Fruit and vegetable growers in the state of Queensland, Australia produce about $2 billion of produce each year. An increasing quantity of produce is exported to New Zealand and other countries and about 70 per cent is sold within Australia, including states which do not have the Queensland fruit fly, a pest that is found in many parts of Queensland.

Restrictions on the use of chemicals to control pests in Australia:

- Dimethoate and fenthion are two chemical treatments that have been used to eliminate insect pests. However, after a government review of possible residues in food and of public and occupational health concerns, their use in horticulture has been restricted. This means fresh produce growers need alternative treatments to these chemicals after harvest, for eliminating insects such as fruit fly, before they can sell their products in New Zealand, or other export markets.

Australia, Western Australia and Tasmania. For example, once the Australian government food regulators Food Standards Australia New Zealand (FSANZ) have approved the commodity, these approved commodities can be treated at Steritech’s Brisbane facility and sold in any state in Australia, using the ICA-55 protocol.

Some Australian commodities currently approved for irradiation:

Commodities currently approved for irradiation:

- Tomato
- Capsicum
- Mango
- Rock melon
- Strawberry
- Custard apple
- Mango-steen
- Rambutan

Commodities pending approval for irradiation:

The Queensland Department of Agriculture, Forestry and Fisheries (QDAFF) has submitted an application to FSANZ, in order to seek permission to treat a further 11 specific fruits: apple, apricot, cherry, nectarine, peach, plum, honeydew, rockmelon, strawberry, table grape and zucchini/scallopini (squash) for phytosanitary purposes. The approval for these commodities is expected in January/February 2015.

Some Australian commodities pending approval for irradiation:

- Apples
- Mango
- Capsicum
- Strawberry

Currently, there are also projects which are being finalised for irradiation and these include: blueberries and raspberries, which are being developed for both domestic and export markets.
The chart above shows that we processed around 340 pallets of tomatoes and 50 pallets for export to New Zealand. Compared to our first season of mangoes this was a good result for irradiated in Australia.

This approval process is based on Standard 1.5.3, which governs the use of irradiation on foods for human consumption in Australia and New Zealand. It is health based, not pest-risk or plant health based.

The nutritional profile includes analysis for ash, energy, dietary fibre, fat profile, moisture, sodium, protein, total sugars, sugar profile, Vitamin C (ascorbic acid), and beta-carotene. Overall, our results show that tomato and capsicum can tolerate 1000 Gy irradiation without significant deterioration in nutrient content after treatment and storage. The nutritional components of fresh whole tomatoes and capsicum were not negatively affected by low dose irradiation. Storage time had a larger impact on these components than irradiation itself.

Export of Australian Produce:
Australia has exported mangoes to New Zealand during nine seasons. During our most recent season a total of 1018 metric ton of irradiated mangoes were exported to New Zealand. Except for one season (season 7) when we had a bad harvest, we have experienced a gradual increase of exports.

The chart above shows that we processed around 340 pallets of tomatoes and 50 pallets for export to New Zealand. Compared to our first season of mangoes this was a good result for irradiated in Australia.

Packages are clearly labelled with the word “IRRADIATED”.

The Australian mango and lychee industry have been working to gain market access into the United States for the past 7 years. Recently, the U.S has finally approved a bilateral agreement to export Australian mangoes and lychees, using irradiation as their mandatory phytosanitary treatment for gaining market access. The United States Department of Agriculture (USDA) will be conducting an audit during the first week of December, 2014 in order to certify Steritech’s Queensland facility. Once certified, trade in irradiated Australian mangoes and lychees is scheduled to begin in mid-December, 2014. This facility certification will also make it easier for other Australian fresh produce industries to apply for market access into the U.S.

Inter-State Trade within Australia
Under ICA-55 preliminary trials were carried out sending irradiated Queensland mangoes to Melbourne and Tasmania. During August 2013, tomatoes and capsicums were also sold in the states of Western Australia and South Australia.

Prior to treating any product this season we decided that it was important to ensure that we received and only processed good quality produce. If poor quality produce had entered the market “irradiation would be blamed for the quality and put the future of irradiated produce at risk - “Rubbish in rubbish out”. We must not only think about the invoice. A “Fit for treatment” inspection is performed for each consignment on arrival and given a green light or not.
Irradiation can fit in with the horticulture supply chain and maintain integrity of the ‘cool chain’. Also the supply chain is important. Keeping the produce at its correct temperature during its time at the Steritech facility.

Steritech Pty Ltd – Company Background:
Steritech has been providing contract irradiation service for almost 40 years and has facilities in Melbourne, Sydney and Brisbane (Narangba). The Brisbane plant is capable and licensed to provide phytosanitary treatments for fresh produce. Steritech has developed several innovations in food irradiation. For example, we worked with the experts at Nordion to lower our conveyor so that handling the top layers of produce from the pallets was avoided. This would have caused product damage. In this way, we improved our product utilisation efficiency, without affecting the dose uniformity. As a result, less cobalt is now required. We also added cooling to the irradiation chamber.

Point of Sale:
It is essential that growers and irradiation service providers work with the retailer to ensure a positive message:

MARKET ACCESS USING IRRADIATION:
A Chemical Free Phytosanitary Treatment.

FRESH AUSTRALIAN MANGOES TREATED WITH IRRADIATION

Australians now have an alternative to fruit treated with chemical insecticides like Dimethoate and Methyl Bromide.

These fresh Australian mangoes have been treated with irradiation to eliminate insects and satisfy quarantine requirements to prevent the spread of insect pests, like fruit fly and mango seed weevil.

The process of irradiating these mangoes is safe and chemical-free. It involves treating the mangoes with ionising energy to eliminate insect pests while maintaining the quality of the mangoes.

This treatment option is used around the world including the United States and for all Australian mangoes sold in New Zealand. It is approved by the World Health Organisation and the Australian Government.

For more information, visit the Food Standards Australia New Zealand website (www.foodstandards.gov.au) or the Better Health Channel (www.betterhealth.vic.gov.au)
Australia: An Irradiated Produce Marketing Success Story
- Market Access Using Irradiation -

“In-store” promotion pieces developed to promote irradiated fruits and vegetables in Australia & New Zealand

Point of Sale Education:
It is essential that growers and irradiation service providers work with the retailer to ensure a positive message.

What we have learned:
• Irradiation provides an effective alternative to chemicals.
• Irradiation is well placed to be one of the new “tools-in-the toolbox” that can decrease reliance on post-harvest phyto-sanitary treatments that leave chemical residues on fresh produce.
• Trade in irradiated fresh produce has grown steadily in Australia and New Zealand and appears set to continue to expand.
• Quality control is essential: Produce must be designated “Fit for Treatment” – ensuring that produce received for treatment is high quality. “Rubbish in rubbish out”.

160 South Gippsland Highway
Dandenong Victoria 3175
P.O. Box 4040 Dandenong Sth
Victoria 3164
Telephone: (61) 03 8726 5566
Facsimile: (61) 03 9701 3158