



Australian Government
Department of Agriculture,
Fisheries and Forestry

Irradiation insights

Food irradiation for Australian producers



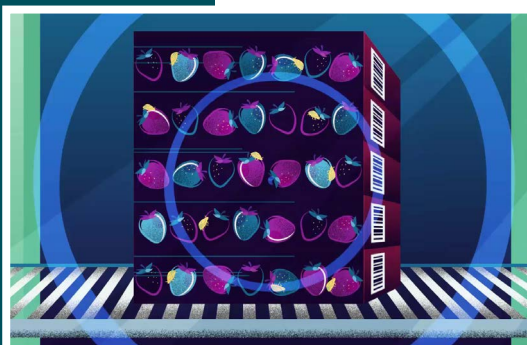
About irradiation

Many countries and Australian jurisdictions have strict biosecurity requirements to manage the risk of pests that damage food crops. This means Australian producers may need to treat plant produce for pests before it is traded and accepted. An effective treatment for pests is irradiation, technically known as phytosanitary irradiation. Irradiation is a wave of energy that passes through the packaging and produce, much like an X-ray or a microwave. The treatment works by making insects sterile, preventing their spread.

Other pest treatments are available, but they traditionally rely on chemicals, gases or different temperatures. Irradiation treatment leaves no residues on produce, does not release any gases, and is performed at room temperature. This makes it good for produce quality, consumers and the environment. The safety, convenience and reliability of irradiation is unlocking more opportunities for Australian growers to access markets both domestically and internationally.

Increase domestic trade

In Australia, irradiation can be used as a biosecurity treatment for many types of plant produce. A single irradiation treatment is effective against a broad range of pests, including fruit fly. Many Australian jurisdictions will only accept fresh produce from other parts of the country where the risk of fruit fly is addressed. Irradiation helps overcome this barrier by treating the whole consignment and providing secure pest-free pathways from treatment to destination.

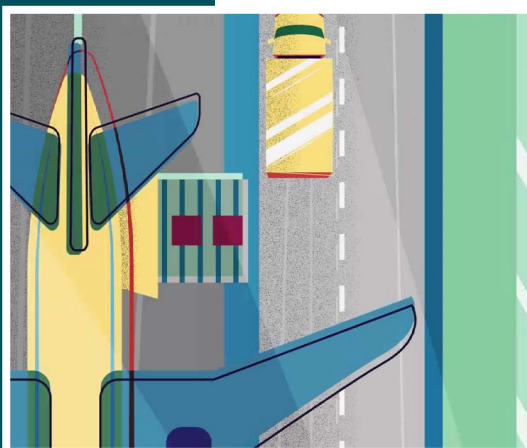


Whole pallet treatment

Unlike other treatments, irradiation treats pests in every part of a consignment, including pests that may be inside produce, packaging and the pallet. Because irradiation passes through every part of the consignment, there is no need to unpack produce. This reduces damage to produce from handling, streamlining supply chains.

Pest-free pathways

The treated pallets are secured in pest-proof wrapping and loaded onto the delivery vehicle in a controlled environment. This reduces the risk of pests entering the consignment after treatment. Australia already has irradiation facilities in the north and south to help producers access treatment close to their growing source, and limit the movement of untreated produce.



Expand export markets

More than 60 countries treat food with irradiation, and many already import irradiated plant produce from Australia.

Irradiation is one of the fastest ways to safely access international markets – produce can be on the market in as little as 72 hours after harvest. This makes it a great treatment option for high-value, delicate or short-lived produce, such as cherries and table grapes.

Different countries have their own biosecurity requirements for how plant produce should be treated before it is imported, so it is important to check each country's requirements first.

International guidelines are in place to make sure everyone uses irradiation correctly. The *Guidelines for the use of irradiation as a phytosanitary measure* are regularly reviewed and updated to ensure that irradiation remains a safe and reliable treatment. The latest guidelines can be downloaded from the International Plant Protection Convention website at ippc.int/en/core-activities/standards-setting/ispms

How it works

Irradiation technology has been researched and refined for decades to ensure that irradiation doses effectively treat pests without affecting the quality and safety of produce. There are 3 types of irradiation commonly used for biosecurity treatments: Gamma, X-ray and e-Beam. Produce is simply packaged at the farm and sent to an irradiation facility.

1

Facilities have separate entry and exit points to keep treated produce safe from any pests arriving in an untreated delivery.



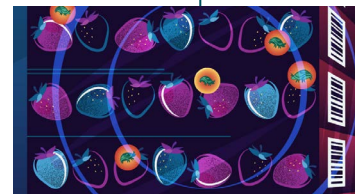
2

Packages are registered to record their treatment details and track them throughout the process.



3

A wave of energy passes through the pallet, treating any pests that may be on or inside the produce and its packaging. The amount of irradiation that is given is based on the type and amount of produce, and the pest being treated. It also considers any other treatments that have been done or will be done, such as more irradiation at the destination.



4

When all the energy has left the package, the treatment is complete. The package is wrapped in a pest-proof barrier to reduce the risk of untreated pests entering the package after treatment.



5

A verification certificate is included to tell biosecurity inspectors in the importing country that the produce has been treated in line with their requirements.



6

The consignment is loaded for distribution in a secure environment to avoid any pests entering from the outside environment.



How to start using irradiation

Australian plant producers can easily add irradiation into produce supply chains by using existing facilities. No extra equipment or processes are needed at the growing source – produce is simply packaged and sent to the irradiation facility for treatment.

For more information on the benefits of using irradiation for plant produce – including videos and information sheets – see the Australian Government’s plant protection website at agriculture.gov.au/plant-protection

For enquiries about Australia’s irradiation process and biosecurity requirements, email the Australian Government at MCS@agriculture.gov.au

