



Australian Government
Department of Agriculture,
Fisheries and Forestry

Irradiation insights

Food irradiation for safe trade



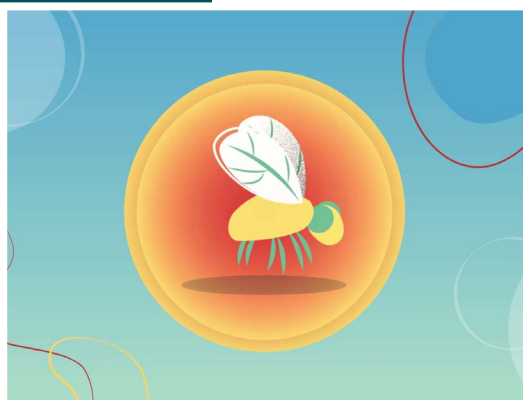
About irradiation

To import and export plant produce across different countries and regions, the produce may need to be treated for pests. Different pests require different solutions. Treatment options include using chemicals, gases or different temperatures. A convenient alternative treatment is irradiation, technically known as phytosanitary irradiation. Irradiation is effective against a broad range of pests, including fruit fly, with a single treatment. The treatment works by making insects sterile, preventing their spread.

Irradiation treatment is performed at offsite facilities after produce has been harvested. Irradiation is a wave of energy that passes through the packaging and produce, much like an X-ray or a microwave, without affecting the quality of the produce. The safety, convenience and reliability of irradiation is opening more opportunities to safely export plant produce across South-East Asia, India, Australia and beyond.

Why use irradiation?

The irradiation process is chemical-free, making it a safe option for produce, people and the environment. For plant producers, importers and exporters, irradiation brings a range of benefits, including meeting biosecurity requirements, increasing trade opportunities, and simplifying pest treatments for streamlined supply chains.



Meeting biosecurity requirements

Irradiation prevents the spread of unwanted pests from produce to growing areas, as a single treatment is effective against a broad range of pests, including fruit fly. Fruit fly is a major biosecurity threat that causes serious damage to crops. Irradiation offers a fast and reliable treatment, ensuring that produce complies with the import requirements of different countries.

Increasing trade opportunities

Irradiation opens new opportunities to trade to countries with strict biosecurity controls, such as Australia. Irradiation is approved in Australia and used in more than 60 countries, helping producers across the globe access international markets. Each country has their own requirements for how plant produce should be treated before it is imported – irradiation treatments are easily adjusted to meet the needs of the importing country.

The process quickly treats whole pallets without unpacking, reducing extra handling that could damage produce. This means that fresh, quality produce can be on the market in as little as 72 hours after harvest, helping to meet the needs of retailers and consumers. Irradiation is a preferred treatment option for many growers of short-lived and delicate produce, including table grapes, mangoes, cherries and berries.

Simplifying supply chains for safe trade

Irradiation treatments are performed at specialised, accredited facilities, and no special equipment is needed at the farm. This makes it easy to include irradiation in produce supply chains – produce is simply packaged and sent to the irradiation facility for treatment. Details are recorded and the process is carefully tracked to make sure the treatment meets import requirements. Irradiation services are highly regulated, and international guidelines are in place to make sure everyone uses irradiation correctly.



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.



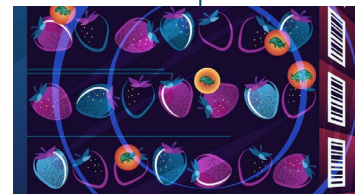
2

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

Check with your country's national plant protection organisation to find out what types of produce you can treat with irradiation and what types of irradiated produce you can import. In Australia, irradiated produce is accepted from many countries, and Australian producers can use irradiation on several types of plant produce, in line with the import requirements of other countries.

For more information about irradiation treatments for plant produce – including videos and information sheets on the benefits of irradiation for trade, biosecurity and supply chains – see the Australian Government's plant protection website at agriculture.gov.au/plant-protection

