which sets export prices and terms and conditions of sale.
- an Industry-owned selling agent which handles over 95 per cent of total Australian production and in which grower-owned co-operatives enjoy a majority of both shareholdings and Director appointments.
- a free choice of packing companies with present tonnage being almost equally shared between proprietaries and grower-owned co-operatives.

Packer Indebtedness
Our critics have also again raised the hoary old perennial of growers being unable to vote freely at Council because of their indebtedness to packing companies. This premise, of course, pre-supposes that the majority of growers are, in fact, heavily in debt to packers. What is the real position? According to the latest information from Sunraysia:

- Only 30 per cent of the August progress payment to Vine Fruit growers in NSW and Victoria will be credited to grower accounts, the balance being paid in cash. This means that over 70 per cent of growers are not only free of long-term debt to packing companies, they are also free of current account debt and still have a large equity in fruit not yet sold.
- If service payments made by packers on behalf of growers — such as water rates, telephone, SEC, etc. — were excluded, over 80 per cent of the August payment would have been in cash.
- The estimated, so-called, hard core indebtedness to packers is probably not much in excess of 10 per cent and is certainly below 15 per cent. I wonder how many other industries can claim the same?
Market equalisation

Federal Council has given the go-ahead to the Board of Management to continue with its negotiations with the Commonwealth Government to introduce a compulsory equalisation scheme.

The proposal submitted to Federal Council envisaged a scheme based on, but not restricted to:

"An excise on packed weight production payable by Packers on behalf of growers with an immediate credit of excise on export sales and the remaining proceeds distributed back to growers, Packers in proportion to total production."

Council gave its unanimous support to this concept and authorised the Board of Management. Mr Frank Gill, said that for too long a few growers and one Packing Company have been permitted to avoid their export responsibility. The time had now come for an equal sharing of markets whether growers are members of The ADFA or not.

In what must be the most important move towards industry rationalisation since the formation of Co-operated Dried Fruits Sales Pty. Ltd. in 1926, CDFS and G. Wood Son & Co., Ltd. have announced new selling arrangements.

In a dramatic statement to Federal Council 1977, Mr J. C. Harrison, General Manager, Irymple Packing Pty. Ltd. and a Director of CDFS. said that discussions had been held between the SA Joint Venture Packers, Packers associated with CDFS, G. Wood Son & Co. Ltd. and CDFS. Mr Harrison then went on to say:

"These discussions were held in a very cordial atmosphere, all discussion members recognising that the present situation imposed upon us some unnecessary costs which reduced realisations to growers and which required correction.

"Although there are some very small matters still to be tied up there has been very firm agreement in principle as follows:

1. From the commencement of the 1978 crop all fruit handled by the Joint Venture Packers in South Australia will be marketed through CDFS Pty. Ltd.

2. As a result of this, G. Wood Son & Co., Ltd. will cease to operate as a direct Agent, G. Wood Son & Co., Ltd., however, will continue as a Sub-Agent of CDFS Pty. Ltd., and is guaranteed tonnages of all fruits to enable it to maintain its present place in the trade.

G. Wood Son & Co., Ltd. will continue to receive the full amount of the promotion levy on the guaranteed tonnage plus the amount of promotion monies agreed from time to time on purchases by Anchor Foods over and above the guaranteed tonnage, thus maintaining what we all regard as a vital competitive element.

3. CDFS Pty. Ltd. will be the sole exporter of Australian Dried Vine and Tree Fruits.

"The effect of the decisions will be that an industry pool will automatically operate for all fruits other than Prunes, commencing with the 1978 crop. This will bring a greater degree of equity to all growers and achieve a significant saving in administrative costs."

The formation of CDFS back in 1926 was the first move towards industry rationalisation. At that stage almost each Packing Company had its own Selling Agent, each Packer competing for its share of the Australian market. The effect of CDFS was to concentrate the selling arrangements of Victorian Packers and later most South Australian Packers through CDFS. In its first year of operations the average commission rate paid to Agents was reduced from in excess of 6 per cent to 3 per cent and later CDFS was to operate on a much lesser commission than this.

The new arrangements will also bring benefits to G. Wood Son & Co., Ltd. This company which draws its fruit exclusively from South Australia has, for some years, been concerned about its declining access to fruit. This is no fault of the company but is purely a reflection of the declining production in South Australia where, in the ten years 1967-1977, total production has dropped from over 26,000 tonnes to less than 5,000 tonnes. For Sultanas, the main selling line on the Australian market, the respective figures are over 12,000 tonnes in 1967 to less than 1,500 tonnes in 1977.

Under the new arrangements G. Wood Son & Co., Ltd., as a Selling Agent, will be given an assured tonnage of each variety each season. The allocation is quite generous and is in excess of the average handlings by Woodson over the past five years.

DRIED FRUITS NEWS
River salt position worsening

On 16 August ADFA Salinity Committee member, Mr Jack Seekamp, attended a meeting of VRIPRO at Bendigo, where an array of speakers from the Science Education Department, Soil Conservation Authority, Department of Agriculture and SR & WSC reviewed recent work on salinity studies in Northern Victoria.

Report by Mr Seekamp

All the studies indicated that the position has changed considerably for the worse since the Gutteridge report appeared in 1970. The suggested concept for remedial action continues to soar and the apparent superficial cost/benefit index figures become more and more unfavourable for a political decision to vote for funds for corrective and diversion works.

Clearly brought out was the fact that nearly all our salinity problems are the result of mis-management by white settlers from catchments through distribution to final irrigator.

A new factor stressed at this meeting was the increase in dry land salting in both the high mountain regions and, particularly, along the northern slopes. Arising from a too great zeal in clearing deep-rooted trees and replacing with shallow-rooted crops and pasture, the result has been increased salinity in stream run-off and larger contributions to the subsurface deep lead flows under the Goulburn, Campaspe and Loddon Plains.

Pressure levels in these deep leads continue to rise — with further projections showing free-flow artesian conditions probable at many sites. Tube well drainage installations to control these levels are well advanced in the Goulburn Valley. While considerable re-use of this drainage water is planned, the time must come when salt has to be removed from the area, and the only apparent sink seems to be the river.

Through all of the areas, distribution channel losses continue as a contributor to the water tables.

At irrigator level, disappointment was expressed at the very low rate of call on the Irrigation Advisory Service of the SR & WSC. Irrigation and drainage practices are not improving as fast as they should. An injection of low interest loan money might assist but the present rural outlook destroys much of the incentive for growers to act.

Of interest is the different emphasis on immediate need between the up-river Kerang, Murray, Goulburn areas and the downstream Mallee areas.

Their need is to get rid of salt and salty water, while downstream in the Mallee we want fresh water delivered to us. They want a salt water canal to the sea — we need a fresh water canal to go around their area. At this stage both seem equally unattainable.

The Gutteridge plan was designed to reduce river salinity fairly considerably. The $45 million 1975 strategy for Northern Victoria might have reduced it a little but the present inactivity could double the salt load within another few years.

Even a political decision now and an immediate voting of funds might not be in time to save the position in the Mallee zone if a cycle of dry years returns.

Maliee irrigators must maintain pressure for action while they, at the same time, continue to improve their irrigation and drainage methods if they are going to survive until the Government takes action.

This meeting only reviewed the Victorian position. A quick peep under the Murray shows that the worsening problem extends into the Wakool area with no hope of immediate solution, and that the Murrum-bidgee capacity to provide dilution flows is ever decreasing while its quality is also dropping.

Bubbles now

We have sprinkling and we have dripping — now we have bubbling.

A new type of irrigation system was recently proposed by S. L. Rawlins of the US Salinity Laboratory in Riverside, California, USA. The system is provisionally called “bubbler” irrigation and is specifically designed for tree crops. The system uses a low-cost corrugated plastic pipe, normally used as a drain pipe, as a low pressure water delivery line. Small 8 mm tubings are tapped into the main line and serve as laterals to individual trees. Our system is simple to install and is nearly maintenance free. For irrigation only a coarse strainer at the intake is necessary.

The water may be pumped into the main line using low lift, low energy pumps, or, where a water head is available from an irrigation canal at a higher elevation, no pumping is necessary. Only 60-120 cm of water head is required. The laterals are extended vertically and adjusted in such a way that a desired uniform rate of flow is obtained from each “bubbler” (lateral) depending on the head provided and the head loss along the line. The system was tried successfully at Taca, Arizona, where the rate was adjusted to about 2.5 litre/hr.

The cost of materials for the system was $925 per ha as compared with almost twice as much for some drip irrigation systems. At Taca four men managed to do all the plumbing for 136 orange trees (about 14 ha) in one day, after trenches were dug between rows of trees and smaller lateral trenches were run to individual trees. This system is not yet commercially available.

(WRFA Newsletter)

Henry Tankard addressing Council; Robin Wood in background.

October, 1977
Science Minister addresses Council

Official opening of Federal Council 1977 by Senator the Hon. J. J. Webster, Minister of Science, and Leader of the National Party of Australia in the Senate.

Mr President of Federal Council, the Board Chairman, members of the Board of Management and other delegates who are present. I also acknowledge Mr Peter Arnold who is a MHA from SA and the Hon. Ken Wright MLC and Milton Whiting MLA from Victoria.

Mr President, you said I had flown from Queensland today. I spent yesterday in Brisbane visiting some CSIRO Divisions. CSIRO is a very important branch of my portfolio and the research it is doing has significant ramifications for primary industry.

I have not come directly from Queensland today. I came via Sydney where I attended a Cabinet meeting which had been called by the Prime Minister for the purpose of considering budgetary submissions made by various primary producer organisations.

I was sitting next to Ian Sinclair (Minister for Primary Industry) who apologised to you, Mr President, for his inability to be with you today, but it is nearly an impossibility for him to be able to attend all the functions that he is required to do. As I am proud to be a Victorian and proud to be amongst those of you who produce in Victoria, I am pleased to represent him here today. Ian gave me a note or two to comment to you, but the notes that I have generally cover the points that he has raised. However, he represents that he is not with you — please accept his apologies.

I am pleased to be standing in for Mr Sinclair, Mr President, because CSIRO, again the major research organisation in Australia, falls within my portfolio and as such, has had a very long and happy association with the Dried Fruits Industry, especially the Dried Vine Fruit growers whom I know make up the bulk of your members.

The industry first contacted the old CSIR in Sir David Rivett's day as Chairman and a research facility was set up. Even before that time the industry had demonstrated a keen interest in research and improved techniques. Those early growers in the Sunraysia district, who co-operated with the local school teacher, a Mr A. V. Lyon, to investigate black-spot problems had a great deal of initiative and foresight. Their self-help was commendable and also set the pattern for very close co-operation with CSIRO in subsequent years.

Over the many years CSIRO has continuously sought to improve research facilities at Merbein and the first laboratory was built there as long ago as 1919. The second came in 1936 and the most recent addition was completed in 1972.

Since 1960 extensive experimentation has been under way to propagate new varieties of grape so that later CSIRO's breeding programme has resulted in the successful commercial release of four new varieties — one for drying and three for wine production. This research work will continue in an attempt to develop more dual-purpose varieties.

The division of horticultural research at Merbein was the first to import a mechanical grape harvester. While there are still some problems to be overcome before mechanical harvesting is 100 per cent satisfactory, it is obvious that, with the wage explosion which I suggest to you is the most important feature in the problems which beset primary industry, and indeed, most of our industries at the present time, and with the increasing demand for our workforce to accept strenuous outdoor labour, there will be no alternative to mechanisation if the industry is to survive.

In recent years, indeed recent months, solar energy has become a very fashionable topic. Of course, your industry Mr President, has been utilising solar energy since the very first dried fruits were produced so it is nothing new to you. Nevertheless there are probably further refinements which could be made. CSIRO at Merbein is constantly examining means of reducing the costly business of preparing fruit for sun-drying, and there are moves to be made such as trellis drying which apparently is a good development in this direction.

I am confident that in the future, and I concede that it may be well in the future, solar energy will be utilised in the alleviation of the salary problems which are so detrimentally affecting so many of our highly productive irrigation areas.

Mr President, I have taken the liberty to mention some of the work of my own department and that work, I can assure those of you who are interested in rural production generally, will find strong support in CSIRO in its various areas for the alleviation of problems as they come forward. The industry which is possible to solve from expert scientific advice. I am particularly proud of the achievements over the years and with the association which you have had with CSIRO and its direct interest in the industry.

I now want to have a look at the current situation within your industry. I view it that inflation is the worst enemy of the rural producer, especially the rural exporter and, as such, a significant percentage of your production must find an outlet on overseas markets, inflation is particularly detrimental to you.

Historically, Dried Fruits have met stiff competition from low production cost countries and this situation has been severely aggravated by high levels of inflation in Australia.

Progress has been made in winding down inflation but there is still a long way to go. In the final year of the Labor administration inflation was running at 17 per cent. I mention this not to be political but to get a recognition to people of the change that has occurred because it is not generally recognised throughout the community. Last year inflation was down to 10 per cent, and the index figure for this year indicates a further improvement. The disturbing factor has been the rapid increase recently in the index of farm production costs relative to other industries, e.g., up to 1972 price rises were more or less uniform with the consumer price index and farm costs increasing between 2½ per cent and 6 per cent p.a. Since then, however, there has been a widening disparity.

In 1972-1973 the index of farm costs rose by 8 per cent and continued to escalate, reaching a peak of 30 per cent in 1974-75. As a result the average net farm income per farm in Australia has fallen behind average male earnings and there is, unfortunately, an increasing disparity between the urban and the rural living standard.

The Government is succeeding, it believes, in its efforts to reduce the inflationary rate, but to do so it is necessary to implement unpopular policies. The abuse which, as I read it, dished out by opponents of the Government at the present time means adherence to these policies is sometimes difficult but the Government is determined to control inflation. Without such control there can be no salvation for our rural industries. You people know that well.

It seems to me most likely that inflation is the principal cause behind the decline of the Dried Apricot and Peach industries. They have simply been priced out of the DRIED FRUITS NEWS
market. No doubt the Prune growing districts around Young and in the MIA are suffering similar pressures.

In the Dried Vine Fruits Industry exports have traditionally accounted for from between 50 and three-quarters of all production. The basic problem, as you are all too painfully aware, is that these exports have fluctuated widely in price. It so happens this year that export prices have been remunerative but this is largely due to a Californian crop failure and we can scarcely expect to profit from the misfortunes of others for very long. These fluctuating prices have forced considerable adjustment upon the industry with the diversion of dual-purpose grapes to wineries.

I believe that the grower himself is best able, with advice if necessary, to make his own management decisions rather than be told what to do by Government. In this respect, Mr President, the ADFA has two vital functions.

One, to provide advice to the industry on the directions it should take and two, to speak for the industry to Government and the public in general. As a result the individual grower makes a better informed management decision and the Government in its decisions affecting industry obtains a cohesive view of industry needs and views.

It is, of course, not within the jurisdiction of this Federal Council to make individual management decisions for growers. Neither is it in the jurisdiction of the Government. However, with the severe impact of costs and the associated need to adjust there are steps which the ADFA and the Government can take to assist growers.

The Government decision to devalue was a reflection of the reduced competitive position of Australian export industries and the Government's determination to redirect a fair share of this income and thus make the tax burden more equitable.

The Income Equalisation Deposit scheme is available to all rural producers to assist in overcoming the problems associated with years of fluctuating returns due to market price movement.

In an industry such as Dried Fruits which is so heavily dependent on the notoriously variable export return the Income Equalisation Deposit scheme could be very useful in equalising income and thus making the tax burden more equitable.

The Dried Fruits Research Committee is another example of industry/Government co-operation. Over the years this committee has presided over the expenditure of joint industry/Commonwealth Government funds to finance research into industry technology problems. This has been a particularly valuable partnership with the industry benefiting from improved technology and the community from a productive industry supplying Dried Fruits on a stable basis.

Mr Burgess, your General Manager, made the comment, apparently to Ian Sinclair, that he believed that the industry now holds the record for having the most delayed report in the history of the IAC. I am not certain that that is the case. I am sorry that I cannot give you a better position statement today. However, I want you to assure you that the matter has been under close discussion and close scrutiny in Government circles in Canberra. I believe that there can be an announcement expected shortly on that Report.

I know that the Association and the industry have reservations about the Commission’s recommendations and that you have sought to strengthen the industry operated equalisation scheme. I understand that this self-help scheme is under pressure because of the refusal of one packing house to participate.

The Minister for Primary Industry has indicated to your executive that he can see no objection in fundamental principle to the general lines of the solution proposed, but understandably he cannot give an unqualified reaction until a detailed proposal comes before him.

I would expect that this meeting will discuss the issue that I have mentioned with a view to presentation of a firm report.

Mr President, Governments come into contact with many primary industry organisations and pressure groups from time to time. Sound advance knowledge is something which the Government requires. Many industries do not provide Government with sound advice. Some are realistic and competent, others are less so. I think that it is fair to say that, since its formation by the amalgamation in 1907 of the Mildura Fruits Association and the Renmark Dried Fruits Trust, the ADFA has consistently presented well-documented submissions to the Government, I know of no other farmer body which can claim a 98 per cent grower membership. This high level of grower membership and participation has doubtlessly been instrumental in the formation of cohesive policies by this Association.

It is also pleasing to note that the bulk of the 30 registered packing establishments are also members of the Association. Perhaps more could be done to encourage those still outside to join the fold.

The Dried Fruits Industry is a most important industry in this State of Victoria. Although the industry is represented right across southern Australia it is concentrated within Victoria’s Sunraysia region. Whole districts are dependent upon the industry’s continued prosperity and the employment of many people throughout the economy is directly related to the fortunes of the industry.

Members of Parliament representing Dried Fruits electorates are assiduous in their promotion of the industry. In the forthcoming Federal electoral re-distribution I would advocate to you, Mr President, that you make every attempt to ensure that the voice of the fruit grower is not diminished in Federal Parliament. It is appropriate that you keep an eye on the re-drawing of electoral boundaries and make certain that you retain a strong voice in the Parliament.

Mr President, ladies and gentlemen, in declaring this 1977 Federal Council officially open, I want to commend you for your work in the past, to wish you well in the future, and assure delegates of the Government’s continued concern and interest in the prosperity of the Dried Fruits Industry.

Thank you very much, Mr President for having me here. I wish you well with your conference.

DRIED FRUIT TO ANTARCTIC

A gift parcel of Australian Dried Fruits was dropped to each of the 20 members of the Australian expedition on lonely Macquarie Island on September 7. The gifts were arranged by The ADFA at the suggestion of Senator Webster.

In a history-making flight a RAAF Orion from Edinburgh, South Australia, made the first-ever mail drop to the sub-Antarctic Base. The base has radio-telephone communication with Australia but previously suffered a year long absence of mail.

Staff at the Mildura Dried Fruits Centre packed the dried fruits in special plastic containers so that it would not be damaged during the drop.
SUMMARY

In Sunraysia, many grape rootstocks with only moderate resistance to rootknot nematodes give vigorous vines in infested soils, with no evidence of decline over a period of 10-15 years. Although the number of nematodes breaking the resistance of the stocks may be expected to increase with time, the increased vigour and salt tolerance of the nematode resistant rootstocks justifies their introduction. It seems unlikely that other species of rootknot nematode that might accidentally be introduced would affect the resistance pattern of the rootstocks.

CSIRO field trials have shown that Salt Creek (Ramsey) rootstock is most satisfactory for Sultana on light textured soils subject to nematode problems. It has good resistance to the rootknot nematode. The consistent performance and vigour of this stock more than compensate for propagation and grafting difficulties. At normal planting distances higher yields can be obtained from Sultanas on Salt Creek if wide trellis is used to reduce shoot crowding.

Salt Creek is unsatisfactory as a stock for Gordo because of incompatibility problems that are not fully understood. No definite recommendations of preferred rootstocks for Gordo can be given at this time. Salt Creek appears satisfactory as a stock for Currant varieties. Several wine varieties have been shown to grow and yield well on Salt Creek, but there are indications that, for black grapes, changes in grape composition resulting from the use of some rootstocks may adversely affect wine quality.

1613 and Harmony cannot be recommended as nematode resistant rootstocks in Sunraysia because their susceptibility to root lesion nematodes may prove damaging.

Plant nematodes in Murray River Vineyards

In 1954-55 CSIRO Merbein conducted a preliminary survey of plant parasitic nematodes in Sunraysia vineyards (Seinhorst and Sauer 1956) which showed that rootknot nematode, citrus nematode and root lesion nematodes were widespread. This was the first time that citrus nematode was recorded as a parasite of grapevines. Later, a more comprehensive vineyard survey comprising one soil sample from each 4 ha of vines in Merbein and Robinvale (Sauer 1962), showed a correlation between the occurrence of rootknot nematode and the soil texture. Rootknot infestation was more common in soils of light texture. Recent work in South Australia (Stirling 1976) showed a similar situation in the vine areas of that state.

It was soon obvious that rootknot nematode caused severe damage to the grapevines. Control measures tried (1955-56) included sawdust mulching, soil treatment with the broad spectrum insecticides Malathion and Systox, and soil fumigation with ethylene dibromide (EDB) and dibromochloropropene (DBCP). EDB (15 per cent w/v) injected at 450 l/ha killed the vines in the treated area but caused some improvement in growth of vines outside the perimeter of the plots. DBCP (92 per cent w/w) at 225 l/ha severely retarded growth, which continued through the autumn, though little wood matured. The same chemical at 56 l/ha improved growth of infested vines for a few years, but did not appear to give economic responses. Other treatments showed, at best, very minor effects. Meagher (1969) reported good responses to fumigation where vines were reasonably vigorous before treatment.

Citrus nematode proved more susceptible to chemical control. Extensive fumigation trials (Sauer 1966) showed that DBCP (28 l/ha) gave effective control of this nematode, and good yield responses in old infested vineyards.

Vine rootstocks

Snyder (1936) showed that a number of species and hybrids of Vitis were resistant to rootknot nematode and could have potential as resistant rootstocks. Lider (1960) reported the results of rootstock trials in California spanning more than 20 years, which confirmed this potential. The stock used in these trials under the name...
Salt Creek was later shown to be the variety Ramsey (V. champini), not the true Salt Creek (V. doaniiana).

Small scale field tests in Sunraysia in 1957-59 showed some resistance to rootnematode nematode in phylloxera resistant vine rootstocks established in the district. None of the highly resistant stocks used in California was available in Australia. Quarantine requirements due to the threat of phylloxera and kraft diseases made it difficult to import vines, but the rootstocks 1613 and Salt Creek (Ramsey) were released for use in Australia in 1962, and Dogridge in 1984.

A stock that had been used successfully in Western Australia under the name "Teleki" was identified as Schwarzmanni, indexed for virus, and released by the Victorian Department of Agriculture about 1965. A number of hybrid stocks from the University of California, Harmony, and SO4, were introduced to Victoria in 1965. Two of these hybrids, K51-40, and K51-32, have been used on a limited scale. More UC hybrid stocks have been imported by Victoria recently.

In 1962, a trial consisting of 108 randomised blocks, each of three single vine plots, was planted in virgin sandy loam, free of plant parasitic nematodes, at Coomealla. The vines were brought from a commercial nursery, and unselected Sunalta scions were grafted on Salt Creek and 1613 rootstock. This was the last trial planted using non-clonal scions. Harvest records were kept from 1965-72 inclusive (Table 2). In winter 1968 the experimental design was modified by superimposing a trelis and pruning trial (May, Sauer, and Scholerfield 1973). Sunalta grafted on Salt Creek and trained on wide T-trelis (cane wires 1.2m apart) yielded about twice as much fruit as ungrafted Sunalta on standard T-trelis (cane wires 0.3m apart).

In 1965 a second replant trial was begun on the same farm as the 1960 trial. Half the existing vines, variety Gordo, were sprayed with 2, 4-D weedicide in April in an attempt to reduce the amount of living roots in the soil. All vines were removed at the end of July. The soil was fumigated with DBCP 2.1/t in September and in October. There were 18 randomised blocks of 6 single vine plots. Half the vines in each block were on soil where weedicide had been used. All replants were Sunalta, CSIRO clone H1, on their own roots or grafted on Salt Creek or 1613. Grafted vines were used as guards between areas where weedicide had been used. No effects of weedicide treatment could be demonstrated. In 1968 a series of 10 x 10 latin square trials with single vine plots was planted in privately owned vineyards around Sunraysia. Twelve rootstocks with Sunalta scions plus ungrafted Sunalta were included in this series. All Sunalta were CSIRO clone H5. Results have been published in some detail (Sauer 1972, 1974). Table 4 shows the numbers of vines for which records were available, average total yields over a 5 year period, and a yield ranking for each stock. Rankings were derived by allocating a value of 1 (highest yield) to 10 (lowest) to each stock on each site every year, and calculating a mean figure for all sites and all years. The rankings suggest a bias in the yield figures in favour of False 101-14 and 420A. The few sites on which these stocks were planted happened to be relatively high producing.

In 1967, a rootstock trial was planted on virgin heavy loam soil at Coomealla regarded as marginally acceptable for irrigated viticulture. Twenty-four stocks, including clonal Sunalta, were planted in 18 randomised blocks of single vine plots. Rootstocks were field grafted with clonal Sunalta scions in succeeding years. Yield records for a 5-year period (1971-75) are shown in Table 5. Differences with field grafted scions that effective data collection was done was compared with earlier trials where grafted vines, rather than rootstocks, had been planted. On average, none of the rootstocks was as productive as ungrafted Sunaltas on this site, thought no significant differences could be shown between several of the stocks and own-roots.

In 1989, ungrafted Sunaltas were removed from the field where the first rootstock trial had been planted in 1960, to enable 10 randomised blocks of 5 single vine plots to be planted with rootstocks. Stocks were grafted to clonal Sunalta scions over the next few seasons, and yield records were kept from 1973-76 (Table 6). Salt Creek produced more fruit than any other rootstock, though differences would not always be shown to be significant.

Rootstocks and nematodes

Plant and nematode interactions are usually studied in pot experiments, where plants are exposed to a nematode population of known size and composition, under controlled conditions. In the field, interactions may be modified by many factors, including irregular distribution of nematodes, and interaction between different parasites.

Relationships between 12 rootstocks and 3 nematode genera were assessed in 10 of the rootstock trials over a 5-year period. Each genus occurred in every trial site. Each autumn male nematodes were extracted by misting or jar incubation (Goody 1963) from a composite root sample representing each stock in each trial. Sample weights ranged from 10 to 100g of roots. Plantings were 3 years old when first sampled. Stocks were given a rating derived from nematode counts and ranking of the stocks in order of counts. Low ratings indicated few nematodes in root samples.

Rootnematode. Stock ratings for Meloidogyne javanica fell into 3 groups.

Low (average counts of the order of 40-80 nematodes/g of roots) Dogridge, 1613, Salt Creek, 101-14.

Intermediate (around 150 n/g): Teleki C, R99, R110.

High (around 300-500 n/g): 3306, 3309, 420A, Ru. du Lot, False 101-14.

Own rooted Sunaltas were rated below the high group. In the field, relatively susceptible rootstocks supported greater populations of rootnematode than the ungrafted vines.

Citrus nematode. For Tylenchulus semipenetrans differences between stocks were less well defined. 101-14, False 101-14, and Sunalta rated highest (60-70 nematodes/g roots). Other stocks rated lower and were similar to each other (20-40 n/g).

Root lesion nematodes. More than one species of Pratylenchus occurred in roots, but the species were not separated in counts. Stock ratings were in 3 groups.

Low (less than 10 n/g): 3306/3309.

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Intermediate (20-30 n/g): 101-14, Dogridge, Rup du Lot, Salt Creek, Tekiele C, False 101-14, R99.

High (60-80 n/g): 1613, 420A, R110, Sultana.

Lider (1960) found that M. jambica and M. incognita did not occur on Salt Creek and Dogridge in Californian rootstock trials. These stocks were infested by M. thamesi (syn. M. arenaria thamesis), in some sites, apparently without any reduction of vigour. Three species of root knot nematode, jampica, hapla, and incognita, have been recorded in Sunraysia, only jampica on vines. Although M. hapla has been known in the area for many years its distribution is limited. M. incognita appears to be a more recent introduction, known only from vegetable fields and glasshouses at present. It seems unlikely that these species would significantly affect rootstock resistance.

Meagher, Brown, Taylor and Harris (1958) have noted the occurrence in the Rutherglen area of Xhiphina index, a serious parasite of grapevines in California, and vector of fan leaf virus (Hewitt, Raski and Goheen 1958). According to Raski, Hart, and Kasimatis (1973) Salt Creek and Dogridge are moderately susceptible to this parasite.

Although there is no evidence of yield losses in Sunraysia vineyards caused by root lesion nematodes, pot experiments at Moolool have confirmed that 1613 and Harmony are susceptible and root damage can be extensive. Because the lesion nematodes, already common in irrigated soils, spread readily in irrigation and drainage waters these rootstocks cannot be recommended in the area.

**Vigour of grafted vines**

On light soils, vines on 5 rootstocks — Dogridge, Salt Creek, 101-14, 3306, and 1613 — were more vigorous than those ungrafted Sultanas that grew strongly. The weight of pruning from Salt Creek ranged up to twice the weight of prunings from vigorous Sultanas. Pruning weights from Dogridge were about 50 per cent greater than from Salt Creek. In addition, pruners usually laid down one or two extra canes on vigorous stocks. Differences in vegetative growth between 101-14, 3306, 1613, and vigorous Sultanas were usually small.

Saul and May (1971) showed that extending the vine canopy to afford a wider spacing between nodes could improve yields of vigorous Sultanas in Sunraysia vineyards. Because of their extra vigour, vines on Salt Creek, planted at conventional spacings in light soils, will respond to trellises systems that reduce shoot crowding, (May, Sauer and Schoefield 1973). The planting distances and training systems adopted for CSIRO's rootstock trials led to a degree of shoot crowding on Dogridge that almost certainly affected yields. Better results could probably be achieved by reducing rootstock vigour and using this stock by using extended planting distances and more elaborate trellis systems.

The high cost of grafted vines makes it almost mandatory to train them on wide trellises to take full advantage of their yield potential.

**Stock scion interactions**

In California, rootstocks are recommended for raisin and wine grapes, but there are problems with table grapes, where appearance of the fruit is important. Raski, Hart, and Kasimatis (1973) stress that careful vineyard management is essential to minimize poor colour and straggly bunches in red table grapes on rootstocks.

**Drying varieties**

In Sunraysia CSIRO's rootstock trials show that Salt Creek is the most satisfactory of the stocks tested for Sultanas in light soils because of its consistent yield performance. Unfortunately, it is one of the more difficult stocks to propagate and graft. The single trial on a heavy loam soil showed rootstocks were not warranted in that situation. There are indications that stocks may be useful in some clayey alluvial soils in the area, infested with citrus nematodes, that are not amenable to chemical treatment. Little information is available on the most suitable stocks for other drying varieties. Sarooshi and Bevington (1976) have shown that Salt Creek is unsuitable as a stock for Gordo because of incompatibility problems. Limited numbers of Currants have been grafted on Salt Creek with apparently satisfactory results. Two Californian hybrid rootstocks, K51-40 and K51-52, (both V. chomppini x V. riparia Giorre) that have been planted on a small scale, may have good potential because they are similar to Salt Creek in vigour but more readily worked.

**Wine varieties**

Several wine grape varieties, both white and black, have been grafted to rootstocks in Sunraysia. In CSIRO plantings Salt Creek has given vigorous, high yielding vines with the varieties Crouchen (syn. Clare Riesling), Listan, Shiraz, and Cabernet Sauvignon (personal communication). Hale (1977) found that grapes from grafted vines in Sunraysia had higher potassium content, higher titratable acidity, and higher pH, than grapes from ungrafted vines. Differences were most marked with the V. chomppini rootstocks Salt Creek and Dogridge, and relatively small with 101-14 and Tekiele C, the only other rootstocks examined. These differences could lead to poor colour and poor keeping quality in red wines and may indicate that chomppini stocks are unsatisfactory for black wine grape varieties in this area.

**Rootstocks and salinity**

Many vine rootstocks have the ability to limit the amount of chloride transmitted from the soil solution to grafted scions (Sauer 1968; Bernstein, Ehlig, and Clark 1969). Experienced with Dogridge, 1613, Salt Creek, Thompson Seedless (Sultana) and Cardinal in sand culture over a 5-year period.

They used concentrations of 12.5, 25, and 50 meq/l Cl-, that was given the same concentration of soluble salts to eliminate osmotic effects. The 3 chloride levels had little differential effect on vine growth, but because of extremely low chloride accumulation in these rootstocks, the authors concluded that salt tolerance of vines on these stocks would probably be limited by osmotic effects before chloride reached toxic levels.

Alexander and Groot Obbink (1971) applied concentrations from 250 meq/l Cl- to 50 meq/l steps in solution culture to Sultana and Salt Creek rootlings for 4 weeks. They used mixed chloride solutions to maintain a cation balance, but allowed the osmotic pressure to vary with chloride concentration. Growth was reduced by each addition of chloride, but Salt Creek was less affected than Sultana even at low chloride levels. Sultanas survived treatments up to 100 meq/l, Salt Creek up to 150 meq/l.

Dowton (in press) has shown that Schwaizmann limits chloride in scions to particularly low levels, but it is not clear whether the difference between this and other rootstocks is of practical significance. Malloé soils are saline, there are recurring salinity problems with water from the Murray in many districts, and the proportion of roadstock chloride is relatively low. The tolerance of grafted vines to chloride may be very useful in Sunraysia vineyards.

**Propagation**

Some rootstocks, including Salt Creek, are difficult to propagate, and difficult to graft. A good deal of research into propagation methods has been conducted by State Department of Agriculture to assist growers who need to use grafted vines. This has been shown (Sprole 1975) that simple methods of using bottom heat to promote strike of rootstock cuttings are quite effective. Chapman (1976) prepared a summary of propagation techniques usually adopted in Riverland vine areas.

Many growers in Sunraysia have established rootstocks in the vineyard and attempted field grafting with varying success. Grafting is usually practised on actively growing rootstocks, using either newly matured scion budwood or cuttings collected during the dormant period and stored in a refrigerator. It is difficult to achieve a uniform vineyard with field grafting because of graft failures. One solution is to plant rootstocks in a nursery area on the vineyard, graft these and transplant only the successful vines, but this involves a delay in field establishment.

On a commercial scale, bench grafting is probably the most economical propagation method, though considerable capital investment is required. Satisfactory bench grafting techniques have been developed (Mcintosh and Hedberg 1975). An alternative method that has been used is grafting of containerised rootstock vines under glasshouse conditions, which is both
capital and labour intensive but permits the use of rootstock cuttings that would be too small for bench grafting or for early planting in the field.

Whatever propagation methods are employed, it is important that the graft union of the vine in the vineyard should be well above the surface of the soil, to eliminate any possibility of root development from the scion.

Acknowledgements

For assistance with various aspects of the rootstock trials, the author is indebted to many staff members, past and present, of CSIRO Merbein. Particular thanks are due to Mr L. Smith, Mrs Edith Sullivan and Mrs Ann Gordon.

Financial assistance from The Australian Dried Fruits Association materially affected the scope of the work.


Finally, the project owes much to the sustained support of the Chief of Division, Dr. J. V. Possingham.

### Table 1

Average annual yields of Sultanas on stocks.

<table>
<thead>
<tr>
<th>Stocks</th>
<th>Ungrafted (24 vines)</th>
<th>101-14 (14 vines)</th>
<th>R. du Lot (8 vines)</th>
<th>False 101-14 (2 vines)</th>
<th>420 A (2 vines)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>10.9 +/- 1.1</td>
<td>20.4 +/- 2.3**</td>
<td>22.6 +/- 4.2*</td>
<td>7.8 +/- 5.3</td>
<td>11.0 +/- 1.0</td>
</tr>
<tr>
<td>1966</td>
<td>10.3 +/- 1.1</td>
<td>25.8 +/- 2.3*</td>
<td>25.5 +/- 3.7*</td>
<td>14.1 +/- 2.2</td>
<td>17.9 +/- 0.7</td>
</tr>
<tr>
<td>1967</td>
<td>22.6 +/- 1.6</td>
<td>42.0 +/- 2.9***</td>
<td>39.5 +/- 6.1</td>
<td>30.5 +/- 1.4</td>
<td>35.1 +/- 0.3</td>
</tr>
<tr>
<td>1968</td>
<td>16.4 +/- 1.6</td>
<td>41.7 +/- 1.6***</td>
<td>35.1 +/- 9.6</td>
<td>29.7 +/- 1.9</td>
<td>31.2 +/- 1.6</td>
</tr>
<tr>
<td>1969</td>
<td>13.0 +/- 1.6</td>
<td>42.5 +/- 3.0***</td>
<td>30.2 +/- 5.5</td>
<td>35.3 +/- 2.2</td>
<td>38.9 +/- 0.3</td>
</tr>
<tr>
<td>1970</td>
<td>19.9 +/- 1.9</td>
<td>40.8 +/- 2.7***</td>
<td>47.1 +/- 4.4***</td>
<td>29.4 +/- 5.3</td>
<td>31.5 +/- 0.1</td>
</tr>
<tr>
<td>1971</td>
<td>9.9 +/- 0.9</td>
<td>32.0 +/- 3.2***</td>
<td>24.7 +/- 2.3***</td>
<td>24.4 +/- 7.6</td>
<td>20.8 +/- 3.0</td>
</tr>
<tr>
<td>1972</td>
<td>19.9 +/- 1.5</td>
<td>56.4 +/- 4.0***</td>
<td>55.8 +/- 5.4***</td>
<td>41.5 +/- 1.1</td>
<td>35.0 +/- 1.3</td>
</tr>
</tbody>
</table>

* P<.05
** P<.01
*** P<.001 For differences from ungrafted comparison vines.

### Table 2

Average annual yields of Sultanas on stocks.

<table>
<thead>
<tr>
<th>Stocks</th>
<th>Salt Creek</th>
<th>1613</th>
<th>Sultana</th>
<th>LSD (p&lt;.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>30.6 +/- 1.1</td>
<td>19.5 +/- 0.9</td>
<td>13.3 +/- 0.7</td>
<td>3.0</td>
</tr>
<tr>
<td>1966</td>
<td>23.6 +/- 0.8</td>
<td>20.3 +/- 0.7</td>
<td>16.3 +/- 0.7</td>
<td>2.4</td>
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<tr>
<td>1967</td>
<td>23.4 +/- 0.7</td>
<td>18.0 +/- 0.6</td>
<td>19.4 +/- 0.5</td>
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<tr>
<td>1968</td>
<td>33.2 +/- 0.8</td>
<td>30.4 +/- 0.8</td>
<td>32.5 +/- 0.8</td>
<td>2.9</td>
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<tr>
<td>1969</td>
<td>19.2 +/- 1.0</td>
<td>14.7 +/- 0.6</td>
<td>10.3 +/- 0.6</td>
<td>2.6</td>
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<tr>
<td>1970</td>
<td>40.2 +/- 1.0</td>
<td>29.6 +/- 0.8</td>
<td>32.9 +/- 0.8</td>
<td>2.8</td>
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<tr>
<td>1971</td>
<td>17.7 +/- 0.7</td>
<td>13.8 +/- 0.6</td>
<td>12.8 +/- 0.6</td>
<td>2.0</td>
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<tr>
<td>1972</td>
<td>35.2 +/- 1.2</td>
<td>25.8 +/- 1.0</td>
<td>23.5 +/- 0.9</td>
<td>3.1</td>
</tr>
</tbody>
</table>

* P<.05
** P<.01 For differences from ungrafted comparison vines.

LSD (p<.01)
References


Sprague, R. S. (1975). Grafting grapevine rootstocks. AUST. GRAPESGROWER WINEMAKER No. 135, 4-5.


Table 3
Average annual yields of clonal Sultanas on stocks. (kg fresh fruit/vine +/- standard error.)

<table>
<thead>
<tr>
<th>Stock</th>
<th>Yield</th>
<th>LSD</th>
<th>Ranking (see text)</th>
</tr>
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<tbody>
<tr>
<td>Sultana</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt Creek</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>9.3 +/- 1.0</td>
<td>11.3 +/- 1.1</td>
<td>26.8 +/- 1.7</td>
</tr>
<tr>
<td>1969</td>
<td>18.4 +/- 1.0</td>
<td>21.1 +/- 1.4</td>
<td>34.3 +/- 1.2</td>
</tr>
<tr>
<td>1970</td>
<td>23.8 +/- 1.0</td>
<td>27.8 +/- 1.3</td>
<td>45.7 +/- 1.4</td>
</tr>
<tr>
<td>1971</td>
<td>21.2 +/- 0.8</td>
<td>20.6 +/- 1.0</td>
<td>31.4 +/- 1.7</td>
</tr>
<tr>
<td>1972</td>
<td>24.7 +/- 1.1</td>
<td>27.5 +/- 1.1</td>
<td>47.6 +/- 1.3</td>
</tr>
</tbody>
</table>

Table 4
Average total yields for 5 years (1969-73) of clonal Sultanas on stocks. (kg fresh fruit/vine +/- standard error.)

<table>
<thead>
<tr>
<th>Stock</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sultana</td>
<td></td>
</tr>
<tr>
<td>Salt Creek</td>
<td></td>
</tr>
<tr>
<td>LSD</td>
<td></td>
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<tr>
<td>1969</td>
<td>109</td>
</tr>
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<td>1970</td>
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<tr>
<td>1979</td>
<td>41</td>
</tr>
</tbody>
</table>

Table 5
Average total yields for 5 years (1971-75) of clonal Sultanas on stocks. (kg fresh fruit/vine +/- standard error.)

<table>
<thead>
<tr>
<th>Stock</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sultana</td>
<td></td>
</tr>
<tr>
<td>Salt Creek</td>
<td></td>
</tr>
<tr>
<td>LSD</td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>99</td>
</tr>
<tr>
<td>1972</td>
<td>109</td>
</tr>
<tr>
<td>1973</td>
<td>107</td>
</tr>
<tr>
<td>1974</td>
<td>96</td>
</tr>
<tr>
<td>1975</td>
<td>63</td>
</tr>
<tr>
<td>1976</td>
<td>68</td>
</tr>
<tr>
<td>1977</td>
<td>32</td>
</tr>
<tr>
<td>1978</td>
<td>59</td>
</tr>
<tr>
<td>1979</td>
<td>27</td>
</tr>
<tr>
<td>1980</td>
<td>83</td>
</tr>
<tr>
<td>1981</td>
<td>19</td>
</tr>
</tbody>
</table>

* Duncan’s multiple range test (results in part).
  a = not different from highest value (P<0.01)
  b = not different from lowest value (P<0.01).

Table 6
Average annual yields of clonal Sultanas on stocks. (kg fresh fruit/vine +/- standard error.)

<table>
<thead>
<tr>
<th>Stock</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sultana</td>
<td></td>
</tr>
<tr>
<td>Salt Creek</td>
<td></td>
</tr>
<tr>
<td>LSD</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>6.7 +/- 1.2</td>
</tr>
<tr>
<td>1974</td>
<td>24.0 +/- 2.4*</td>
</tr>
<tr>
<td>1975</td>
<td>20.1 +/- 1.7</td>
</tr>
<tr>
<td>1976</td>
<td>18.4 +/- 2.1</td>
</tr>
</tbody>
</table>

DRIED FRUITS NEWS
SULTANAS — The world situation

The following extract from "The Raisin Industry News" gives a summary of the world situation at the time of the International Conference in late June 1977:

"Afghanistan is expecting a drought this season and estimate their 1977 production at 55,000 short tons. They are continuing to expand irrigation projects and grape acreage. The grape acreage expansion is expected to continue for five years to a target of 110,000 short tons of Raisins annually. When that objective is reached it is anticipated the government will prohibit further grape plantings. Their 1976 production was 78,000 short tons, of which 58,000 short tons were exported. Main countries of export were: USSR, 21,000; UK, 9,000; and India, 7,200 short tons.

"Greece has stopped further grape plantings by government edict. They estimate an average annual production at 90,000 short tons. Producers of currants are being encouraged to pull out currant vines through a government subsidy payment. Greece still has about 35,000 short tons of 1976 crop sultanas, but indicated no concern that this tonnage would not be disposed of before new crop is available.

"Iran reported there are no plans for expansion of Sultana production. They estimate an average annual production at 60,000 short tons. It is difficult to obtain current market statistics from Iran. The country breakdown of exports presented by Iran at the Conference covered the period March 21, 1975 through March 21, 1976.

"South Africa is still recovering from the rains and flood conditions of recent years. Some acreage has actually been destroyed. The winery activity continues. Normal projections for the present are 9,000 short tons with a potential maximum in three or four years of 13,000 short tons. Of this total we would expect about two-thirds to be natural sun-dried seedless Raisins.

"Turkey has no prohibition against increasing grape acreage. However, no increase in acreage has been experienced in recent years and there does not appear to be prospects for increase in the immediate future. Annual production estimates are projected as around 110,000 short tons. Limited irrigation of grapes can result in crop variation due to weather.

"USA reported Raisin variety grape acreage is quite stable and no significant increase is projected for the immediate future. Our production was projected in the 200,000 short ton plus area. Raisin production is influenced greatly by winery activity in addition to weather.

These figures can now be updated to show an estimated 1977/1978 production of:

<table>
<thead>
<tr>
<th>Country</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td></td>
</tr>
<tr>
<td>Afghanistan</td>
<td>50,000</td>
</tr>
<tr>
<td>Greece</td>
<td>60,000</td>
</tr>
<tr>
<td>Turkey</td>
<td>100,000</td>
</tr>
<tr>
<td>Iran</td>
<td>45,000</td>
</tr>
<tr>
<td>USA</td>
<td>184,000</td>
</tr>
<tr>
<td>Total northern</td>
<td>439,000</td>
</tr>
<tr>
<td>1978</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>55,000</td>
</tr>
<tr>
<td>South Africa</td>
<td>9,000</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>453,000</td>
</tr>
</tbody>
</table>

In his address to Federal Council 1977, Mr A. Spiller, Chairman, Australian Dried Fruits Control Board, estimated that consumption in producing countries would absorb some 180,000 tonnes of total production. On the above production estimates this will leave some 315,000 tonnes available for export — plus any carry-over there may be from 1976/77.

Export markets in a normal production year require some 350,000 tonnes, which would indicate a tight situation for fruit in the coming year unless there is a falling off in consumption in importing countries.

RAISINS

RACK SPRAYING TRIALS

The Department of Agriculture has been conducting trials over the past two seasons to evaluate the rack spraying technique for the production of raisins. The trials were designed to provide information on spraying techniques, drying ratios, drying curves and processing difficulties. Muscat grapes were the principal variety used. Rack sprayed fruit was compared with grapes dipped in boiling caustic soda.

Summary of results

Spraying technique

- Thorough spraying of all branches was essential for uniform drying.
- The use of a spray wand greatly speeded up the spraying operation.
- Fruit sprayed soon after spraying dried faster and produced a better colored raisin than fruit sprayed 36 hours after spraying. Differences were only slight.

Drying process

- Rack sprayed fruit was slower to dry than hot dipped fruit (1973 — 15 versus 21 days; 1974 — 16 versus 19 days).
- Drying times are affected by weather conditions. Perfect conditions prevailed throughout the 1973 and 1974 trials.
- Several days of final curing on sisalcraft greatly improved the appearance of rack sprayed raisins.
- Fruit can be safely removed from the wire for spreading on sisalcraft when the moisture content reaches 16-17 per cent. Raisins are ready for boxing at 14 per cent moisture.

Relationship between sugar content and drying ratio

The results indicate that there is a definite correlation between soluble solids (brix) and drying ratio. The table below shows the relationship that exists for Muscat grapes.

<table>
<thead>
<tr>
<th>Baume</th>
<th>Brix</th>
<th>Drying Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.0</td>
<td>23.5</td>
<td>3.50</td>
</tr>
<tr>
<td>13.5</td>
<td>24.4</td>
<td>3.40</td>
</tr>
<tr>
<td>14.0</td>
<td>25.3</td>
<td>3.31</td>
</tr>
<tr>
<td>14.5</td>
<td>26.2</td>
<td>3.21</td>
</tr>
</tbody>
</table>

Cannon Hall Muscats (13.0° baume): Drying ratio = 3.7/1.

Processing of Raisins

- Rack sprayed fruit had a lighter, more golden color compared with hot dipped fruit. All raisins received equal grading (5 crown).
- No significant differences were observed between the rack sprayed and hot dipped fruit re cleaning and de-seeding at the packing sheds. Both lines opened up in excellent condition after 6 months storage.

Conclusions

Rack spraying is a suitable alternative to hot dipping for the production of raisins. The technique eliminates the need for specialized dipping equipment and produces a raisin which is acceptable to the retail trade.

"CHAFFEY'S KINGDOM"

$1.20 post free from Head Office.

October, 1977 15
Photos of Federal Council

Left to right: G. Henderson, C. R. Langford, G. V. Tolhurst (Chairman, Victorian Dried Fruits Board).

R. Tiller speaking.

Left to right: R. G. Horsburgh, J. Black.

Left to right: H. Swanbury, V. Malic, Hon. K. Wright, MLC, G. Swanbury, R. W. Tiller, L. McCreanor.

Left to right: C. Bailey, Hon. K. Wright, MLC, J. C. Harrison.

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