



SOUTH PACIFIC SEEDS
SINCE 1986

greenhouse
gazette

ISSUE 17 APRIL 2015



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The information provided is based on an average of data and observations collected from our trials. Significant variations may occur in the performance due to a range of conditions including cultural/management practices, climate, soil type and geographic location. As a consequence South Pacific Seeds cannot accept any liability as to the accuracy of this information. APRIL 2015 ACN: 002 887 256

Introduction

By Darren McPhan

Greetings everyone and welcome to Issue 17 of the South Pacific Seeds Greenhouse Gazette.

In this edition you'll find some fantastic articles on our recent SPS internal Glasshouse Conference, new and existing varieties in Capsicum, Tomato and Cucumber.

We have also introduced into this edition, for the first time, area overviews from our key staff around the country which I'm sure you'll all find an interesting read.

From all the team at SPS we thank you for all your ongoing support trialing our new products and the commercial sales you all generate.



SPS Sydney conference highlights

By Ros Boylan

The SPS Greenhouse Product Group met in Sydney in early December 2014 for their annual conference and trial review.

A range of crops were grown in conjunction with the conference, to assess varietal performance through the heat and disease issues found in the summer months. Fusarium Wilt is an increasing problem in Sydney production areas with a number of older varieties succumbing to Fusarium infections in this season's trials.

Among the highlights of the greenhouse trials was a new cucumber variety **Nadia** (180-2) which continued to show excellent results alongside the standards Colorado and Khassib.

Nadia showed excellent fruit quality with consistent setting ability in Sydney trials. Nadia is a semi multi type suggested for spring/summer production with a strong generative but open plant habit for ease of harvest, and smooth glossy fruit averaging 16-18cm in length.

For growers interested in greenhouse slicing types, two varieties performed well under the conditions. **Dinero** showed consistent setting in the heat with highest overall yield in the trial, while trial variety **084-3** showed promise as an improved slicer type with good length, excellent colour and attractive appearance.



Nadia 180-2



084-3

Greenhouse Tomatoes

Two cherry tomatoes performed very well under the hot conditions with good setting ability through to the top of the plant.

Marinika, a new single harvest type for unheated cropping, offers excellent fruit quality with an extensive disease package. The plant produces multiple trusses, with good setting ability. The fruit are firm with medium to large size (approx 15g), attractive red colour and excellent flavour and Brix.

Tomaggio also showed promise as a LSL truss type for heated greenhouse with high brix and yield, with excellent uniformity and shelf life. Trial seed is available on request.

Trinidad (Plum) and **Concordia** (Roma) continued to perform well for growers with excellent firmness and quality, maintaining the larger fruit size required by Sydney growers.

Concordia is fast establishing itself with growers because of its extensive disease package with intermediate resistance to Fusarium Race 3, TSWV, TYLCV and Nematodes.

Policarpo also performed well but is a slightly smaller cluster plum type (130g) and is more suited to SA market. With the added advantage of TSWV tolerance, Policarpo displayed excellent colour and firmness at mature red with good setting ability throughout the plant.

A screening of cocktail truss types in a range of sizes were also viewed with **Annamay** performing best in the 40-50 gram class. The variety showed excellent uniformity and setting on the truss and throughout the plant under difficult conditions, with attractive glossy appearance. Trial seed is available for interested growers on request.

With market prices continuing to struggle in many crops, growers are looking towards speciality niche markets to improve returns. Baby Romas and mini grape types are a well-established category on supermarket shelves, with increasing competition to find the best performing varieties for all regions.

Sarina (large grape) and **Merlot** (small grape) are well known for their consistent performance in both field and shade house production, with outstanding flavour and yield.

Elmo also performed well under hot conditions, with slightly smaller size than Sarina, providing a mid-size option with an extensive disease package for summer production.

In the Baby Roma class, **Romini** was another variety that also performed well for this market in summer Sydney trials with excellent yield, colour and firmness. Averaging around 35-40g, Romini offers growers additional protection of an extensive disease package, including intermediate resistance to Fusarium Races 1 & 2, TMV and TYLCV.

Garincha proved to be another variety of interest in the small Perino grape class for heated greenhouse production, with excellent setting, attractive glossy red fruit with good flavour and a firm crunchy texture.

Low tech Capsicums

Whilst the capsicum trials are still to be finalized, a number of varieties including **426-1**, **137-4** and **140-4** showed excellent promise in early viewings with large size, smooth walls and uniform blocky shapes.

Best performers from these trials will be available to growers for trial throughout the 2015 season.



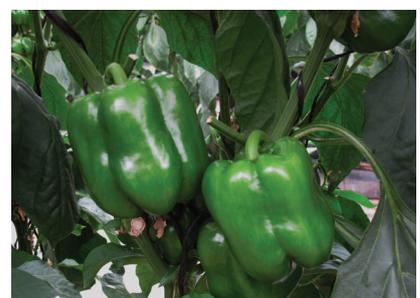
Marinika



Tomaggio



Concordia



426-1

ENZA ZADEN



Capsicum

(red)



Maduro

High Resistance: Tm: 0-2

A high quality blocky red variety, MADURO will maintain fruit size throughout the season providing consistency of yields. MADURO has a compact sturdy plant with an open habit which is labour friendly, and has shown excellent endurance which is most important in long term cropping. MADURO recuperates quickly following periods of high fruit loading and is strong against Blossom End Rot and internal fruit rot. The fruit of MADURO are very firm with good shelf life and a glossy red colour.

Triple 5

High Resistance: Tm: 0-3

Intermediate Resistance: Ma/Mi/Mj

A large fruited variety, TRIPLE 5 is a uniform dark blocky red variety. The fruit of TRIPLE 5 are predominantly 4-lobed. The fruit are firm and shelf life is excellent. A vigorous and medium jointed plant TRIPLE 5 is open and generative, it stands the heat well and maintains fruit size particularly into the second half of the season.



Capsicum

(yellow/orange)



Atalante

High Resistance: Tm: 0-3

ATALANTE is an early maturing large blocky yellow variety which maintains its fruit size and shape throughout the production cycle, and particularly in the second part of the season. Suited for heated growing systems, the generative plant is flexible, vigorous and well balanced, and has the ability to set well in both high and low light conditions. The fruit of ATALANTE have a true yellow colour with attractive glossy skin and thick stem for better presentation. The fruit average 195-200g in weight with excellent firmness and good post-harvest shelf life. ATALANTE is strong against internal fruit rots and Anthocyanin and has high resistance to Tm: 0-3.

Orandino

High Resistance: Tm: 0-3

ORANDINO is a medium sized hitech blocky orange type suggested for trial as a Mazzona replacement. The fruit have a regular blocky shape with thick fruit wall, and average fruit weight of 185-190 gms. The plant is more compact than that of Mazzona but with a generative open habit and offers intermediate resistance to Tobamo Tobacco Virus races: 0-3. Trial seed expected to be available April May 2014.





Setting up your capsicum plant to maximise yield potential

By Louise Millar

The setup practices growers choose to employ can determine the viability and productivity for the entire crop.

Receiving your plants

- Planting immediately after delivery is recommended
- Avoid overnight travel where possible to avoid cooling of plants
- Transport the plant with a wet rockwool cube
- Avoid leaf damage to reduce possible bacterial or fungal infection

Transplanting

The ideal timeframe for capsicum transplanting to take place is when the block can be placed onto the slab and the main root is able to grow through into the slab freely and uninhibited, so when the tap root is near the edge of the block but not emerging from the block, usually this is when the first flower bud is visible. Usually 5 weeks post seeding in summer, or up to 8 weeks post seeding in winter.

Optimal stem density for capsicum is 7-8 stems per m² during summer and dropping to 6 stems during lower light conditions. In New Zealand the most common system is two stems per plant so 3 to 4 plants per m² is required.

Training and pruning

Capsicum plants are by nature are multi stemmed. Young plants branch after several weeks, usually at the 6-8 week stage of growth. If the plant is balanced a flower bud and a lateral or side shoot will develop from every node. These need to be removed and maintained throughout the life of the crop to maintain a two stemmed plant. It is also important to remove king fruit or poorly formed fruitlets. Allowing these to mature wastes a lot of energy in non-profitable fruit.

Setting Fruit

Ensuring the plant maintains growing speed until plant balance of fruit and leaf development is achieved is what determines why and how we set our first fruits. The first fruit are ideally set on the 3rd or 4th node on the two main stems (not side shoots). Removal of flowers below this level is recommended. This ensures the plant has

sufficient leaf area to sustain the developing fruit without compromising the speed of fruit and plant development. The consequence for setting fruit too early is small fruit that are poorly shaped with higher incidences of Blossom End Rot noticed on weaker plants. These problems will need to be combated throughout the life of the plant.

Climate

Capsicums are slow growing plants by nature, with higher nutrient inputs and temperature requirements needed to maintain a reasonable growth rate. These requirements are required for plants to develop strong, well formed and shaped flowers on strong healthy plants. Flowers produced by weaker, unhealthy plants tend to be small, poorly developed and can abort early or even fall off during flower development. The fruit produced from such flowers are subsequently poor quality being small, poorly shaped and often lack colour and cell wall integrity offering poor shelf life.

After transplanting onto slabs, air temperatures of 23°C day and 21°C nights for the first week, this promotes strong vegetative growth and rapid root development. Be aware on dull days to lower these temperatures to 17°C dependant on light levels. These settings do not encourage fruit set as we are concentrating on root and leaf development. The root zone temperature should be around 22°C for optimal root development. Lower temperatures than this are more suitable for pythium development. Higher temperatures cause a more vegetative growth pattern from the plant. At the conclusion of the first week the night temperatures can be lowered to between 18-20°C. A cooler night temperature encourages strong flowers and good fruit set. This temperature adjustment can be used to manipulate the plants balance throughout its life. A lower night temperature induces strong flowers and fruit setting moving the plant into a generative nature, a higher night temperature encourages root and leaf development encouraging a vegetative plant nature.

Making the plant more vegetative

By Louise Millar

Your settings

A smaller temperature difference between day and night Range: 0 - 5°C	<input type="checkbox"/>
Lower EC of drip water Range: 2.5 - 4.0mS	<input type="checkbox"/>
Lower EC in the media Range: 3.0 - 6.0mS	<input type="checkbox"/>
Slow cooling of day to night Range: 0 - 4°C per hour	<input type="checkbox"/>
More fruit thinning	<input type="checkbox"/>
Raise minimum pipe temperature Range: 0 - 80°C	<input type="checkbox"/>
Increase frequency of irrigation with decreased volume Range: 75 - 150mL	<input type="checkbox"/>
Less CO ² Range: 350 - 1000ppm	<input type="checkbox"/>
Raise humidity	<input type="checkbox"/>
Less ventilation	<input type="checkbox"/>
Earlier irrigation start time (am) Range: 0 - 2 hrs after sunrise	<input type="checkbox"/>
Later irrigation stop time (pm) Range: 0 - 4 hrs after sunset	<input type="checkbox"/>
Increase water content of media (last resort) Range: 50 - 85%	<input type="checkbox"/>

Making the plant more reproductive

By Louise Millar

Your settings

A large temperature difference between day and night <i>Range: 0 - 5°C</i>	<input type="checkbox"/>
Higher EC of drip water <i>Range: 2.5 - 4.0mS</i>	<input type="checkbox"/>
Higher EC in the media <i>Range: 3.0 - 6.0mS</i>	<input type="checkbox"/>
Fast cooling of day to night <i>Range: 0 - 4°C per hour</i>	<input type="checkbox"/>
Less fruit thinning	<input type="checkbox"/>
Lower minimum pipe temperature <i>Range: 0 - 80°C</i>	<input type="checkbox"/>
Decrease frequency of irrigation with increased volume <i>Range: 75 - 150mL</i>	<input type="checkbox"/>
More CO ² <i>Range: 350 - 1000ppm</i>	<input type="checkbox"/>
Lower humidity	<input type="checkbox"/>
More ventilation	<input type="checkbox"/>
Later irrigation start time (am) <i>Range: 0 - 2 hrs after sunrise</i>	<input type="checkbox"/>
Earlier irrigation stop time (pm) <i>Range: 0 - 4 hrs after sunset</i>	<input type="checkbox"/>
Reduce water content of media (last resort) <i>Range: 50 - 85%</i>	<input type="checkbox"/>



Cucumber

(continental)



Dom

High Resistance: Cca, Ccu
Intermediate Resistance: Px

DOM is a versatile continental type for heated and non heated production under mild conditions, extending further into warmer conditions in some regions. Easy setting ability is a feature. The dark green attractive fruit are approx 33-35cm (depending on season) with very good shelf life and very good uniformity throughout the growing cycle. DOM is a reliable variety that offers excellent adaptability and offers intermediate resistance to Powdery Mildew.



Reko

High Resistance: Cca, Ccu

REKO is a very early and productive variety producing very dark green medium long shiny fruit with a slight rib. The fruit are approx 32-36cm in length. REKO has a vigorous growing habit with strong cool weather tolerance and strong recuperative powers. Good resistance to Target Spot and Scab. Recommended for cool season production, this versatile variety has an extended production slot in many areas.



ENZA ZADEN



Cucumber

(lebanese)



Austin

High Resistance: Ccu
Intermediate Resistance: Px

AUSTIN has good cool weather tolerance performing well in both heated and unheated greenhouses and is suitable for autumn and winter production. In cooler conditions the variety is mainly single fruited. In milder conditions however, AUSTIN sometimes gives an extra fruit per internode. The fruit are straight, mid ribbed, averaging 17-18cm in length and have a dark green colour.



Eskimo

High Resistance: Ccu
Intermediate Resistance: CMV, CVYV, Px

ESKIMO is recommended for the late autumn to winter timeslot alongside Austin. Mainly single fruited, ESKIMO has a very uniform fruit set with a vigorous open plant habit. Moderately ribbed fruit approx 17-19cms with excellent gloss and fruit colour. Offers an excellent disease package.



SPS 1672

Intermediate Resistance: Ccu, CMV, CVYV, Px

SPS 1672 is a single cool season type to trial alongside Eskimo. The plant has high vigour and sets well with a strong sound vine habit and short internode spacing. The fruit are of high quality with an attractive appearance with medium ribbed texture and glossy dark green colour. The fruit are approx 17-18cm in length with a long stem attachment for ease of harvest.



Tomato Mosaic Virus ToMV

Tobamovirus (TM3)

By Travers Pickmere

Tobamovirus

Is a group of viruses including; Tobacco Mosaic Virus (TMV), Tomato Mosaic Virus (ToMV), Pepper Mild Mottle Virus (PMMV) are all within the Tobamovirus group. These viruses are not only found in field tomato and capsicum crops but more commonly in greenhouses and other forms of covered cropping.

TOMATO MOSAIC VIRUS

There is no cure for Tomato Mosaic Virus. Once it is identified, bag and remove plants from the greenhouse and destroy.

Causes and Symptoms

There are many ways a tomato plant can be contaminated with mosaic virus. A common method of infection is by leaving old crop debris between the rows of any new crop. It is important to remove all dead plant matter at the end of each crop. Insects can transmit the virus, but are not considered a major source of infection. An infection can also be obtained from contaminated tools (pruning) or planters.

Light and dark green mottled areas will appear on the leaves of tomato plants infected with this virus, as well as other symptoms including stunted growth, fruit deformities, and a reduction in the amount of fruit produced are also symptoms.

The virus usually starts with a light green colour between the veins of newer leaves. The development of the "mosaic" or speckled pattern that the virus is named for begins after this stage. When the tomatoes are cut open, the insides may have brown areas. Leaves may curl become yellow, and become fern-like in appearance.

Treatments and control

The only treatment is prevention. No chemical products are available to cure or protect plants. The best factor in controlling and reducing infection is to practice sanitation. Remove any infected plants, including the roots from the greenhouse and destroy.

Source: *Tomato Disease Help Treatments, Control & Prevention* (<http://tomatodiseasehelp.com/mosaic-virus>)

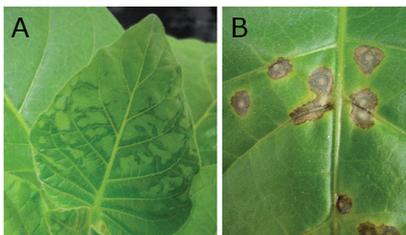


TOBACCO MOSAIC VIRUS

This virus is common worldwide and affects mainly tomato and capsicum crops. Tobacco Mosaic damages the leaves, flowers, and fruit causing stunting of the plant. The virus almost never kills plants but lowers the quality and quantity of the crop, particularly when the plants are infected while young.

Symptoms

In tomatoes, the foliage shows mosaic (mottled) areas with alternating yellowish and dark green areas. Leaves are sometimes fern-like in appearance and sharply pointed. Infections of young plants reduce fruit set and occasionally cause blemishes and distortions of the fruit. The dark green areas of the mottle often appear thicker and somewhat elevated giving the leaves a blister-like appearance. Symptoms on other plant hosts include various degrees of chlorosis, curling, mottling mosaic, dwarfing, distortion, and blistering of the leaves. Many times the entire plant is dwarfed and flowers are discoloured. Symptoms can be influenced by temperature, light conditions, nutritional factors and water stress.



Disease cycle

Since viruses have no active methods of entering plant cells, they must rely upon mechanically caused wounds, vegetative propagation of plants, grafting, seed, pollen, and being carried on the mouth parts of chewing insects. Tobacco mosaic virus is most commonly introduced into plants through small wounds caused by handling and by insects chewing on plant parts.

Control

There are a few actions which can be done. Removing any suspect/diseased plants and destroying them. Wash hands and any tools which have come in contact with diseased plants before working on healthy plants. Remove crop debris when the crop has finished. Fumigate the greenhouse and sterilise as much as possible to reduce the impact of the virus returning at the end of your crop.



PEPPER MILD MOTTLE VIRUS

This virus is a mechanically transmitted Tobamovirus which is found worldwide.

Symptoms

Foliar symptoms of Pepper Mild Mottle Mosaic virus (PMMV) consist of mottling and yellow/green mosaic, while fruit may be small, malformed and mottled, with sunken or raised necrotic spots. Yield loss is considerable when young plants become infected.



Conditions for Disease Development

PMMV is not transmitted by insects. It can be seed-borne; consequently, the seedlings can be infected by mechanical contamination from their seed coats during transplanting or other cultural procedures. This is a primary source of infection.

The virus is quite stable and highly infectious and is easily spread from plant to plant during normal crop maintenance. Also, the virus can persist in the previous crop in infected pepper debris such as leaves, stems or roots in soil for several months.

Control

Resistance to PMMV is available in some varieties. It is recommended that growers use seed which has resistance to the range of Tobamovirus. Speak to your local Seed Representative for more information.

Source: University of Minnesota
<http://www.extension.umn.edu/garden/yard-garden/vegetables/tomato-tmv-disease/>

Source: (AVRDC The world vegetable center 2004).

COLD STRIPE

(white lines on fruit)

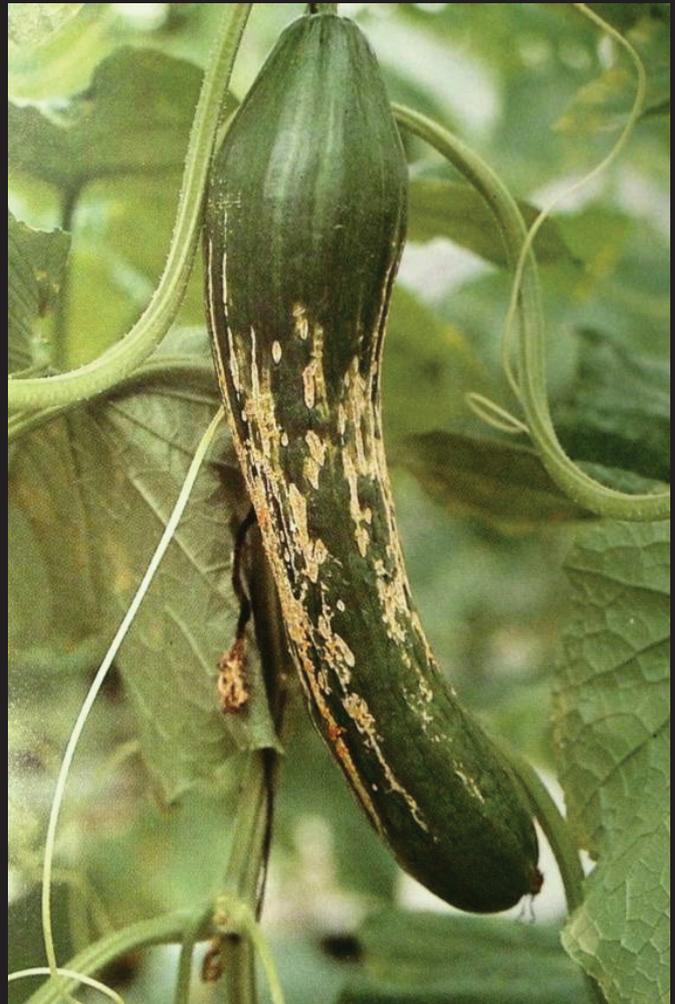
By Carlos Azzi

Cucumbers can get cold stripes in the spring and autumn when there is a big difference in the day and night temperatures.

This happens when the roots are not active enough in the morning after sunrise to replace the water the plant loses at the growing point. The plant then takes water out of the fruit to keep the growing point healthy, resulting in a dry fruit which leads to cold stripe.

There is no treatment for cold stripe except heating the greenhouse early in the morning to warm the root system in order to take up the water in the root zone to the growing point of the plant.

Varieties which show good resistance to cold stripe are required for spring autumn production.





The journey of the vegetable evolution

By Joep van Balen

It's fascinating how vegetable variation, types and even species evolve over time, over geographic areas and over socioeconomic developments of the people eating them. Take the late introduction of tomatoes, potatoes and capsicum peppers from the new to the old world for instance. And long before that, Arab traders spread beans and the Romans brought onions to Europe. The Spanish, after being introduced to this new crop, took it to America.

When people spread across the world, so did their vegetable varieties, crops, eating habits and special dishes. And not just in the past, it still happens today. The increase in hamburger consumption greatly impacted the consumption of beef tomatoes and iceberg lettuce. This is just an example of the many developments of the last two decades. In this period of time, the developed world goes through some rapid changes in vegetable consumption.

Vegetables – steamed or cooked – are being replaced by fresh salads. As family sizes decreased, so did the sizes of vegetables. Moreover, when time available to prepare food got less and less, cabbages ended up shredded in plastic bags.

Nowadays, we see very fast changes in the countries in development. Economic growth impacts households, time to cook, purchasing power and ultimately vegetable consumption. It is very interesting to predict how this influences the world. As a multilocal company Enza Zaden produces the seeds of varieties asked for. We are challenged to anticipate on future trends and developments and translate these in the products, product models, marketing and production systems asked for. Traditional products in different markets disappear, just because they no longer meet the requirements for taste or shelf-life of modern times. They are replaced by other products of new foreign cultures that people has gotten to know through holidays, internet and marketing efforts.

Can we predict what may happen for each specific local variation? No, not exactly. However, we can combine socio-economic factors with consumption traditions to somewhat predict future concepts. Just an example: in the Philippines a vegetable stew called 'pinakbet' is traditionally sold in the market, pre-cut and mixed. In this respect, this country is to some extent already used to pre-cut or processed vegetables. So, by combining this tradition to a socioeconomic factor such as decreased time to cook, we can 'predict' the demand for typical local mixes of vegetables. This will again have effect on the development of the varieties.

Developments and trends make our business very dynamic. They guide us to new directions and help us to figure out possible future demands. I can honestly say that in vegetable seed development there is never a dull moment.



Joep van Balen works as a Product Development Manager for Enza Zaden. Van Balen has years of experience in breeding projects of open field crops. He has now specialised in research programmes in Asia and breeding projects in Brassica rapa and bittergourd.



The Philippines has a vegetable stew called pinakbet, a mix of equal parts of basically eggplant, bittergourd, yard long bean, okra and pumpkin.

Area Reviews

South Australia

Travers Pickmere



2014 has been a busy year in SA greenhouse. There has been some exciting new material in cucumbers which are showing some real promise. In Continental and Lebanese, SPS are

continually trialling to either compliment or replace our current market standards.

In the capsicum greenhouse market Remy continues to perform however each season there are more and more growers seeing the effects of TSWV (tomato spotted wilt virus) on their crops and the thrips are becoming more resistant to the chemicals being used to combat them.

Blocky capsicums are becoming another option for SA growers as they offer a very good disease package. We currently have some good material we are trialling.

In the tomato segment SPS has a very nice cherry variety called Marinika which has consistently performed. It is best suited from July transplant through to December. Bliss is still preferred growing throughout the winter segment as it maintains a good size.

Also we have a new Roma tomato called Policarpo which is best suited from August through to January transplant. This variety has good size at 120-140 grams. In the loose round segment we have some brand new material arriving early 2015 which will be trialled against Nemex and Izmir.

Growers had fantastic prices for their cucumbers coming out of winter 2014 and as it was such a cold winter there was not a lot of produce in Virginia. Those that had good crops made good money. A lot of continental cucumbers were coming into Adelaide from Geraldton in WA and were of good quality.

Western Australia

Emma Wallace



It is exciting times for the WA greenhouse industry in which we have seen an expansion in both high-tech (heated) and low-tech (non-heated) systems.

The Perth greenhouse segment specialises in both systems with capsicums, tomatoes and cucumbers being the main crops grown. In particular, SPS has a strong range of capsicums for the Perth high-tech greenhouse market, these include: red – Veyron, Viper, Spider and Marletta; yellow – Atalante (our new variety which is commercially available in 2015) and orange – Orandino (our new variety which is also commercially available this year).

The Geraldton greenhouse segment has seen significant increases over the past few years and expansion is still currently taking place. The main crops grown are continental cucumbers, followed by lebanese cucumbers; more recently, crops of capsicum, eggplant and tomato are also being introduced to the growers programs.

Key SPS varieties for the Geraldton cucumber market are: Continental – Reko, Zone (both cool season); Lebanese – Austin, Eskimo, Cobra (cool season) and Colorado (warm season).

In 2015 we will be trialling new varieties across all crop types and systems. These trials will also comprise of material that showed promising results in 2014.

In August last year a Greenhouse Technical Management Course was held in Perth WA. Hosted by Graeme Smith (Graeme Smith Consulting), Rick Donnan (Growool Horticultural Systems) and Leigh Taig (gotafe Victoria) the course was a great success. The week long course featured lectures, demonstrations, discussions and practical training covering a number of crops and systems. The course included farm visits to the properties of David Zalsman and Alex Norman.

Area Reviews

Victoria

Cordelia Macdougall



SPS is actively involved in placing trials among the greenhouse and glasshouse growers in Victoria. Enza Zaden are continuing to produce attractive and productive capsicum lines

for the highly-technical growers. This season, we have had good results with some new yellow material: Atalante and Bentley and in the reds, we are still seeing high yields with Maranello. For the upcoming season, we are excited to introduce some new material that will target the 180-190g range for the red blocky market.

In the low-tech greenhouse, trials have been placed among the key growers in the Lara and Melton areas, which is proving to have successful results. Coming out of Winter, it was good to see Austin performing as the most suitable variety to grow during the shoulder periods. SPS witnessed an increase in growth of Austin sales due to its wider recognition in the greenhouse community. Austin continues to produce nice, uniform fruit with continuous setting.

Meetings with The Western Victorian Vegetables Association every few months creates a great forum for discussion between growers to find out what varieties have been performing. These opportunities provide a space to display new material that has been performing well and to further promote.

Alindi, a medium-sized, loose-pick tomato has proven to have good results in the low-tech trials, with nice-shaped fruit and good numbers. This is the start of the things to come from Enza Zaden and is exciting to know they are very focused on introducing material for this segment of the market. Cherry production under low-tech structures has been fairly minimal in Victoria, but we are now starting to see some growth. This has given SPS an opportunity to trial new lines and also be able to exhibit our great range of current commercial varieties. Sungreen is a new cherry that at maturity is still green but extremely sweet tasting. 049-2, a lemon cherry and 050-2, a peach cherry, are two new lines that are interesting to trial.

New South Wales

Carlos Azzi



Vegetable prices were average in the Sydney markets for most of 2014. While we have seen a huge jump in cucumber prices in the winter months, spring and summer prices for

cucumbers were low. Greenhouse tomato and capsicum prices have also been very average. Most growers ask for the reasons for miserable prices which is mainly due to supply and demand.

The introduction of new and improved varieties with better disease resistance and high quality end product results in longer picking periods of good quality fruit. This results in continuous supply of high quality fruit to the markets all year round.

In Sydney, F3 (Fusarium race 3) is now a major problem resulting in the loss of many tomato crops. Tomato Brianna has been performing in greenhouses where F3 is a problem. Brianna also offers an excellent taste and firm fruit. Tomato Concordia is our Roma tomato with F3 resistance. This variety has also performed well in Sydney greenhouses where F3 has been a problem.

The winter in Sydney was quite cold and cucumber Eskimo (our winter variety), performed really well in the cold conditions. Eskimo also performed well on the north coast with cucumber Austin. In the summer months, growers in Sydney and the north coast are planting Colorado due to its good quality fruit and high yield.

The greenhouse market in Sydney has been stable with many growers waiting to see the effect of Badgery's Creek Airport on property values. Most growers in the Sydney basin are in the vicinity of Badgery's Creek and some growers on airport land have been given till June to vacate the properties. The north coast greenhouse market is continuously growing with more and more growers putting up greenhouse structures for cucumber, tomato and eggplants.

Area Reviews

South East Queensland

Luke Murphy-Clarke



The past year has been a positive one for greenhouse producers in South East Queensland (SEQ). Dry conditions and disease, however, did provide some challenges for clients, but

they responded to these by being flexible and willing to alter their production plans to meet the environmental conditions.

In the first few months of 2014, SEQ producers experienced unusually high incidences of the disease Fusarium in greenhouse cucumbers during autumn. This, combined with an unusually cold winter, resulted in lower than expected yields. Market prices were generally positive given the lack of cucumbers available, which led some producers to maximize production from surviving plants. Producers achieved this by increasing their electrical conductivity (EC) levels which compromised fruit length. The market, however, was willing to accept the smaller fruit due to the low quantities available.

From January to April, producers responded to the presence of Fusarium in greenhouse cucumbers by planting alternative break crops such as tomatoes and eggplants. Eggplants worked particularly well in the greenhouse for producers as an alternative to winter cucumbers, as not only was it a successful break crop to combat disease, but it also provided a steady income stream.

Looking for other alternatives to combat disease apart from break crops, producers also upgraded their filtration systems. They achieved this by adding additional filters such as ultra-violet filters to their systems in order to improve water quality and to assist in limiting the spread of disease. The filtration upgrades were undertaken to enable producers to return to cucumber production in late spring and early summer.

After a cold winter, SEQ greenhouse producers then experienced an extremely hot and dry

spring. As the majority of greenhouse production in this region relies on dams as the primary water source, the lack of water became an increasing concern and limited the amount of cucumbers and other crops that were planted during this period.

In addition to the lack of water, Cucumber Green Mottle Mosaic Virus (CGMMV) became a key risk for cucurbit growers at this time. This seed dwelling virus was found on some properties in the Northern Territory and the industry was concerned about the ability of this disease to spread to other regions. To ensure that we provide our clients with a disease-free product, South Pacific Seeds has instituted a new and reliable testing regime to ensure that all of our cucurbit seed is thoroughly screened for CGMMV. This allows our clients to purchase our seed with confidence, knowing that the disease is not present. Thanks to our rigorous testing process, South Pacific Seeds has not had any incidents of CGMMV being present in our cucurbit seed.

Summer has provided a necessary respite for greenhouse producers in SEQ, with the area experiencing high rainfall. Although the rain also resulted in severe storms which damaged greenhouses in some areas, it did provide enough substantial rain to significantly increase dam levels, which is positive as producers prepare for late summer and early autumn planting's.

Throughout the year, South Pacific Seeds continued to conduct trials of a number of our new cucumber lines, which resulted in some impressive outcomes. The trials clearly demonstrated that Lebanese cucumber 180-2 (spring/summer) and Continental cucumbers (autumn/winter) variety lines 111-4 and 112-4 are both highly suitable for soil and substrate production systems. We are very excited about these results and the impact they could have to producers' bottom lines and will continue to trial these varieties with key growers throughout SEQ during 2015, as we move closer to commercialising these products.

Although the past year has provided some environmental and disease management issues, we have had some positive outcomes spring from these adversities.

Area Reviews

The solid trial outcomes for South Pacific Seeds' eggplant and cucumber trial varieties that we recorded in 2014 and our ability to deftly respond to the CGMMV threat by instituting reliable disease screening processes, has resulted in our clients being assured of the continuing quality of our products and their ability to perform.

For SEQ greenhouse producers, the year has allowed them to showcase their ability to be innovative in the way they have responded to production issues they faced by reviewing their planting choices and revising their filtration systems. The flexible and professional approach adopted by greenhouse producers in 2014 has resulted in a solid year for our SEQ based clients.

South Pacific Seeds looks forward to continuing to partner with our clients in 2015 and to support them in another successful year in fruit and vegetable production in this region.

Bundaberg Val Moreno



The Bundaberg region may not be regarded as a major player in the covered crop industry, but since the first commercial greenhouse was built around 1990, we have seen a slow but steady increase in greenhouse vegetable production. The very first commercial greenhouse in the Bundaberg region was built by Eden Farms, following the success of their Continental cucumbers grown at Hampton.

Only 15 years ago, open field cucumbers were a significant crop in the Bundaberg region but the combination of their susceptibility to weather issues and consumer access to the high quality, clean, greenhouse cucumber has seen the production of the humble open field cucumber virtually disappear. Greenhouse production increased dramatically in line with a steady increase in cucumber consumption.

Recent years have seen a few changes in the protected cropping sector with growers shifting from the traditional crops of tomatoes and cucumbers to the likes of figs, roses and blueberries. The total protected cropping area in Bundaberg is approx 25 Ha, with the majority being medium tech plastic greenhouses. The main vegetable crop grown under cover is Continental cucumber, with well over 50% of the total greenhouse production, followed by eggplant and tomatoes.

Most growers have experimented with other crops such as capsicum, Lebanese cucumbers and baby cucumbers, but these lines have not been a huge success. The recent surge in interest by growers to enter the greenhouse industry has been also dramatically slowed down by a couple of seasons of significantly low returns. Recent threat to the covered crop industry, specifically in Cucurbit production is CGMMV or Cucumber Green Mottle Mosaic Virus, found recently in the Northern Territory. This virus can be seed borne, and SPS have in place testing procedures to help ensure sure the seed is free of this virus.

Tomato

(beef / truss)



Brianna

High Resistance: Va, Vd, Fol:0-2(EU), ToMV, Ff:1-5, For
Intermediate Resistance: TSWV, TYLCV, Ma/Mi/Mj

BRIANNA is beef type averaging 175-185gms in weight. Flat round in shape with excellent uniformity throughout the crop cycle. The fruit are an attractive shiny bright red colour with excellent skin quality. The plant is very strong with an open easily worked plant habit and has shown good set under warmer conditions. Production is early to commence with high overall yield potential. BRIANNA is suitable for year round plantings and offers an outstanding disease package including intermediate resistance to Va,Vd, Nematodes, Fol:0-2, Ff:1-5, For, ToMV, TSWV and TYLC.

Diamantino

High Resistance: Va, Vd, Fol:0,1(EU), ToMV, For
Intermediate Resistance: On, Wi

DIAMANTINO is an improved Dirk type with larger than average fruit size on the truss. Although still generative in nature DIAMANTINO is a little more vegetative than Dirk and has produced similar quality fruit with higher yields in NZ trials. The variety produces uniform shaped clusters with an attractive dark green calyx. The globe shaped fruit are firm with uniform shape and size and the average fruit weight is 120-130gms. Suited to heated greenhouse production DIAMANTINO produces year round and has shown an ability to maintain smooth even colouring under pressure of PepMov virus.





Tomato

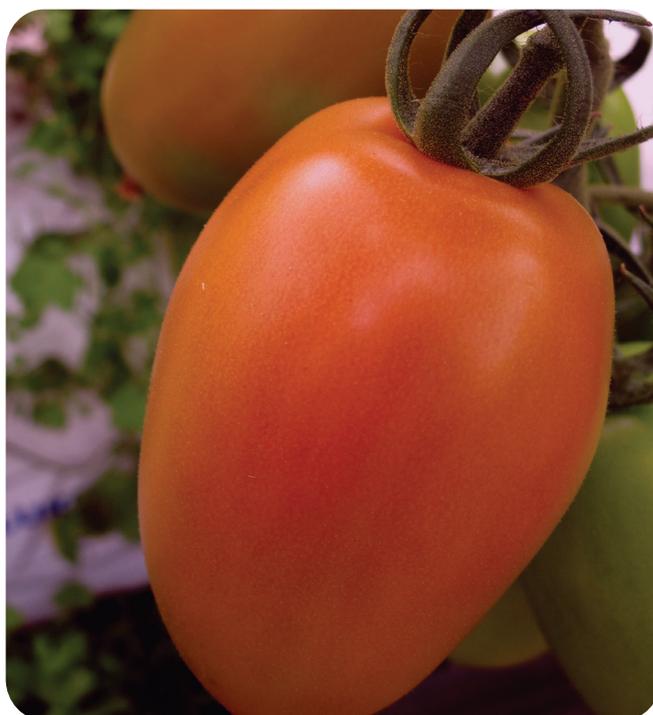
(cherry / roma)



Marinika

High Resistance: Fol:0-1(EU), ToMV, Ff:1-5, For, Aal, Pst, S
Intermediate Resistance: TYLCV

MARINIKA is a single harvest cherry to compare to Bliss for non heated greenhouse production. The plant is strong and vigorous and produces multiple trusses, with good setting ability. The fruit are round in shape, of medium to large size (18-20g), with attractive colour, good firmness at mature red stage, and excellent flavour. MARINIKA has shown good tolerance to splitting in plantings to date and has an extensive disease package. A must for all low tech greenhouse cherry growers!



Concordia

Intermediate Resistance: Va, Fol:1-3(US), ToMV, TSWV, TYLCV, N

CONCORDIA is an indeterminate saladette roma for greenhouse production. Fruit average 110-140gms with good uniformity of size and good firmness at mature red stage. The vigorous plant has the ability to set high quality fruit under high humidity. CONCORDIA offers a strong disease package including intermediate resistance to Fusarium Wilt races 1-3, TSWV, TYLCV and Nematodes.



Cucumber Green Mottle Mosaic Virus

By David Commens

In recent years there has been an increase in the regulations for the importation of seed to prevent the spread of seed borne diseases.

About five years ago Potato Spindle Tuber Viroid (PSTVD) was identified as being a potential issue to the various solanaceous crops across Australia. Since that time, tomato and capsicum/chilli seed have required testing for entry Australia. The testing process has delayed shipments, increased the costs and in some cases growers have missed out on the variety of their choice because of a lack of supply at the right time. But this is seen as a necessary measure to ensure that PSTVD (and related polyviriods) do not become established in Australia.

In 2014 Cucumber Green Mottle Mosaic Virus (CGMMV) was identified on a watermelon property around 20 minutes south of Katherine in the Northern Territory. CGMMV has been around for a number of years across the world, mainly in Europe, Asia and some parts of the Middle East. It was also found in recent years in North America (California) and in greenhouse cucumbers in Canada also. The outbreak in the NT is the first time the virus was recorded in Australia.

CGMMV is a little different to other mosaic virus types, as it is not spread by insects such as aphids. It is a seed borne and is easily spread by mechanical means, such as tractors, harvest machinery and workers in watermelon paddocks. It can be spread by root to root contact in the soil, and as watermelon plants have a very large root system, it can be easily spread from plant to plant in a very short time. It can also travel in nutrient solution in hydroponic culture.

As a result of the initial outbreak in 2014, the Northern Territory DPI quarantined a number of properties around Katherine and Lampbell's Lagoon. Every property has now been placed on a two year quarantine from growing any cucurbit crop.

Most cucurbit species are at risk of transmitting the virus via seed, and along with the wild cucurbit species in most growing regions around Australia, it can be easily seen just how much damage this virus has the potential to cause.

Greenhouse cucumbers and zucchini are two crops which are also susceptible to the seed borne virus. The source of infection in the Northern Territory has not been proven to date. Whilst this is speculation, one possibility is that grower(s) may have imported some seed from Asia without a customs declaration from non-reputable sources.

Biosecurity Australia has now imposed strict restrictions on the importation of a range of cucurbits including watermelon, cucumber, rockmelon, honey dew, zucchini, gourds and pumpkin (C.pepo only). There is now a strict protocol in place for the testing of each seed lot to ensure it is free of CGMMV prior to release into the marketplace.

All cucumber and zucchini seed supplied by SPS has been tested and found free of CGMMV.

It is essential that growers only buy seed from reputable companies in Australia knowing the seed has been tested for the virus.



Mini snacking peppers

By Duncan Lamont

What are they? Typically about 5cm long these peppers come in a range of vibrant colours, initially starting green they then change into bright red, brilliant yellow and spectacular orange.

First seen in Australian stores five or six years ago they were initially a bit of a novelty but over time growing in acceptance they are now a more mainstream product.

The name should say it all but although the USA and much of the rest of the world use the term pepper to describe pretty much any member of the Capsicum species here in Australia we are more used to using the term pepper to follow the word chilli. Consumers can understandably, but falsely, associate the small size with chilli-like heat and are reluctant to try them.

Usually sold as a medley of 3 colours such as the Perfection Fresh offering, Vine Sweet Minicaps® baby capsicums along side similar mixed colour medley packages of grape and cherry tomatoes as well as mesclun mixed lettuce offer a quick and convenient way to add some colour to a meal.

Truly versatile they are delicious eaten cooked or raw and can be eaten stuffed, sliced or whole. Whilst traditionally capsicums have been consumed chopped and cooked, mini peppers, with fewer seeds, thinner walls and better flavour, as well as their convenient size offers every reason to just grab one and bite into it.

What we've not seen much of so far in Australia is packaging designed for the grab-and-go consumer. There are already a few examples appearing with tomatoes. In the US, which is a more mature market, this type of packaging is a size that is convenient for lunchboxes. Teamed with the bright colours and sweet taste this increases appeal to children as well as adults.

High in vitamins C and A and like many brightly coloured fruit and vegetables they are high in natural anti-oxidants such as lycopene. They really are the healthy snacking option.

Production currently occurs both in the field as well as under cover, but by far the best quality product is produced indoors.





Sample Requests

If you are interested in trialling any of the varieties listed in this edition of the Greenhouse Gazette, please contact your local SPS greenhouse representative to discuss seed requirements and suitability of varieties for your situation.

For all of our products, please visit our website at:

www.southpacificseeds.com.au

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02 6962 7333

ADELAIDE
08 8364 3310

BRISBANE
07 3393 3766

MELBOURNE
03 9770 8441

PERTH
08 9331 6356



Australian Seed Federation
SOWING SEEDS

South Pacific Seeds is proud to be a member of the Australian Seed Federation (ASF), the peak industry body for the Australian seed industry. Like all ASF members, SPS abide by the ASF Code of Practice for Labelling and Marketing. As part of the Code, information relating to the seed, coating and treatment can be found on the bag or label.

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