# Integrated pest management with Dr Elizabeth Lamb

## **Talking** points

#### Knowledge

- 1. What is integrated pest management (IPM)?
- 2. What are some unique considerations for IPM for ornamental plants?

#### Comprehension

- 3. Why does adding beneficial species for augmentative biological control often have to be repeated every season?
- 4. How does Betsy's work benefit from working with many different people? Give some examples from the article.

#### Application

- 5. Growers use the GreenhouseScout app to log 'occurrence of pests, control measures taken, and how effective these were at reducing pests'. If you were a grower, what would you then do with this information? Consider priorities for the environment, people and your profits.
- 6. For augmentative biological control, what are some of the likely logistical challenges involved in rearing, shipping and distributing beneficial species?

#### Analysis

- 7. Betsy says that integrating biological control with chemical control "makes things even more complicated". What do you think she means by this? Consider likely consequences of mixing these two control methods.
- 8. Why do you think it is challenging to determine the impact of beneficial insects on pests when using conservation biological control?

#### Synthesis

9. Measuring the environmental impacts of any pest control method can be challenging. As well as the impacts of application (e.g., pesticides killing pollinators), there are also impacts during production, transport and disposal. Compare two methods of pest control explored in the article. What are the likely environmental impacts for each across the entire methods' lifecycles?

#### **Evaluation**

10. Betsy says that developing resistant cultivars can take many years, given the time taken to repeatedly cross-breed cultivars until the desired result is reached. Genetic modification can provide a 'shortcut' to this process by only adding the desired trait into a cultivar. What do you think are some of the social, environmental and economic reasons why the growers that Betsy works with might not use genetically modified cultivars? To what extent do you think this technology should be embraced or rejected, and why?

### Activity

- Cultural (changing growing techniques, sanitation) Physical/mechanical (using equipment to prevent/remove pests)

Aim to make your game fun, visually appealing and educational. Once it What are the broad lessons and conclusions that your game offers?

### More resources

- You can get a taste of what IPM involves at the regional and national scales at the website for Regional IPM Centers. The website gives an overview of IPM, as well as access to publications and databases to learn about pests and their control: www.ipmcenters.org
- Cornell's College of Agriculture and Life Sciences has outreach and education materials for IPM, including a pest directory: cals.cornell.edu/ new-york-state-integrated-pest-management/outreach-education
- This video from the UN's Food and Agriculture Organisation provides an overview of how IPM can be carried out in a coordinated manner over large areas: o www.youtube.com/watch?v=p8kzxgYeAqQ

