

**5th International
Symposium on Edible
Alliaceae, 2nd World
Onion Congress Study
Tour. Netherlands,
October 2007.**

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Magnus Kahl Seeds Pty Ltd

Project Number: VN07001

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This report is published by Horticulture Australia Ltd to pass on information concerning horticultural research and development undertaken for the onion industry.

The research contained in this report was funded by Horticulture Australia Ltd with the financial support of Magnus Kahl Seeds Pty Ltd.

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ISBN 0 7341 1713 2

Published and distributed by:

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PURPOSE OF REPORT

This report is designed to inform interested parties of the outcomes of the Study Tour and to highlight the relevant issues which were presented that may be applicable to the Australian Onion Industry.

FUNDING ACKNOWLEDGMENTS

This Study Tour was made possible by contributions made by Horticulture Australia



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Voluntary Contributions were also made by the participants who were in attendance.

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Media Summary

The 5th International Symposium On Edible Alliaceae held in the Netherlands in October 2007 was organised in order to be able to supply global industry information and networking opportunities for interested parties in Australia. The Australian study tour group organised to attend the symposium aimed to improve the knowledge base of the Australian industry and gain perspective on developments in science, marketing and the global industry as a whole.

The focus of the study tour was to:

- Realise results and current research activities being carried out by researchers from various nations.
- Liaise with global industry leaders and establish a network for the development of the Australian industry
- Observe cultural growing methods used by foreign markets
- Gain insights and perspectives into the global onion market situation
- Seek information on global trends and future opportunities for the Australian industry
- View foreign market activities
- View current and new onion varieties for possible use in the Australian market
- Visit growers and packers and gain insight into their operations.

Due to the Australian industry being situated so far from many countries around the globe it is extremely difficult to access market information, market opportunities, scientific research outcomes, grower practises and a sound network of overseas contacts to communicate with. Symposiums of this nature provide an opportunity to fulfil these needs and in turn provide the Australian Onion Industry with a greater ability to compete and expand its activities locally and globally through improved processes.

The study tour was able to access some excellent scientific research, industry data and trends, establish key industry contacts, observe and evaluate growing methods used in a foreign market, gain an understanding into the European standards and market dynamics, assess new onion varieties applicable to the Australian geography and meet with growers and packers to gain insight into their practises.

It is recommended that study tours of this nature are carried out in order to supply the Australian horticultural industries with a greater ability to compete and expand in the future. Information gathered at the symposium should be supplied to industry people and all contacts made during the symposium should be followed up to allow greater communication between global industry people in the future.

Expected Outcomes and how they were achieved

- Access to the latest scientific research

The study tour attended three days of plenary sessions which were all based on recently completed or current research activities on a range of topics related to the alliums family.

- Liaise with global industry members

Throughout the entire alliums symposium, onion congress, field trips and manufacturing visits the tour participants were able to communicate freely with a broad range of global experts which included seed company representatives, researchers, marketers, fresh produce traders, growers and importers/exporters. A great amount of information was gathered from these visits and contacts. All tour

members made enough contacts to develop possible marketing links and improve relations with global entities in the future.

- Update cultural methods used globally

Although the focus for the symposium presentations was scientifically based, the growers were able to view and discuss the latest developments in growing methods when visiting local growers, packers and machinery manufacturers. This was most evident when the group visited the Holaras machinery, Propak packaging machinery and TOP onions. Due to the harvest of onions finishing two months prior to the groups arrival, it was not possible to see onions in the field and gather a first hand look at the cultural methods used. However, by viewing machinery and talking with growers directly, the group was able to understand the processes involved in the growing of onions in the Netherlands. The most interesting difference in production was the use of onion sets to produce the bulk of onion production in the Netherlands.

- Gain perspective on global market information

On the third day of the symposium the study tour attended the world onion congress. This gave a great insight into the current market situation as well as the expected future situation of the global onion markets.

- Seek information on global trends and future opportunities

During the world onion congress there was a significant amount of information and data analysis presented on trade issues like production rates for countries, export figures, import figures and the expected forecasted figures for major producing countries.

- View foreign market activities

During the study tour, the group was able to have a greater understanding of the market operations for the European Union by visiting Flevotrade, a packing and marketing operation in the Netherlands. The tour participants were able to discuss the market requirements for local and export produce for the Dutch producers and view the product being packed and sent to the markets.

- View latest allium material that can be accessed

During the field trips the group visited the facilities of De Groot en Slot and Bejo Seeds. Here the group could view the latest onion and leek varieties which are available for the intermediate and long day length regions within Europe. There were onions from ten different seed companies displayed at the exhibition which gave a very good idea of the kind of varieties which are being bred for the global onion markets.

- Visit growers and packers and gain insight into their operations

The group was able to see one grower and two packing operations during field trips carried out during the study tour. These visits provided a great insight into the full range of processes carried out in Dutch onion production. This included: set production, planting of sets, onion harvesting, onion storage and the latest facilities in the grading and packing of onions.

Results of discussions

Much of the discussions during the plenary sessions were based on scientific research findings from various researchers around the globe. The study tour selected the most important topics to report on in regards to the impact that these developments would have on the Australian industry. The major findings included the following:

SCIENTIFIC RESEARCH/DEVELOPMENTS

Downy Mildew

As one of the most common fungal diseases affecting the production of onions, downy mildew has been focussed on extensively in recent scientific research. Resistant varieties are now available from seed companies like Nickerson-Zwaan who have developed the strains over the last 20 years. The mildew resistant strain has been selected from another member of the allium family, the allium roylei. By hybridizing allium cepa X allium roylei, the breeders at Nickerson-Zwaan have been able to develop a variety which is resistant to Downy Mildew. Varieties will slowly be crossed to the mildew resistant strain in order to bring the products to commercial release.

Genetic modification

The genetic modification of onions has up until now been a very difficult task to achieve. The latest GM work has been carried out by Crop and Food Research in New Zealand.

The main focus of Crop and Food's work is on the silencing of genes, with a special emphasis on the manipulation of sulphur quality and introducing virus resistance into onions. To date, the most effective work has been seen in producing an onion which doesn't make you cry, by silencing the gene which triggers this reaction.

Iris Yellow Spot Virus detection and management

In recent years there has been a large increase in the incidence of Iris Yellow Spot Virus (IYSV) in global onion fields. Most work has been carried out on the effect on the USA fresh market by Dr. du Toit (Washington State University and Oregon State University) and Dr. Jensen (Oregon State University), the virus is effectively moving between the continents and is now active in North America, South America, Europe, North Asia and Southern Asia. It was reported that thrips are the vector for the virus and studies carried out have shown that the management of thrip numbers in onion fields is the key to controlling this virus and reducing the virus's affect. Odile Huchette has been working on testing and developing an identification strategy for the virus in France, looking at the seed, leaves, bulbs and seedlings of onions and the effect that the virus has on each.

White rot control in Spring Onions

Work continues in Australia and abroad on the issue of white rot in onions. Dr Villalta from Plant Industries Research Victoria has continued working specifically on the control of white rot on spring onions. From work carried out it is clear that current forms of fungicide treatments have not been providing effective control measures for growers. Recent trials have shown that treatments of tebuconazole and boscalid were effective in control of white rot, with an average of 17% reduction in crop damage. The other treatment being trialled with good success is the diallyl disulphide (DADS) application, which is applied to the soil pre-planting. When applied in two applications, the reduction in affect of white rot was around 32%. If DADS was combined with boscalid, the result was nearly full control of white rot.

Garlic Oil as a nematocide

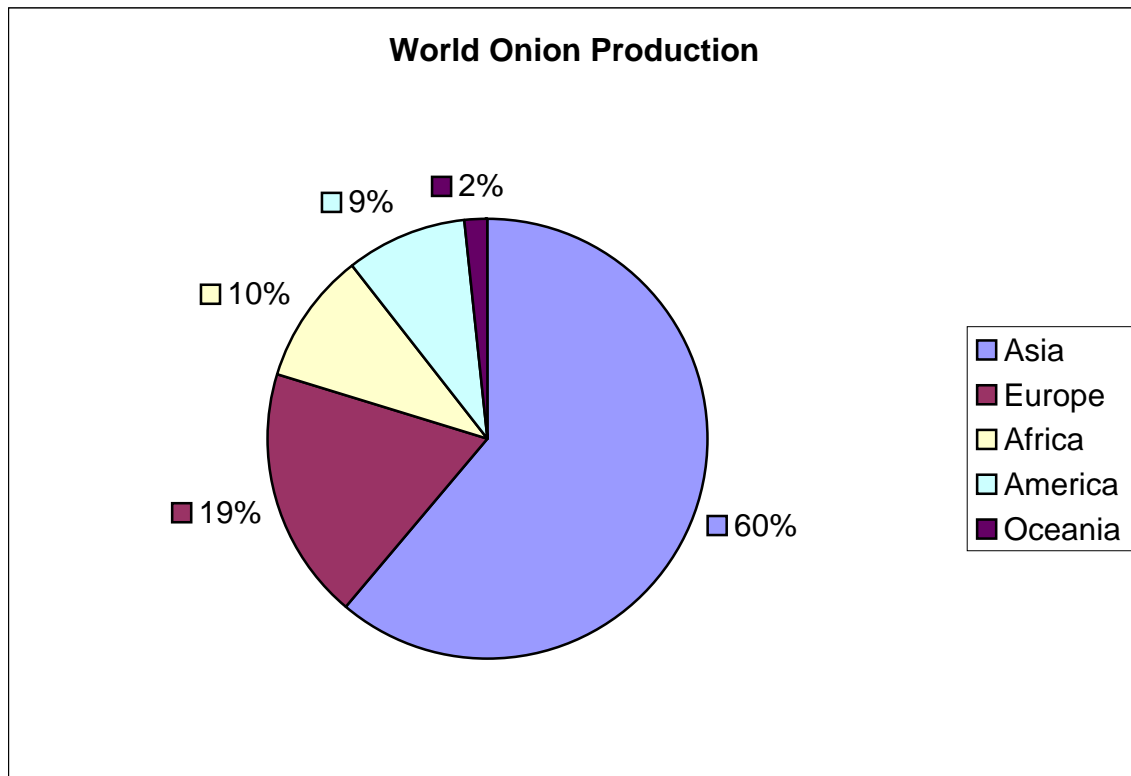
Further work on nematode control has been carried out by Dr Eric Block from Cambridge University. Dr Block's research focuses on the use of garlic oil

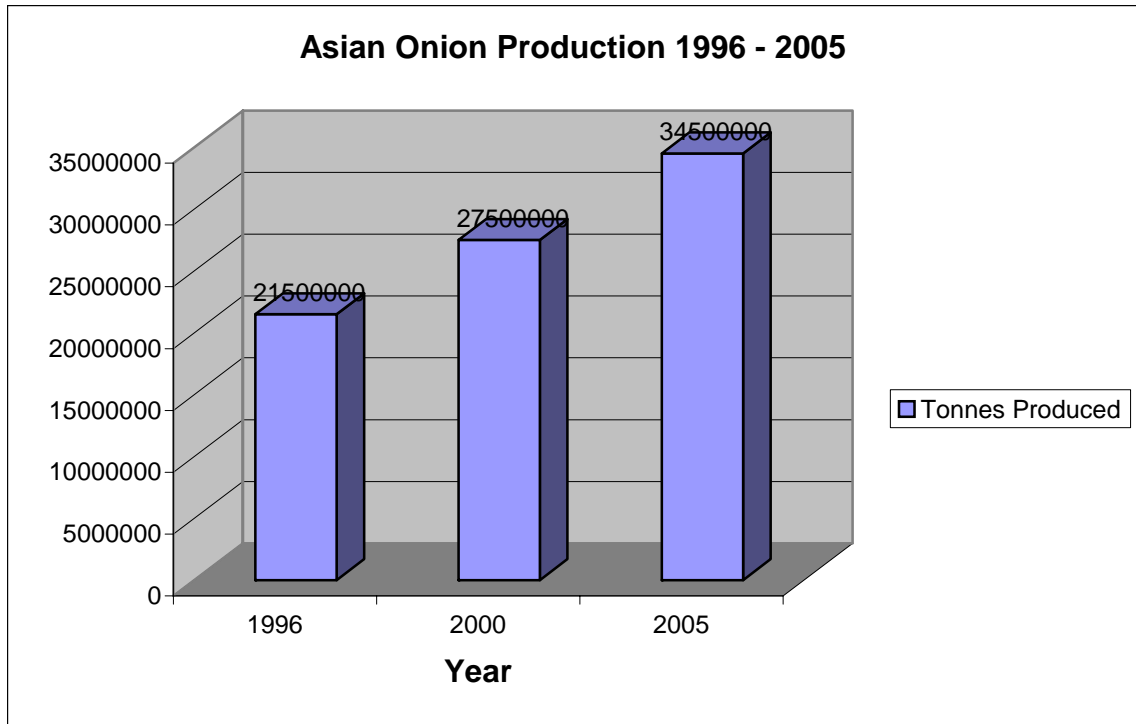
applications to the nematode affected field. Dr Block outlined that there are about 2.5 billion nematodes in a Hectare of affected soil and that if sprayed with a rate of 15-20kg/Hectare of Garlic oil granules (current product is Nemguard in the UK) the reduction in nematodes was significant.

MARKET DATA – Trends and Observations

During the World Onion Congress the study tour was supplied with some key statistics gathered on the global onion markets.

3rd World Push -from the information supplied by statisticians at the symposium, it was interesting to note that the level of onion consumption around the globe has increased over the past 10 years. With the developing nations now demanding greater quantities of fresh produce and a quality level much higher than what they have demanded in the past, they must look to the fully developed markets for enhanced supply. Europe is just one example of a developed market, which is increasingly supplying export onions to third world countries in Africa and or developing countries in Asia. A good example of this comes from Holland, where their exports to third world countries have risen by 17% between 2001 and 2006.

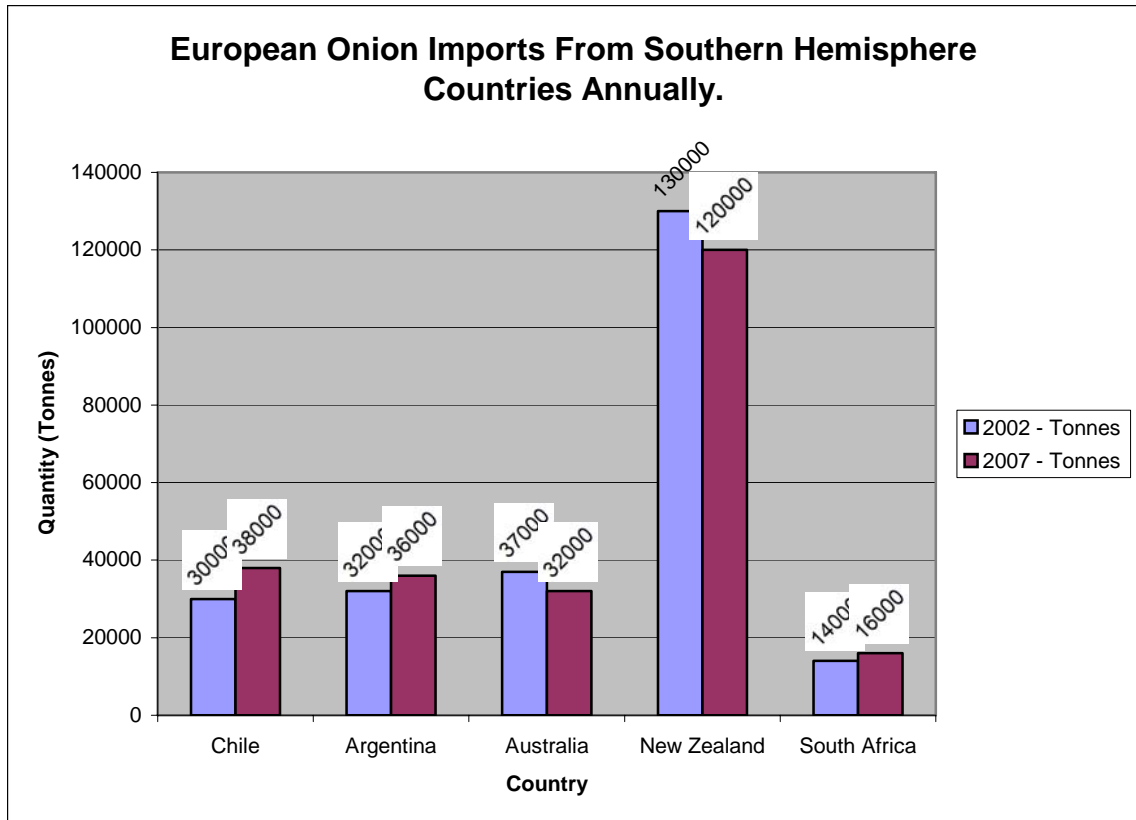




From the above graphs we can see that the major growth in world onion production has come from the Asian countries with an increase of 38% in production over a period of ten years to 2005. These figures are mainly based on the production output of China and India. The most growth in onion production within the Asian group has come from China which has had a 36% increase in its onion production in the last 10 years.

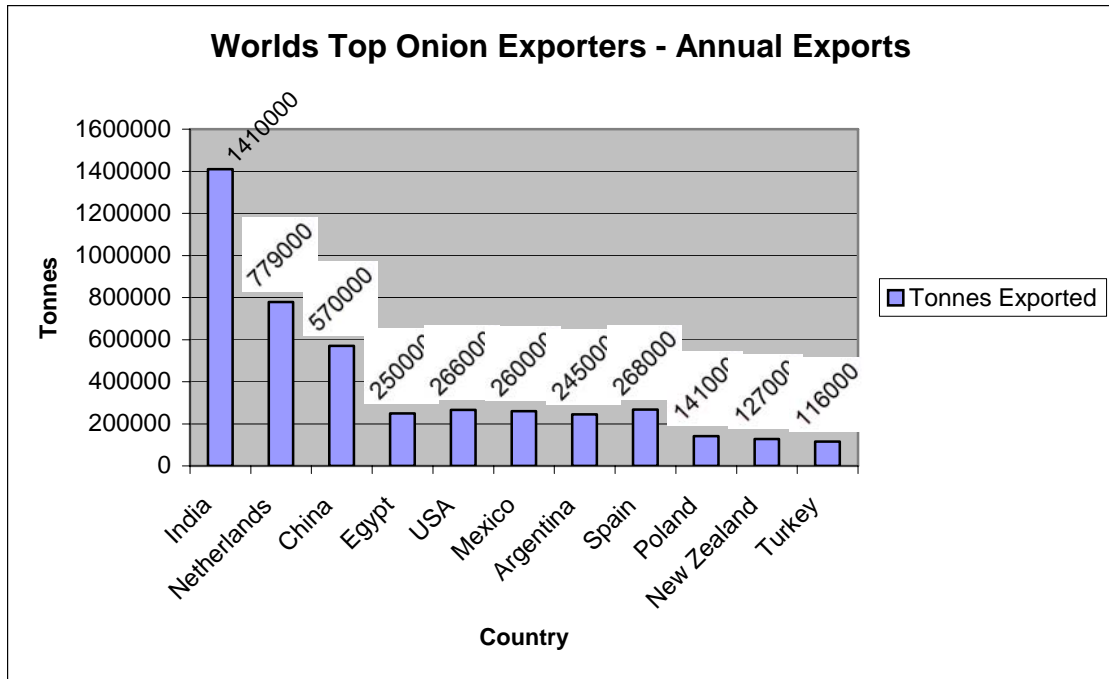
Southern Hemisphere Countries Exporting to Europe –

As the below graph shows, both Australia and New Zealand onion exports have dropped slightly over the last 5 years. In contrast we can see that onion exports to Europe have increased from Chile, Argentina and South Africa. Although minor changes have been evident, it is important to note that these countries experiencing greater exports are geographically much better positioned and the relative weakness of their currencies is in their favour in current trading.



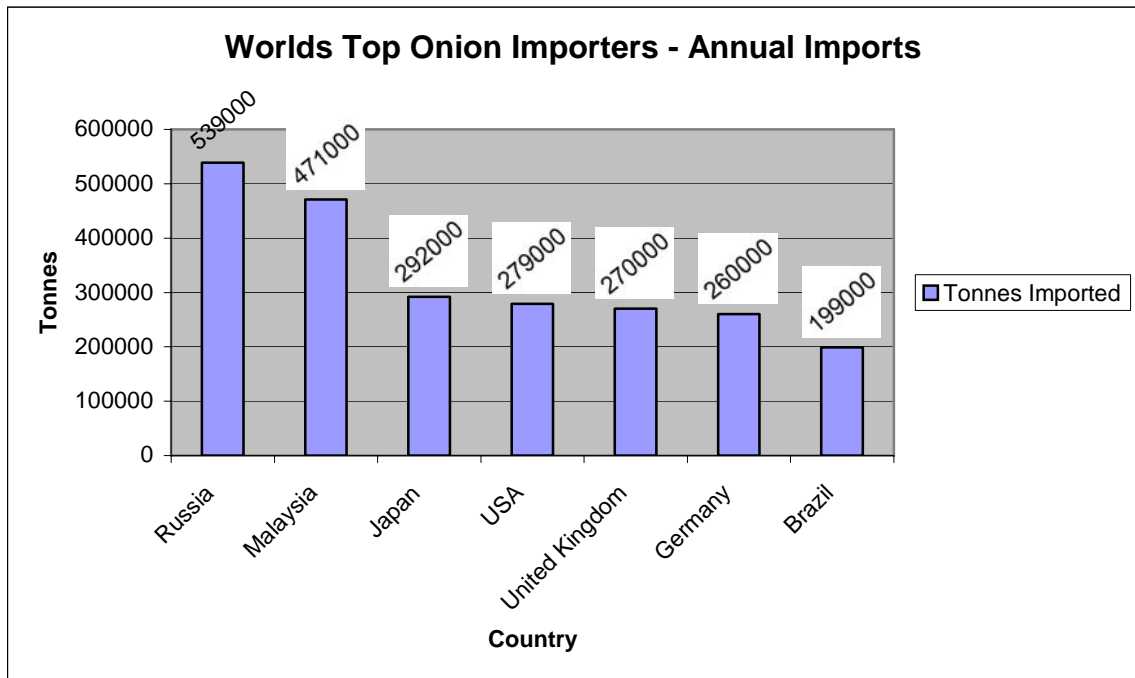
World Onion Exports

As the below graph shows, 3 of the top 4 onion exporting countries are developing nations and 7 of the top 11 exporting countries are developing nations. Quality and food standards from many developing countries has improved significantly. This has resulted in an increase of onion exports by 58% in India, 55% in China and 38% in Argentina in the last 5 years. In contrast to this, onion exports from developed nations like the USA and New Zealand have declined by 8% and 22% respectively over the same period. These figures indicate a dramatic change in only 5 years and is a good gauge of how the dynamics of the global market place has changed.



World Onion Imports

From the figures in the graph below we can see where the bulk of exported onions are being consumed. The top three importers in Russia, Malaysia and Japan increased their imports of onions by 15%, 35% and 46% respectively in the past 5 years. Considering Australia's relatively close proximity to the Malaysian and Japanese markets, it is worthwhile considering a market assessment for possible trade links and a greater push for export growth.



Implications for Australian Horticulture

By the Australian industry people attending this study tour, Australian Horticulture was able to gain great insight into the industry on a global basis. The main advantages of attending a symposium of this nature are:

- The ability to network with industry specialists from various global markets.
- To access and implement the findings of the latest scientific, cultural and marketing systems being developed in varying countries
- To improve the processes and activities of the industry and provide a greater ability to compete on a global platform.
- To view production rates and future trends of the global onion markets in order to further advance the Australian industry and capitalise on opportunities.
- To compare Australia's activities with that of foreign markets and use this as a catalyst for change if required.

How the information gathered will be disseminated

Information regarding the activities and results of the study tour were discussed and collated during the period when the study tour was being carried out. Since the return of the study tour, presentations have been made about the tour at the annual general meeting for the Australian Onion Industry in November 2007. In conjunction with these presentations, a feature article has been published in the annual Onion Association magazine in order to inform the broad range of Australian Onion industry members as well as a vast range of overseas Onion Industry entities about the activities of the study tour. These measures have allowed a good coverage of the key points of the tour as well as promoting the industry on a global scale.

Itinerary

THURSDAY 25TH OCTOBER

ATTENDEES DEPART MELBOURNE AND ADELAIDE. STAY OVERNIGHT IN SINGAPORE

FRIDAY 26TH OCTOBER

DEPART SINGAPORE

SATURDAY 27TH OCTOBER

ARRIVE AMSTERDAM

SUNDAY 28TH OCTOBER

TRAVEL TO DRONTEN AND CHECK IN AT HOTEL.
REGISTER FOR CONFERENCE.

MONDAY 29TH OCTOBER

ISHS ALLIUMS SYMPOSIUM
SESSION 1 - MOLECULAR BREEDING AND GENOMICS
SESSION 2 – STORAGE AND PROCESING

TUESDAY 30TH OCTOBER

ISHS ALLIUMS SYMPOSIUM:

SESSION 1 - PESTS AND DISEASES

WEDNESDAY 31ST OCTOBER

ISHS ALLIUMS SYMPOSIUM:

SESSION 1 – GENOMICS AND BREEDING

WORLD ONION CONGRESS

SESSION 1 – INTERNATIONAL DEVELOPMENTS AND TRENDS

SESSION 2 – CONSUMER TRENDS, FOOD SAFETY, TRACKING AND TRACING

SESSION 3 – INTERNATIONAL TRADE AND PROCESSING

SESSION 4 – HEALTH ISSUES, ORGANIC PRODUCE AND TRADE

THURSDAY 1ST NOVEMBER

TECHNICAL VISIT – DE GROOT & SLOT (ONION SEED SPECIALISTS)

FRIDAY 2ND NOVEMBER

TECHNICAL VISITS – VISIT FLEVOTRADE (ONION GROWER, PACKER AND SHIPPER)

AND THE DUTCH APPLIED PLANT RESEARCH STATION.

CLOSING DINNER –

SATURDAY 3RD NOVEMBER

FREE DAY IN AMSTERDAM.

SUNDAY 4TH NOVEMBER

DRIVE FROM AMSTERDAM TO GOES, SOUTHERN HOLLAND

MONDAY 5TH NOVEMBER

VISIT – ONION GROWER, PACKER, SHIPPER AND PICKLING ONION PRODUCER

VISIT - LOCAL GROWER AND STORAGE FACILITIES

RETURN TO AMSTERDAM

TUESDAY 6TH NOVEMBER

DEPART AMSTERDAM.

Recommendations

After participating in this symposium with the study tour it is evident that attendance to these events is highly beneficial for members of the Australian Onion Industry and that future symposiums of this nature should be well represented by industry members. It provides a great insight into the activities of foreign markets, an up to date account of scientific research being carried out in the applied field and an opportunity to assess and access current and future opportunities for the Australian industry.

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