

# Keep it Clean for Field Vegetables

## Plant sources of pests and diseases

Virginia Brunton & Jeremy Badgery-Parker, Ourimbah

### Plant sources

The first step in reducing the risk of pests (e.g. insects, mites, weeds, nematodes diseases) is to be aware of plant sources and non-plant sources in or around the crop from which they can come.

All plants and plant material around the crops can be a source of pests.

**Weeds** are one of the most significant sources of insect and mite pests and diseases. There is a very high risk that pests will enter your crop from weeds in and around your crop. Weeds provide shelter and food for insect and mite pests and act as a host for diseases.

*“Crop areas and farm surrounds are kept weed free”*

There are many species of plants which harbour pests around the farm. In general, any plants of the same family as the crops you are growing should be considered a source of pests (for example blackberry nightshade is the same family as tomato and capsicum). Flowering plants generally harbour a number of pests, especially thrips.

Many crop viruses have alternative weed hosts and that in combination with a suitable vector may be a source of infection. Weeds can act as a bridge between separated crop plantings.

**Other crops** on your farm and on neighbouring properties need to be considered a risk to your crop. This is especially important if nearby crops are in the same plant family as the crop you are growing because they may host pests that will affect your crop. It is helpful to know what other crops also host your key insect pests, diseases and nematodes. For example, Tomato spotted wilt virus and western flower thrips and Sclerotinia (a soil borne fungus) damage a wide range of crops.

### Breaks between crops

Cereals tend to host relatively few pests of vegetables and are a good break-crop or useful to plant in non-cropping areas. In the same way many Australian native plants are useful for planting in non-cropping areas and reduce the need for weed



*Discarded leaves and fruit harbour insect pests and diseases*

management.

**Crop debris** can harbour a lot of pests, giving them a safe place to wait around before moving into another crop. Crop debris includes old plants that have been removed from the crop as well as prunings and other plant material taken from a crop during the growing period. Old fruit left in the crop

can provide a safe haven for pests until a new crop is established nearby.

**Older crops**, especially those near new crops can give refuge to a number of pests and diseases too. Any plants in or near your crop are some of the most significant sources of pests and can account for the majority of pests getting into a new crop.

*"Cultivate old crops into the soil immediately after harvest or being abandoned"*

**Post harvest crop residue or abandoned crops** are excellent breeding grounds for pests. It is important to cultivate-in crop residue or abandoned crops as soon after they are harvested or abandoned as possible. If they are heavily infested with an insect pest using an appropriate insecticide before cultivating will reduce the likelihood of the pests moving to other plantings or crops.

**Personal or "pet" plants** such as an occasional herb at the end of a row are equivalent to weeds. These plants can act as a source of pests and should never be grown within a commercial crop.

Each production area needs to be run as a 'single crop'. This means that all plants in an area need to be of the same species and same age.

**Seedlings** are a significant source of insect pests and diseases. Seedlings have come from an area outside of your production crop, either from your own propagation area or from a nursery. This means that they are a potential source of pests getting into your crop.

*"All seedlings are quarantined, and checked that they are free from pests and diseases before planting them out"*

Acknowledgement: Information in this factsheets has been prepared from Keep It Clean – Reducing costs and losses in the management of pests and diseases in the greenhouse. Badgery-Parker, J and T Burfield 2009, with input and advice from Sandra McDougall and Alison Anderson.

© State of New South Wales through Department of Trade and Investment, Regional Infrastructure and Services 2010. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Trade and Investment, Regional Infrastructure and Services as the owner.

ISSN 1832-6668

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2012). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent adviser.

Published by the Department of Primary Industries, a part of the Department of Trade and Investment, Regional Infrastructure and Services.

Trim reference INT 12/24378



Horticulture Australia

Program

Production of this factsheet and translations was partially funded by the HAL project: *Addressing Product Quality and Safety with LOTE growers of the Vegetable Industry* an initiative of the Vegetable Industry Development