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Johannesburg Flower market

MARKET POSITION OF CUT FLOWERS IN SOUTH AFRICA

In 2024, South Africa exported ZAR1.1B of Cut Flowers, being the 189th most exported product (out of 1,214) in South Africa. In 2024, the main destinations of South Africa's Cut Flowers exports were: Netherlands (ZAR475M), United States (ZAR89.1M), China (ZAR86.1M), Germany (ZAR79M), and Japan (ZAR76M).

The fastest growing markets for Cut Flowers exports in South Africa between 2023 and 2024 were: United States (ZAR20.4M), Germany (ZAR12.8M), and United Kingdom (ZAR6.09M).

SA Cut Flower Exports at a Glance:
ZAR1.06B | Ranking 196 / 1,213
(Mar 2024 - Feb 2025)

TOP DESTINATION: Netherlands
ZAR473M | (Mar 2024 - Feb 2025)

FASTEST GROWING MARKET:
United States
+ZAR20.4M | (2023 - 2024)

SHARE OF IN GLOBAL EXPORTS
0.6% | Ranking 14 / 172 | (2023)

IMPORTS
ZAR70.4M | Ranking 802 / 1,219
(Mar 2024 - Feb 2025)

TOP ORIGIN: Kenya | ZAR43.2M |
(Mar 2024 - Feb 2025)

FASTEST GROWING ORIGIN: Zambia
+ZAR643k | (2023 - 2024)

SHARE OF IN GLOBAL IMPORTS
0.038% | ZAR473M
(Mar 2024 - Feb 2025)

FASTEST GROWING MARKET
United States | +ZAR20.4M | (2023 - 2024)

SHARE OF IN GLOBAL EXPORTS
0.6% | Ranking 14 / 172 | (2023)

IMPORTS
ZAR70.4M | Ranking 802 / 1,219
(Mar 2024 - Feb 2025)

TOP ORIGIN
Kenya | ZAR43.2M | (Mar 2024 - Feb 2025) | +ZAR643k | (2023 - 2024)

SHARE OF IN GLOBAL IMPORTS:
0.038% | Ranking 75 / 207 (2023)

ECI OF SOUTH AFRICA: 0.07
Ranking 59 / 132 (2023)

PRODUCT COMPLEXITY -1.8
Ranking 997 / 1044(2023)

Imports
In 2024, South Africa imported ZAR66.8M of Cut Flowers, being the 809th most imported product (out of 1,220) in South Africa. In 2024, the main origins of South Africa's Cut Flowers imports were: Kenya (ZAR41.8M), Netherlands (ZAR9.23M), Zimbabwe (ZAR8.4M), Zambia (ZAR2.65M), and Colombia (ZAR1.35M).

The fastest growing origins for Cut Flowers imports in South Africa between 2023 and 2024 were: Zambia (ZAR643k), Netherlands (ZAR225k), and China (ZAR142k).

Product Classification
Cut Flowers are part of Live trees, plants, bulbs, cut flowers, & ornamental foliage and include: Fresh cut flowers and flower buds for bouquets, and Dried flowers.

Latest Trends
In February 2025, South Africa exported ZAR41.4M and imported ZAR9.24M of Cut Flowers, resulting in a positive trade balance of $32.1M. Between January 2025 and February 2025, the exports of Cut Flowers from South Africa increased by ZAR11.2M (37.1%), from ZAR30.2M to ZAR41.4M. During the same period, imports increased by ZAR6.1M (194%), from ZAR3.14M to ZAR9.24M.

Origins and Destinations
In February 2025, South Africa exported Cut Flowers mostly to Netherlands (ZAR9.17M), United Kingdom (ZAR7.46M), China (ZAR3.51M), Namibia (ZAR3.09M), and Japan (ZAR2.74M). During the same month, South Africa imported Cut Flowers mostly from Kenya (ZAR5.65M), Netherlands (ZAR2M), Zimbabwe (ZAR742k), South Africa (ZAR392k), and Zambia (ZAR212k).

Growth
In February 2025, the year-on-year exports of Cut Flowers from South Africa decreased by 21.4%. This was explained primarily by a decrease in exports to United Kingdom (-ZAR5.36M or -41.8%), China (-ZAR2.17M or -38.2%), and Netherlands (-ZAR2.16M or -19.1%). During the same month, year-on-year imports of Cut Flowers to South Africa increased by 49.3%. This was explained primarily by an increase in imports from Kenya (+ZAR1.56M or 38.3%), Netherlands (+ZAR1.2M or 150%), and South Africa (+ZAR392k or 100%)

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SCRIPTURE

A lazy man's farm is the breeding ground for snakes. A patent on seeds is a patent on freedom. If you must pay for patented seeds, it's like being forced to buy your own freedom. A plant is like a self-willed man, out of whom we can obtain all which we desire, if we will only treat him his own way.

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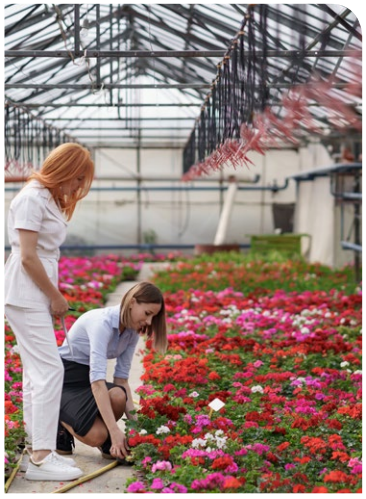

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Survival is currently the most often discussed subject by food producers. The question arises; what has happened to a free and fair trade and production system, without glitches like electrical and water supply shortages, dysfunctional export systems and other curtailments towards progress in food production? South Africa for many decades was on the forefront of quality produce, continuous flow towards markets and exports of note to many foreign destinations? Do we have to blame the 'wheel and deal' players in politics and foreign suppliers only? Napoleon Hill wrote a book, 'Think and grow rich'. It is possibly time as role-players in agriculture to look beyond the current barriers. New technologies like electronification, solarisation and a myriad of latest, well-researched and trialled technologies are available to producers. It is a question of good financial planning, utilizing every possible strategy in the business and moreover, obtaining finance from the right institution. Government can no more 'look the other way' when it comes to export taxes, no assistance towards energy, water, fuel and fertilizer costs in agriculture in the broad. Neighbouring state governments are all assisting producers with these important input expenses so their production levels can increase. We would like our government to look into these aspects and not fall behind their neighbours. With winter on hand, growers juggle their climate control, water supplies and possible greenhouse plant pests. We do our best to publish editorial content of relevance to the current season and hope this will stir feedback to the editor from producers who wish to know more on these subjects. Happy reading!

AVOCADO PRODUCTION

ON THE UP AGAINST BLUEBERRIES

A shift from blueberry to avocado production is experienced in the Western Cape, with avocado plantings increasing significantly. This shift is driven by factors like declining blueberry prices and a growing global demand for avocados.

While the price of avocados has historically fluctuated, recent data suggests a potential for consumer prices to moderate due to increased supply.

Avocado Production:
The Western Cape, specifically areas like George and the Helderberg Basin, are seeing a boom in avocado production. Dr. Guy Witney of Great Brak Avos reported a significant increase in avocado plantings, from about 135 hectares in 2017 to over 1,250 hectares currently.

Reasons
Several factors contribute to this shift, for instance the decrease of Blueberry prices, as Blueberry production has seen a decrease in the Western Cape, accompanied by a drop in prices.

Increased Avocado Demand: Globally, and particularly in the US, there's a growing demand for avocados, which are being promoted by organizations like the Hass Avocado Board.

Climate Suitability: The Western Cape's climate is well-suited for avocado production, allowing for a potential extension of the export season to Europe.

New Markets: The opening of new markets for South African avocados, like China, Japan, and India, offers further potential for growth.

Challenges and Opportunities:
Water Management: Significant irrigation infrastructure investments and water rights would be required for a large-scale shift to avocado production.

Market Development: The South African avocado industry needs to work on developing new markets and ensuring a well-defined value chain to sustain production expansion.

Competition: Increased avocado production in countries like Peru is putting pressure on certain markets, including the European market.

Price Fluctuations:
While avocado prices have seen fluctuations, a Freshela Exporters report noted that the average price of a kilo of avocados in South Africa was R10-R20 in 2021, with the highest price in January at about R35 per kg and the lowest in March at about R10 per kg. However, with the recent increase in supply, it is anticipated that consumer prices will moderate

South Africa's avocado business has grown rapidly due to its avocado orchard expansion and new signed trade protocols. The country's Southern and Western Cape areas are expanding their growing operations to meet the worldwide demand for avocados.

The Netherlands remains the leading export destination for South African avocados, accounting for 69% of total export value in 2023. The country's avocado industry is flourishing. thanks to recent FTAs, such as India's approval for South African avocado access and ongoing negotiations with the Japanese government to enable similar opportunities.

The industry is predicted to triple its avocado output by 2030, possibly shifting from sugar cane to avocado due to rising profitability and worldwide demand. South Africa's success in the global avocado industry is credited to strategic expansion, quality assurance, and government support.

The South African avocado business has expanded significantly, becoming a strong force in international trade.

The country's excellent climate and innovative farming practices enabled it to become a prominent exporter of avocados, meeting the growing global demand for this healthy fruit.

The South African Avocado Growers' Association (SAAGA) reports a three-year average production of 139,400 metric tons (mt), with around 45% exported as fresh avocados and 10% going to value-added products like avocado oil, while the remaining quantities are consumed locally.

One of the factors contributing to increased avocado production in South Africa is the farmers' adaptability. Fruit growers in South Africa's Southern and Western Cape areas are diversifying their farming operations as avocado demand rises locally and internationally.

The Cape areas have planted 1,000 hectares (ha) of avocados, accounting for around 5% of the national crop. Climate change and new categories are driving this increase, such as apple types that require less chilling and ripen earlier than traditional varieties. The Cape has always been the primary blueberry region, but substantial avocado expansion has occurred in the north, allowing the business to supply export markets for extended periods.

Aside from blueberry plantation, avocado production will diversify export opportunities for traders and boost the local economy. Given the demand for both products, it is expected further growth of both blueberry and avocado significance. Avocado production is increasingly expanding into the Southern and Western Cape regions, allowing growers to retail their fruit later than in the past.

Avocado orchards have been built in the Helderberg Basin at Somerset West and Riebeek Kasteel near the Berg River in the Western Cape. This rise increases supplies during the usual off-season and allows for exports at the end of the year, making South Africa self-sufficient in avocados for the domestic market. **SAAGA**

CHOOSING THE RIGHT feed packaging Equipment

By the time fresh produce reaches the packhouse, most farmers feel that the hard work has been done. But now comes the make or break decision; packaging!

The importance of superb packaging can't be underestimated. Your bag is going to engage directly with the consumer. The right system should maximize on-shelf presence, price and consumer satisfaction.

What's in the bag?
Every type of produce demands different packaging. Understanding how the contents of the bag can and will affect the packaging can go a long way in determining the packaging process required, the bag style, bag material needed and the most appropriate choice in packaging equipment.

For example, packing and bagging unprocessed raw carrots is a very different process from preparing punnets of cherry tomatoes for market or bagging peppers.

Which bag?
Choosing the correct bag type and bag material is the logical next step. Standard bag materials generally include low or hi-density polyethylene, polypropylene, net bags, combinations of net and film or paper foil and plastic.

Bag styles include wicket bags, pillow bags, net bags and bags on a roll of film especially designed for form fill seal machines. In some cases, the customer may stipulate bag type, in other cases the choice will be left to the producer.

Ready-to-eat items require specialised packaging processes and bag material. These products are easily packaged using continuous roll film material (often polypropylene, polyester or foil laminates) on a purpose-built conveyor machine.

The bag material is automatically formed into shape, the product is inserted and the package is sealed on three sides and trimmed. The variety of bag, bag size and material combinations is nearly as numerous as the types of products to be packaged. So choosing bag type will need to be done in consultation with a reputable service provider.

Which process?
Well this depends on the product and its potential shelf life and durability. Some goods such as deciduous fruits need gentle handling from cradle to grave.

Produce such as lettuce and salad greens will require rapid form fill sealing and possibly MAP technology.

Potatoes are a little more robust and will happily head to market in a 7 kg paper bag. Systems have to be designed according to produce packed, required time to market and the retail landscape in the supermarket.

How fast do you plan to pack?
Operating speed will have a great bearing on your choice and the cost of system. Today, highly automated packaging systems are readily available and operate at incredible speeds. But not everybody needs this high level of manufacturing capacity.

In fact, many packaging systems are neither used every single day nor at maximum capacity – so choosing a machine that closely matches your operational production level is an important consideration.

Many semi-automatic systems offer acceptable speeds and performance at lower costs.

Choosing a supplier
Here are some important points for consideration, like; Has the supplier been in the business for a long time? Reputable suppliers will have been in business a long time, will have a proven track record and don't need to hurry you into a decision.

Reputable suppliers will make every effort to understand your needs, before recommending a system. Remember equipment suppliers are rarely bag manufacturers so there is a need for them to work in tandem, so that the system can operate with the chosen bag.

Also, does the supplier have a large installed base? Good suppliers have a wealth of happy customers a solid client base. Another question is whether fresh produce farmers are satified with their equipment? This is very important to check.

A few well-placed phone calls to some existing clients could save you major pain later. Don't be frightened to ask tough questions.

Are replacement parts widely available? This is a no brainer, but check anyway. Downtime affects bottom line and spare parts from every section of the installation should be readily available. And, are technical and support staff qualified and available to help when needed? Again, this is essential that your supplier offers this. There is nothing more frustrating that buying a system, that doesn't run at optimal performance.

Make sure that the supplier can work with you on a customized solution or configure a system to meet your unique requirements.

Every packhouse is different, so don't be pressured into accepting a system that is right for someone else but not for you. Selecting the right equipment now will not only save headaches and frustration in the future, but will go a long way to ensuring long term profitability.

Source: Goldpack

Fruit growers under shade net or open land are globally known for their focus on quality. Therefore, they routinely navigate heat and water stress as they modernize their orchard systems, and growers around the world can learn from them in the face of a changing global climate.

The International Fruit Tree Association visited Dutoit Agri in South Africa's Koue Bokkeveld region to learn how the company and other local growers are adapting their orchard systems for greater efficiency and resilience to climate stress. (Pic: TJ Mullinax / Good Fruit Grower)

CLIMATE FUTURE FOR FRUIT GROWERS

Proper irrigation management is critical at Sandrivier Orchards in Wellington, and everywhere in South Africa, where water supply is the factor that limits production on most farms. Growers have found that protective netting, erected here to reduce sun and wind damage to plums, also reduces water demand.

Although water supply constraints limit South African fruit growers' ambitions for expansion, many are turning to solutions such as protective nets, drip and deficit irrigation, mulch and dwarfing rootstocks to grow more fruit with less water.

Louis Reynolds, a crop consultant who volunteered as a tour guide when the International Fruit Tree Association visited the Ceres region of South Africa recently, said "Water is the most scarce resource. There is a lot of land still available to plant, but there is not the water."

According to Wiehann Steyn, the science director for Hortgro, the South African pome and stone fruit growers' industry association, managing their limited water poses one of the most significant production constraints growers face.

South Africa has always faced heat and water challenges; the changing climate is only intensifying them That's why climate mitigation was a top topic across the IFTA's visits to five farms in five different growing regions in the fruit-heavy Western Cape

"We're like an open-air laboratory for people who want to see how climate changes affect fruit production," said Steyn, who helped organize the tour. The solutions growers are adopting vary depending on their crops, local climates and soils, and their willingness to be on the leading edge of change, he said.

"South Africa is really a country of diversity. It's not just a diversity of people, it's a diversity of ideas," Steyn said.

Keep up your water consevation

While growers benefit from government-run reservoirs, known in local parlance as dams, they also construct their own sizeable, on-farm dams. "Eighty percent of our rain comes in the winter, so we need to collect it and store it for summer," Reynolds said.

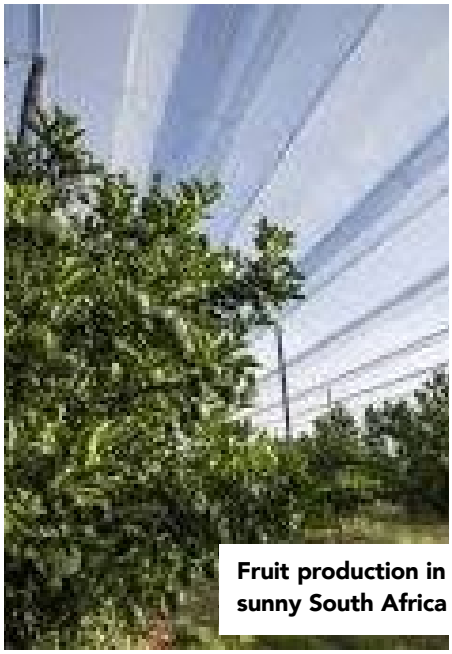
In 2018, a drought tested the limits of the region's water management. Justin Mudge, who owns Chiltern Farms in Vyeboom, along the shores of the Theewaterskloof Dam, credited the water-holding infrastructure built by his father and grandfather, both engineers, for the farm's ability to survive the drought.

"In 2018 (the dam) was a sand basin as far as the eye could see, down to 11 percent of its capacity … so we went into proper survival mode," Mudge said. "I went a bit crazy building dams (on-farm) in the middle of the drought, but we did, and at the end of the year we were blessed with a lot of rains and filled all those dams up."

To deal with the downsides of those winter rains, growers often plant trees on berms. The practice also helps make the most of limited topsoil and helps the soil warm up more quickly in the spring to jump-start the growing season, said Stephan Strauss, manager of Sandrivier Estate. The farm has nearly 200 hectares of plums planted on Marianna rootstocks on berms.

To conserve water, Sandrivier also moved away from rows of windbreak trees to fully netted blocks. Also, heavy mulching with wheat straw also helps retain soil moisture and is a common practice in South Africa, Reynolds said. At Dutoit Agri's farm, orchard blocks mingle with expanses of dryland wheat, conveniently leaving plenty of straw for orchard use.

South Africa grows a lot of Granny Smiths — it's the preferred pollinizer



Fruit production in sunny South Africa

▶ 7

Net effects

in many orchards — but sunburn can cull nearly half the crop. Similarly, sun damage can result in significant amounts of Cripps Pink and its sports, Lady in Red and Rosy Glow, failing to make the Pink Lady grade, said Graeme Krige, general manager for consulting firm Fruitmax Agri.

Krige hosted the tour at Oewerzicht Farm in a Cripps Red (marketed as Joya) planting under drape net where he said in many cases, the investment in shade netting can pay off in a season.

Growers install netting primarily to protect fruit, but the move also saves a lot of water. Hannes Laubscher of United Exports estimated the savings at 15 percent. It allows them to cut back on fertilizer as well, since the trees respond to reduced sun stress with more growth.

"Your productive curve is just a lot quicker under the nets for us," he said when the tour visited a young nectarine block that had cropped 20 metric tons per hectare in its second leaf under fixed nets.

In older, semidwarf apple and pear plantings, drape nets are the common solution. In some orchards, the Granny Smith pollinizers can be seen under "sock" nets, single-tree, black nets just protecting the sun-sensitive green apples.

At Oewerzicht Farm, the nets go up 40 to 60 days after full bloom, and workers work under the drape nets throughout the season, Krige said. That includes leaf removal by hand, to get more color on the fruit — a practice he's found necessary, along with reflective material, to balance out the reduced light from the netting.

"Leaf removal in our climate runs a risk, but you mitigate it with the netting," he said.

Oewerzicht has also adjusted its pruning practices for Packham's Triumph pears that have been grown under nets the past four years to create more open canopies. To control vigour on the 12th-leaf trees, they also make two girdling cuts each year, at green tip and 35 days after full bloom, Krige said.

Drape nets offer lower up-front costs, but the labor costs add up quickly, so on newer plantings, many growers are investing in structured shade netting.

"With climate change, a lot of countries are tapping into the expertise we have built up," he said. He noted the region's recent research stints with three leading, global tree fruit physiologists: Luca Corelli Grappadelli of the University of Bologna in Italy, and Washington State University's Lee Kalcsits and Stefano Musacchi, who will be there through early 2025. It's a real credit to the industry "to have these world-renowned researchers interested in what we are doing over here."

By: Kate Prengaman/Good Fruit Grower

Willie Kotze, technical manager for Dutoit Agri, shows the International Fruit Tree Association one of his experimental blocks: a formally trained Lady in Red block on M.9 Nic 29, planted with 1 meter between trees and 3-meter rows, that he hopes will produce more uniform fruit with less labor inputs over the long term. A recent summer pruning pass allowed more light into the canopy. (Pic: Kate Prengaman/Good Fruit Grower)

Farm women walk past a new Dutoit Agri orchard planted with concrete posts to support the trellis and, eventually, shade netting in the Witzenberg Valley. (Pic: TJ Mullinax/ Good Fruit Grower)

GREENHOUSE FARMING CONTRIBUTES TO SUSTAINABLE AGRICULTURE

The world's population is expected to reach an estimated 8.5 billion by the year 2030. With a population this high, the demand on the agricultural industry is greater than ever.

The world's population is expected to reach an estimated 8.5 billion by the year 2030. With a population this high, the demand on the agricultural industry is greater than ever.

To ensure that the present needs of our society are met without compromising the ability of future generations to meet their own food production needs, sustainable agriculture practices are of the utmost importance.

Many leaders in the greenhouse industry understand this responsibility, and have taken the necessary steps to ensure they do their part. Here are 3 ways that the top greenhouses contribute to sustainable agriculture.

1. WATER RECYCLING

For many greenhouses, a fertilizer solution called nutrient feed-water is used to help grow their produce. This feed-water solution gets recirculated throughout the facilities across multiple growing cycles. This process minimizes the inputs into local surface water, groundwater and soil.

2. CO2 RECAPTURE

Keeping a large greenhouse warm enough to grow fresh and flavourful produce year-round is not an easy task. In order to ensure an optimal temperature is maintained, many greenhouses use a special boiler system to heat their operations. As CO2 is expelled from this system, it can be captured and filtered, and can then be used as a natural, air-borne fertilizer to feed their growing plants.

3. NATURAL POLLINATION

Using bees to naturally pollinate produce is practiced by some farmers in the greenhouse industry elsewhere but a device that shakes the twines or manually tapping the twines is still practised in South Africa. In other countries the hard-working bumblebees help improve the quality and quantity of the produce grown, and help reduce the need for harmful chemicals and pesticides. By: Kevin Wood

In order to obtain optimum production the three basic routes should be followed as explained in this editorial.

Chili thrips, Scirtothrips dorsalis Hood, is a more recently introduced pest that was first reported in the US from Florida in 2004 and Texas in 2008.

Producers applying the wrong combination, environmentally and health-friendly pest control strategies might increase crop pest populations. A new European research project, led by University of Amsterdam researcher Merijn Kant, will put this counter-intuitive idea to the test.

CONFLICTING PEST CONTROL could increase Pest Populations

Pests on agricultural crops can be a serious nuisance for farmers who do their best to keep the unwanted bugs in check. To limit impacts on the environment and human health, crop protection in the European Union relies increasingly on the use of biological control, pest-resistant plants, and 'green' pesticides containing natural compounds instead of synthetic compounds.

As each of these methods is insufficient effective on their own, there is a tendency to combine the strategies. This concept of integrated environmentally-friendly pest control sets the agenda for agriculture.

Wrong combinations

However, using the wrong combination of strategies may actually lead to an increase in crop pest populations. 'Predator-prey models predict that resistance breeding and pesticides – with synthetic or natural – may hamper biological control to an extent that the level of overall crop protection will often decrease rather than increase', says Dr. Merijn Kant of the Institute for Biodiversity and Ecosystems Dynamics.

Giving plants a helping hand by tweaking their genes through targeted breeding to create resistant plants might hinder the actions of biological control agents just as they hinder unwanted pests.

One instance in which this can happen is when the plant is resistant because it is less palatable for insects. This will affect not only the harmful insects but also the beneficial ones since their prey will be of poorer quality.

Mathematical models predict that under these conditions harmful insects may actually escape predation better than if they feed on plants void of resistance. They can thus reach higher densities and inflict more damage to the crop. In this case, plants without defences may be defended better with biological control.

Urgent risk

The EU has recently banned various popular pesticides, creating an open niche for breeders to invest in new resistances for their crops. The time is now for further research on conflicting environmentally friendly pest control strategies.

"'The counter-intuitive concept should be tested because the results can profoundly alter the rationale behind the design of integrated pest management strategies," says Dr. Merijn Kant. "If we ignore this, we expect an enormous decrease in efficiency of environmentally friendly pest control, one that resistance breeding and 'green' pesticides cannot compensate for."

Defenceless defences

As the coordinator of the new European project Kant cooperates with scientists from three different research institutions in the Netherlands, Belgium and Spain.

Together they assessed to which extent prey densities in a predator-prey system, i.e. a bio-control agent and its target pest, are influenced by chemical plant resistance traits and natural pesticides during a three-year project, entitled Defdef (short for 'Defenseless defenses').

Source: University of Amsterdam

Two-spotted spider mite and eggs.

There are four species of aphids commonly found in strawberries: the green peach aphid, Myzus persicae, the melon aphid, Aphis gossypii Glover, the potato aphid, Macrosiphum euphorbiae, and the strawberry aphid, Chaetosiphon fragaefolii.

CITRUS PRODUCTION under coloured shade nets – important facts

Practical insights and the use of shade nets come together as we take a closer look at how South African citrus growers are harnessing netting technology to boost yields, tackle climate-related risks, and improve overall fruit quality in undercover production systems.

Shade netting could provide significant solutions to fruit-quality-related problems and increase producer competences. Production is somewhat higher than under bright ones (white and transparent) shade net.

The use of non-permanent drape nets is also popular among Israeli citrus producers for protecting fruit against hailstorms in late autumn and early winter (personal correspondence, Dr. Avi Sadka), as well as in California and Australia to restrict cross-pollination and development of seeds in mandarin cultivars, specifically.

The cost comparison between permanent and drape nets favours the use of drape nets, as the lifetime of the nets is longer, with no costs for poles, cables and so forth.

However, there are some worrying questions on the coverage and efficacy of medium and full-cover foliar fungicide and insecticide sprays, as well as the effects of drape nets on fruit set, considering that Foliar GA3 sprays may also be impacted.

Wind damage due to abrasion between drape nets and outside fruit could also reduce the benefits under drape nets, if they remain on the trees after petal fall.

Although the use of shade nets is rapidly expanding in the various South Africa citrus production areas, many critical research questions on the effects of shade nets on tree physiology and fruit quality are unanswered and require urgent attention.

Also, many practical issues regarding production logistics and management of orchards under nets are neglected in some instances. Visits to various citrus producers making use of shade nets to find out their first-hand experiences on the effects of shade nets on citrus production.

EXPERIENCES OF PRODUCERS

A producer in the Northern cape planted 35 hectares of 'Nadorcott' mandarin trees a few years ago – 12.5 ha under permanent 20% white nets and 12.5 ha outside.

During spring and summer, they struggled with very strong winds and were forced to consider erecting permanent netting structures over some of their new plantings of high-value cultivars.

Young trees under nets became almost double in size, compared to those outside.

CONCLUSION

What to plant, where, and how to optimally apply which technologies will be of critical importance.

To avoid exposure to the future threats of climate change and increased competition in the markets, producers should reconsider. Shade nets could provide significant benefits against these threats, but much practical information and answers to critical research.

A co-funded project between the Department of Science and Technology (DST) and Citrus Research International (CRI) in the Research for Citrus Exports programme is underway.

Source: Horticultural Science, University of Stellenbosch

IMPLEMENTING IPM AND BIO-CONTROL

The demand for quality fresh produce is rising because of consumer education through the abundance of food programs on television and in magazines focusing on living healthy. The fresh produce farmer now has to become more conscious of managing pests and diseases on his crop in order to still maintain his market but at the same time keeping an eye on his bottom line. Here are some tips on how to start and maintain IPM by using biological control.

As with any new technology, start small. Learn the system in one greenhouse and expand as you gain confidence and knowledge.

Discontinue using insecticides with long residual activity at least 1 to 2 months prior to introducing bio-controls. Insecticide residues on plants and greenhouse fixtures can be deadly to bio-control agents. To be certain about the compatibility of a compound that has been applied, consult bio-control suppliers for current information on specific products.

Optimal pest-free production is only possible by daily inspection of greenhouse plants.

SOFT PESTICIDES

Consider the use of "soft" or "reduced-risk" compounds (e.g., insecticidal soap, ultra-fine horticulture oil, neem compounds) for treating pest outbreaks that occur while managing with bio-controls. Some growers prefer having a sprayer designated only for soft pesticides, thus voiding contamination with more toxic insecticides.

LOGISTICS OF BIOCONTROL ORGANISMS

While Koppert claims to be the international market leader in the field of biological greenhouse crop protection, large-scale production of natural enemies such as Encarsia Formosa and Aphidius colemani takes place in the main facility located in the Netherlands. Several other large producers include Biobest (Belgium), a leader in bumble bee pollination and biocontrol producer; Syngenta Bioline (England and California); and Applied Bio-Nomics, Ltd. (Canada), largest producer of greenhouse bio-controls.

More than twenty producers in the United States specialize in the production of many species of predatory mites, lacewings, Trichogramma parasitoids, beneficial nematodes, and filth fly natural enemies.

Because most greenhouse bio-controls are shipped from Europe or Canada, most distributors require orders to be placed by Thursday for delivery the following Wednesday. Therefore growers must plan ahead. Products are delivered directly to growers via aviation operators.

Most natural enemy producers screen for quality and use packaging or best-used-by dates. Be cautious of suppliers who do not put dates on their materials. When bio-controls arrive, check for viability.

Predatory mites can be checked by shaking material onto a white sheet of paper and looking for movement. For bio-controls shipped as pupae, a small portion of each shipment should be set aside in small, sealed containers, such as

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plastic bags or yogurt cups, and observed for adult emergence.

Parasitoids such as Aphidius colemani (shipped in bottles) should be placed in the greenhouse within 24 hours of receipt. Mortality of parasitoids can be determined by checking emergence rate. During warm weather, bio-controls should be shipped with cooling material. Inform employees that you will be receiving bio-controls so that the materials can be stored in a cool area if they cannot be distributed immediately.

Bio-controls are available for all major greenhouse pests, including aphids, caterpillars, fungus gnats, mealy bugs, scales, shore flies, spider mites, thrips and whiteflies.

TYPES OF BIOCONTROL ORGANISMS

Before starting a biological control program, recognizing the characteristics of predators and parasitoids and how they are used for each unique pest management situation is important. Most bio-control organisms fall into the following categories described below.

PREDATORS

A predator kills and consumes many prey individuals as food, and they are usually as large or larger than their prey and quite capable of moving around to search for their prey. Predators can be beetles, mites, mantids, flies and bugs. In addition to ladybird beetles, many other predators are commercially available for introduction into crops.

PARASITOIDS

Parasites, by definition, feed on or in a host without killing it directly and therefore are usually not effective in controlling pest populations. Parasitoids, on the other hand, develop within the body of its host, killing it directly. Therefore, the term parasitoid will be used when referring to bio-control agents that invade their hosts eventually killing them.

Parasitoids are usually smaller than their prey. One or more grow and develop in a single host. As the parasitoid larvae feed and mature, the host is slowly killed. Adult parasitoids (usually wasps or flies) are highly mobile and parasitize many individuals.

Parasitoids attack many different species of pests, such as aphids, whiteflies, caterpillars, leaf miners, flies and scales.

Ladybird beetles

Parasitoids on a greenhouse plant.

PARASITES

A group of organisms parasitic on insects are often referred to as entomopathogenic (insect-parasitic) nematodes. Nematodes are simple roundworms lacking segments or appendages and may be parasitic, free-living, or predaceous. Entomapathogenic nematodes have a symbiotic association with bacteria (Xenorhabdus spp.) that is lethal to many soil-dwelling insects but do not affect animals and plants.

The two genera of insect-parasitic nematodes used for pest control include Steinernema and Heterorhabditis. Insect-parasitic nematodes have been used successfully to control soil-dwelling pests in greenhouses, nurseries, strawberries, mushrooms, and turf, replacing traditional synthetic pesticide drenches.

Nematodes require moist soil to be effective, and soil temperatures should remain between 16°C and 32°C. Because of the high degree of safety, nematode applications are exempt from re-entry intervals and worker protection standards and do not require a mask or other safety equipment. Nematodes can be applied like most conventional pesticides using a pull-behind sprayer, fertigation system, or backpack sprayer.

PATHOGENS

Entomopathogenic fungi (mycoinsecticides) are pathogens that infect and kill insects. Fungal spores must have direct contact with insects to be effective. As spores attach to the insect cuticle, they germinate and the fungus grows into the body cavity. Beauveria bassiana (Balsamo) Vuillemin is an entomopathogenic fungus that may

The predators are shipped in a container with saw dust.

control infestations of whiteflies, some thrips, and certain species of aphids.

Hyphae – small tubes that grow from spores – enter the body cavity of the pest and then attack the internal organs. The infected insect stops feeding and dies within a few days.

The increased demand for biological control products can largely be ascribed to problems developed from the use of chemical pesticides. These problems include pest resurgence, resistance, environmental pollution and risks to human health. The biological control of plant pests and pathogens continues to inspire research, and there have been developments in many fields.

Biological control is designed to reduce plant pathogens and limit pests such as insects, parasitic nematodes and weeds. In the narrowest sense, bio-control involves the suppression of pest organisms by other organisms.

However, the interrelationships of many environmental variables can result in multiple interactions among organisms and their environment, several of which might contribute to effective biological control. **ARC-VOPI**

Tacky insect strips in the greenhouse are inspected to control the efficacy of the predators

AGGREGATE SUPPORTS SUCCESS IN COMMERCIAL FARMING

Commercial farming forms the backbone of South Africa's agricultural economy, playing a critical role in food security and contributing significantly to economic growth. As farming operations face increasing pressure to boost productivity and efficiency, the adoption of innovative solutions has become essential. Grolite® from Pratley is a perlite-based growing medium, known to be a transformative product for farmers, from small-scale enterprises to large agricultural operations.

Marketing Director Eldon Kruger highlights the impact of Grolite® on modern farming practices. "Grolite® is a scientifically designed perlite-based growing medium that delivers superior results. Its unique properties and various grades sizes cater to the diverse needs of commercial agriculture, making it a reliable and effective choice for improving plant health and boosting productivity."

Available in Type 1 and Type 2 grades, with sizes ranging from fine to coarse, it accommodates a range of agricultural practices. This flexibility enables farmers to choose the specific grade that best meets their operational needs, whether it is for seedlings, hydroponic systems, soil aeration, or improving moisture retention in crop fields.

Grolite's key advantage is that it is a sterile growing medium free from any form of harmful pathogens. This ensures a clean and healthy environment for plant growth, which is particularly important for the development of fine hair roots. The optimal air-water balance facilitated by Grolite® further enhances root systems, leading to faster-growing and more resilient plants. Its excellent

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PRECISION IRRIGATION: How Efficient Water Use Cuts Costs and Improves Profitability

In today's agricultural landscape, the pressure is mounting. Water is scarce, costs are rising, and farmers – whether small-scale or commercial – are expected to produce more with less. Precision irrigation offers a practical and effective response to these challenges, providing farmers with the tools they need to make the most of every drop of water, every unit of fertiliser, and corner of your farm.

Why Precision Irrigation Matters

Efficient irrigation is pivotal in sustainable food production. It depends on delivering the right amount of water and nutrients at the right time. Too much or too little water can negatively affect plant health, reducing both yield and quality. Precision irrigation solves this by placing control in the farmer's hands, allowing water and nutrients to be applied directly to the root zone with minimal waste.

Drip irrigation offers the highest level of water-use efficiency. It allows the farmer to manage resource use efficiently, particularly under challenging conditions. By applying water slowly and directly to the plant's roots, it drastically reduces evaporation, run-off, and deep percolation – ensuring more water reaches the plants where it is most needed.

Not Just for Big Farms

One of the most persistent myths about drip irrigation is that it's too complicated or only suitable for high-value crops. This isn't true. In fact, many farmers who switch to drip irrigation find it simpler and more reliable than other irrigation methods. The key lies in proper setup and regular maintenance, not in complex equipment or expensive systems. Filters must be kept clean, and driplines should be flushed regularly to prevent clogging. Once a dripper is blocked, it cannot be unblocked. Good filtration and regular cleaning ensure your system continues to perform well and avoids unnecessary repair or replacement costs.

A well-managed basic drip system can significantly increase efficiency, reduce costs, and boost production, regardless of the crop. Another strength of drip irrigation is that it scales easily. A smallholder farmer with just a few beds of crops can benefit as much as a large commercial grower. Whether you're growing for your own household or for the market, using less water and fertiliser while achieving better results is always a win.

Understanding Water and Soil

Getting the most out of your irrigation system begins with understanding how water moves through your soil. Not all soils absorb water in the same way. Sandy soils drain quickly, while clay soils hold water for longer. Observing how water moves in your fields—by digging near the root zone after irrigation—helps determine whether you're applying the correct amount.

Calculating a proper irrigation schedule based on soil type, crop requirements, and local conditions can make a significant difference. Remember, efficiency doesn't come from irrigating more – it comes from irrigating better.

Choosing the Right Tools

The success of any irrigation system relies on selecting equipment that fits your needs. Dripline selection is a critical component of precision irrigation, which aims to optimise yield, resource efficiency, and crop health through tailored water and nutrient application. Success hinges on selecting the right dripline based on factors such as crop type, soil behaviour, topography, water availability, production goals, and system longevity. Key decisions involve choosing the appropriate dripper type, flow rate, spacing, wall thickness, and essential features like pressure compensation or root intrusion inhibitors – always balancing performance, cost, and quality. A holistic approach that considers all variables together – not in isolation – is essential to hitting the target in sustainable, high-performing irrigation design.

The Payoff of Precision

Precision delivers results. It delivers a clear proposition: Boost yields, save time and money by delivering the correct amount of water and nutrients at the correct time and in the right place with no waste, irrespective of topography or climate. **Source: Netafim.co.za**

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wicking properties also promote optimal and uniform water distribution within the growing medium, supporting consistent plant health and productivity.

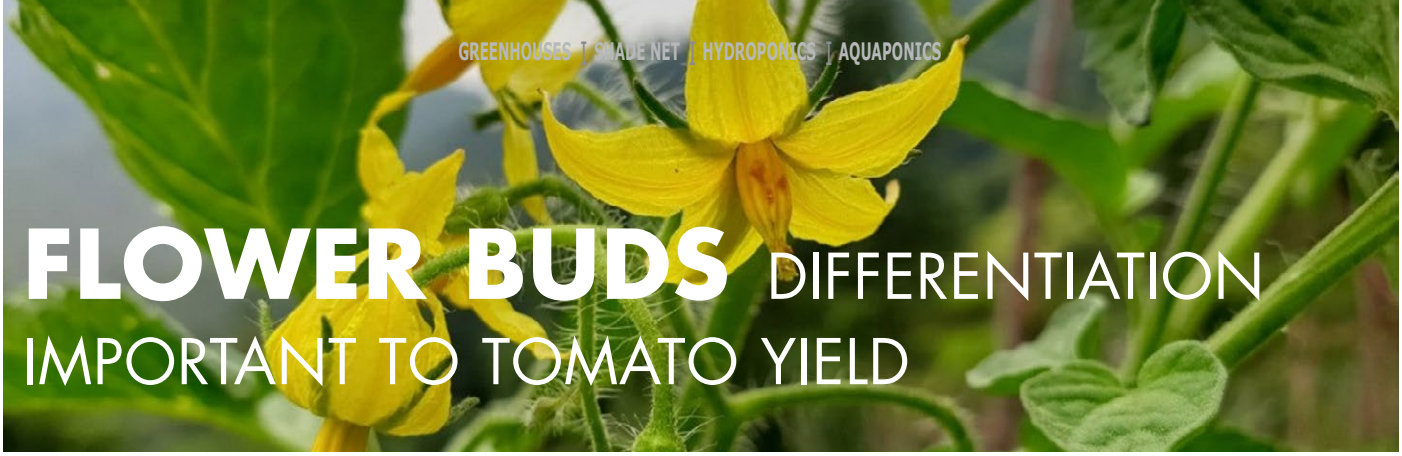
Nutrient uptake is another area where Grolite® excels, enabling crops to absorb essential nutrients more efficiently. This is complemented by its inert and stable nature, which prevents it from dissolving or degrading over time. As a result, Grolite® provides a durable and consistent growing medium, offering farmers reliability over extended periods. Furthermore, it also helps to retain fertilisers in the soil, ensuring that nutrients remain available to plants for longer durations, which can significantly improve yield.

"The benefits of Grolite® extend well beyond just enhancing plant growth," notes Eldon. As a mulch layer, it retains soil moisture and maintains stable temperatures, helping crops thrive in South Africa's diverse and often challenging climatic conditions. Its role in improving soil aeration and drainage prevents compaction and waterlogging, further promoting the health and resilience of crops. These properties make it an excellent choice for both traditional farming methods and more advanced systems like hydroponics.

South Africa's agricultural sector faces the dual challenge of increasing production while conserving resources. Grolite® directly addresses this challenge by enabling farmers to achieve higher yields with improved efficiency.

Eldon underscores the broader significance of the product, stating: "Grolite® is more than just a growing medium. It is a strategic resource that empowers farmers to achieve better outcomes whilst also preserving natural resources.

Source: Pratley



FLOWER BUDS DIFFERENTIATION IMPORTANT TO TOMATO YIELD

The tomato (Lycopersicon esculentum) is a fruit vegetable crop and is produced throughout the world by various categories of farmers, from backyards, small to commercial farmers.

It is planted in both open and close (tunnel) areas for fresh and industrial markets. Tomatoes are transplanted to the field as seedlings for better establishment and production (yield). The tomato can be grown as an indeterminate or determinate plant.

Flower buds' differentiation is one of the most important initial growing stages for better production, because it influences the quantity and quality of tomato yield, especially from the first three fruit clusters. The process of flower buds' differentiation occurs mostly from 25 – 30 days after seed germination and can only be observed under microscope.

Most of both tunnel and open field producers do not regard flower bud differentiation as one of the important growth stages in tomato production for better initial yield. Poor quality growth media and incorrect temperature promote poor flower buds differentiation.

RELATIONSHIP BETWEEN FLOWER BUDS DIFFERENTIATION AND TOMATO PRODUCTION (YIELD)

Flower buds' differentiation is primarily influenced by quality of growth media and optimum temperature. When tomato seeds are planted in good quality growth media with balanced nutrients, enough aeration and drainage, seedlings will be healthy and strong. Therefore, they will be able to develop good flower bud differentiation.

Optimum temperature (240c –280c during the day and 120c – 150c during the night) is needed for good flower bud differentiation after sowing and before transplanting. After the 8th or 9th leaf has been differentiated in the apical meristem (growing point), the first flower bud is mostly differentiated. Stage of flower buds differentiation can only be observed under microscope. Visual appearance of the plant at this stage is a small seedling with two to three (2-3) true leaves, which is mostly 25 to 30 days after germination, as indicated in figure 01.

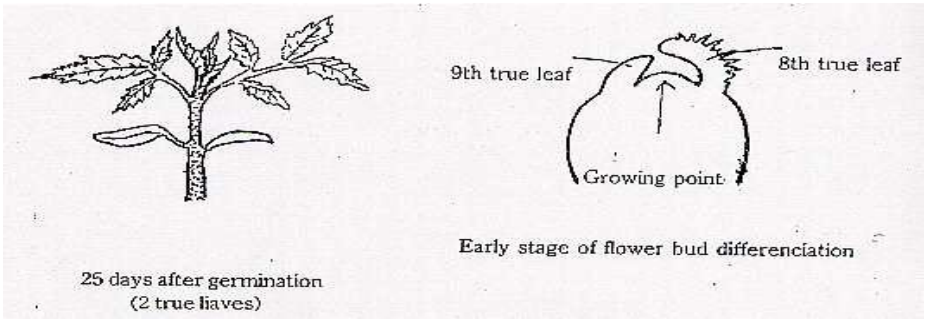


Figure 1: Initial stage of flower buds' differentiation

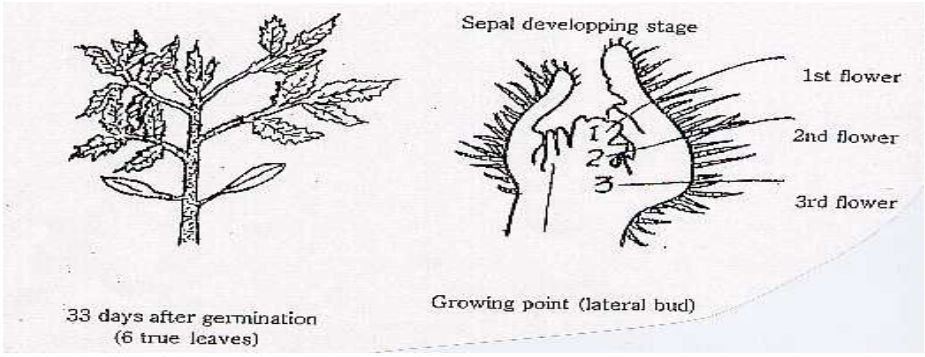


Figure 2: Complete process of first to third flower bud differentiation.

Flower buds' differentiation is physiologically a very important stage for the growth of the tomato plant and it is advisable not to apply fertilizer, especially nitrogen until differentiation of the first three flower buds are completed. When nitrogen is applied before or at flower bud differentiation stage the process may be delayed or poorly developed, due to a high rate of vegetative growth.

If the vegetative growth is vigorous, the reproduction development of a crop is poor. After buds' differentiation the growing point will differentiates three (3) leaves, and then differentiates the second flower bud and the process continues until the plant is pinched or matured. Differentiation of the first to third flower buds is completed mostly from 30 – 35 days after germination or at 6 true leaf stage as indicated in figure 2.

MONITORING

Tomato plants need close monitoring from seedling stage. Seedlings must be well established. Flower buds differentiation is one of the most vital early growth stages in tomato production for better initial yield, especially on indeterminate tomato plants. Producers need to create favourable conditions for development of good flower buds differentiation.

It is necessary to utilize quality growth media and optimum temperature for better flower buds differentiation. The application of fertilizer after seed germination, especially nitrogen should be avoided or regulated until the formation of first to third flower buds, which takes about 25 – 35 days after germination or from 2 to 6 true leaves stage.

Therefore growth media must have balanced nutrients to avoid nutrient deficiency during flower bud differentiation and seedlings must be produced under optimum temperature for better flower bud differentiation and initial yield.

By: Letlhogonolo MJ Dikolomela, Crop Science; Directorate: Scientific & Technical Support Services, N-West DACE

THE IMPORTANCE OF YIELD and different varieties of tomatoes

The tomato producer needs to take a close look at the different varieties on the market. When comparing varieties, growers often use yield as the most important determining factor. For sure the tomatoes must also be of high quality and thus marketable, the disease resistance must be good, and so on.

The question however is; what makes one variety different from another when it comes to yield advantage?

Yield is made up of two factors – fruit size and fruit number. Fruit size is affected by the genetic capacity of the variety, the overall fruit load, management and climatic conditions. Most growers assess relative fruit size optically during the life of the crop and pay particular attention to the fruit size at the end of the crop cycle.

Very often a grower will use fruit size as a critical selection factor and will dismiss a variety as having fruit that is too small (on observation only) without really paying any attention to the overall yield.

What is probably more valuable to assess is fruit number, or fruit load. All things being equal this is usually a reaction of the ability of the variety to set fruit, i.e. to turn flowers into fruit. This is the one single factor that sets two varieties apart in their ability to yield well, particularly under difficult conditions.

Some time ago planting of a very well-known and widely planted variety was assessed in Mpumalanga. It reiterated the importance of thorough and uniform fruit set. The seedlings were transplanted in early January, and the third truss was showing yellow flowers at the time of assessment.

It was immediately obvious that trusses one and two had suffered from poor set. On each truss only two or 3 flowers had set fruit. The rest had dropped off, or would set so far behind the primary fruit as to be too small to be marketable.

This meant that at least 3 flowers per truss had failed to set. January and February are very hot months in Mpumalanga, and despite the best efforts of a very good grower the conditions were too extreme for this variety to set fruit properly.

A similar trend was also seen in early summer at the same farm, so one can easily conclude that this variety, while good in other ways, has a problem with fruit set in the heat.

When comparing the experimental varieties under evaluation showed not only complete set, but also uniform set. On each truss five to six fruit had set at the same time, and conspicuously on the flowering truss, all the flowers were open at the same time.

Uniform flowering means pollination at the same time, leading to even fruit size and also ripening and harvesting at the same time. These varieties originate from a breeding programme known for good heat set and which has already delivered a top performing variety.

This is an easy observation to make in the field, and intuitively one knows that good fruit set is better, but what is this characteristic really worth to the grower? Given that a grower has a plant density of 25 000 plants per ha, under shade net - if one assume an average fruit size of 140g and give the variety the benefit of the doubt by considering that only the first two trusses are problematic, i.e. one assume that the later trusses set 100 per cent, then the producer can calculate the lost value per fruit, and per ha for different market prices.

For his high quality fruit the grower in question would probably expect to average a gross return of around R3.50 per kg for his total crop, over a total planting of about 5ha. Losing two flowers on just the first two trusses due to poor fruit set in the heat could cost this grower a whopping R250 000! To make this situation even more painful, this loss is from the bottom line, as all the planting, establishment and production costs still have to be paid, whether there are five fruit on the truss or three.

Perfect set, where either a fruit sets or the flower drops, is not the only important factor – equally important is the ability to set fruit on a truss at more or less the same time.

When selecting a variety, pay attention to the uniformity of flowering, the uniformity of fruit set and the ability to set fruit under a range of climatic conditions. This one point could make a huge difference to the producers' bottom line.

From: Tomato Growers.

WHITEFLY PEST in the Greenhouse: Good Pest Management Required

Fig. 1. Whitefly adults

Fig. 2. Whitefly adults with sedentary nymphs (white arrow)

Fig. 3. Sooty mold growing on potato leaves covered with honeydew that was produced by whiteflies.

The most common insect pests found in protected environments like glasshouses are aphids, thrips, leaf miners, white flies and spider mites. Of these, whiteflies are the most easily recognized because they fly up in strikingly white swarms when disturbed.

Whiteflies are not flies, but tiny white insects belonging to the same insect order as aphids (Hemiptera). They occur worldwide, and are common pests of crops planted in protected environments. They have piercing-sucking mouthparts and, like aphids, suck the sap from plants.

Whiteflies attack a variety of agricultural crops, including potato, tomato, sweet potato, legumes, cucurbits, crucifers, lettuce, tobacco, cotton, cassava and various other crops and weeds. Approximately 16 whitefly species occur in South Africa, of which two, the tobacco whitefly, Bemisia tabaci and the greenhouse whitefly, Trialeurodes vaporariorum are commonly found on vegetables.

Whiteflies hide on the underside of leaves, and are usually only noticed when leaves are turned upside down. They are approximately 1–2 mm long, milky white (Fig. 1) and are very visible because they fly up in swarms when disturbed. Whitefly nymphs (larvae) are very different from the adults. They are wingless and translucent (Fig. 2 arrow) and become immobile after the first moult.

Only the first instars (also called crawlers) are capable of moving around while searching for a feeding site on the undersides of leaves. Because of their translucency, they take on the colour of the leaf (Fig. 2 arrow) and are not often noticed. They resemble flat scale insects and on some crops, e.g. cucurbit leaves, they are nearly invisible to the naked eye.

Whiteflies may damage crops in three different ways. Firstly, by direct feeding (sucking out plant sap), secondly by acting as vectors in transmitting serious virus diseases to plants and thirdly, by producing copious amounts of honeydew. The sucking, feeding action of whiteflies does not always damage plants. However, when plants are very small or when plants are under stress, direct feeding may cause wilting and eventually yellowing of leaves and die-off.

Up to 50% loss has been reported on some crops directly linked to whitefly feeding. However, serious yield losses may occur when certain viruses, e.g. the tomato curly stunt (ToCSV) or the geminiviruses, are present in the ecosystem. Whiteflies may transmit these viruses when moving between healthy and infected plants.

Viruses cause malformed and chlorotic leaves, stunted growth and poor yield. Heavy yield losses are usually encountered when whiteflies infest very young plants with viruses. Whiteflies are notorious for their honeydew secretions.

Honeydew is the sweet, sticky, excretions of plant-feeding hemipterans, usually secreted in such a way that it always lands on the upper leaf surfaces lower down from their feeding sites. Sooty mold (Fig. 3) may grow on leaves that are covered with honeydew, eventually killing individual leaves.

Sometimes entire plants may be killed, e.g. the potato plant in Fig. 3. Sooty mold (Capnodium spp.) is a saprophytic black or brown fungus that grows superficially on leaf (Fig. 3) and fruit (Fig. 4) surfaces on which honeydew has accumulated. It does not cause disease, but may downgrade the value of produce because the sticky brown/black powder does not easily rub off. The black layer of fungal growth also prevents photosynthesis and therefore interfere with the plants physiological processes.

Whiteflies can be controlled with various insecticides. However, certain strains (or biotypes) of the tobacco whitefly exist that is more harmful and difficult to control. It is important to be aware of the nymph stage of this pest. Control measures should be implemented before the nymphs change into adult flies, which move between plants and transmit viruses.

Good insecticide coverage, especially on the undersides of leaves, is therefore necessary. Always read the insecticide label and use strictly according to label instructions. **By; Diedrich Visser, ARC-Roodeplaat (All photographs copyrighted: Diedrich Visser, ARC-Roodeplaat)**

Fig. 4. Sooty mold growing on tomato

HOW WOULD YOUR PLATE LOOK WITHOUT GREENHOUSES?

Discover how greenhouses have revolutionised seasonal eating, and why growing in greenhouses is not always the answer.

Greenhouses have fundamentally changed what's possible in farming. By controlling lighting, temperature, humidity and irrigation, growers can harvest crops once limited to brief seasonal windows all year round.

Walk into any South African supermarket, and you'll find tomatoes, cucumbers, strawberries, and fresh basil regardless of the season. It's an abundance we've grown accustomed to, largely thanks to innovative greenhouse farming. But have you ever considered that our plates today no longer reflect the natural rhythm of the seasons? Imagine for a moment what your meals might look like if you only ate foods naturally in season.

Picture a chilly July night in Cape Town.

would look sparse - no tomatoes, cucumbers, or fresh basil. Forget about that out-of-season strawberry for dessert. Instead, you'd have a diet shaped strictly by the cold: hardy greens, root vegetables, and perhaps some preserved or expensive imported produce.

Without greenhouses, our diets would be less colourful, less varied and potentially less nutritious.

The Seasonal Old Days

Before modern greenhouses changed everything, we ate according to nature's calendar. Each season offered unique produce, shaping traditional recipes and cultural dishes across South Africa.

In Spring (September to November), we'd enjoy tender lettuce, spinach and rocket alongside early beans and peas. Root vegetables like radishes, beetroot, and young carrots also arrived, complemented by spring onions, leeks, asparagus, and the first fragrant herbs like parsley and mint.

Summer (December to February) burst with ripe tomatoes, sweet and hot peppers, crunchy sweetcorn, and delicious varieties of squash, cucumbers, and eggplants. Fresh berries like strawberries, raspberries and gooseberries brightened dishes, while fragrant basil and coriander added flavour. Sweet melons like watermelon and spanspek, along with early stone fruits like peaches and nectarines, round out the season's bounty.

Autumn (March to May) meant hearty, comforting dishes. Rich pumpkins and butternut, and mature root vegetables like carrots and sweet potatoes filled the markets. Autumn also gave us nutritious broccoli, cabbage and cauliflower, with crisp apples and juicy pears for dessert, and fennel to add some spice.

Winter (June to August) offered a more modest, but hearty and nourishing selection. Kale, beetroot and spinach kept us healthy, while carrots, parsnips and turnips filled delicious stews spiced with parsley, rosemary, thyme and sage. And, of course, citrus fruits like oranges, naartjies, lemons, and grapefruits kept our immune systems in check during the cold months.

The Cost of Your Never-ending Summer Plate

These days, the availability of many fruits, vegetables and herbs is determined more by consumer demand than by weather conditions. Many of us simply can't live without tomatoes in winter and must have our oranges in summer.

The demand for year-round crops,

flourishing global trade and modern smart-tech greenhouses mean that if consumers want it, it generally finds its way to the shelves. Of course, prices of our out-of-season produce go up. After all, greenhouses come with both CAPEX and OPEX costs, even with smart systems like ours that help farmers produce more with less water, energy, and nutrient use. And importing fresh produce demands a costly and carefully planned logistics cold chain.

Other trade-offs come in the form of environmental impact. Take tomatoes, for example. Growing them through winter requires fuel and energy to power the extra heating and lighting. Or if you're importing fruit like oranges out of season, they need to be shipped from the other side of the world, adding a high carbon footprint along the way.

You can see then that greenhouse farming is not a one-size-fits-all solution. In fact, sustainable greenhouse farming is all about smart choices about what to grow, when, and how.

Not everything makes economic and environmental sense to grow in greenhouses. But, with thoughtful planning at the outset of a greenhouse project and close monitoring as it grows, farmers can meet market demand while keeping their environmental impact in check.

When done right, greenhouse farming can be a genuinely sustainable practice for providing year-round nutrients and dealing with food insecurity.

Sustainable Choices Will Always Be in Season

Greenhouses allow us to enjoy favourite vegetables and herbs throughout the year, but this convenience requires thoughtful consideration. As conscious consumers, it's worth appreciating not just what's on our plates, but the environmental cost of how it got there.

At Vegtech Netafim, our mission is clear: we partner with farmers and growers to tackle these challenges head-on, crafting innovative solutions that ensure abundant harvests with minimal environmental impact.

So the next time you enjoy a fresh tomato and basil salad in July, take a moment to consider the remarkable innovation on your plate and the committed, thoughtful people who grew it.

Source: Vegtech Netafirm







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