

A problem with insects

Insects make up the biggest class of the world's animals. It seems that there is an insect for every plant and therefore every crop, and often every part of the plant. Insects that damage crops are mostly controlled by chemical methods. However, GM crop plants have been developed that produce their own natural insecticides.

At the end of this activity you will know the:

- extent of insect damage to Australian cotton crops
- most common ways of controlling insects in Australian cotton crops
- comparative costs of these methods.

You will need:

- access to the internet
- access to *A problem with insects – the cotton story* from *Biotechnology Online*

What to do:

1. Find out the following:
 - Where cotton is grown in Australia. What types of cotton are grown? Has this changed over time?
 - The mass of cotton plants that can grow in one hectare in a particular region of Australia
 - What kinds of pests grow in cotton crops – are they the same everywhere?
 - The mass of insects that can grow in one hectare of a cotton crop in a particular region of Australia
 - The value of the cotton crop each year
 - The estimated loss in production due to insect pests
 - The most common methods that farmers use to control insect pests in cotton crops
 - The costs to a farmer each year of using each of these methods
 - Which method farmers prefer and why
 - Some of the problems and benefits with current control methods
 - How much water is used in growing cotton in various regions of Australia. How does this compare with other Australian agricultural industries such as dairy and fruit growing?

Biotechnology Online School Resource

What to do with your information:

1. Produce diagrams to show:
 - where cotton is grown in Australia and the pests that grow with them
 - the mass of cotton plants that can be grown in one hectare
 - the mass of insects that can live off that mass of cotton plants.
2. Produce a diagram to show:
 - the value of cotton crops in Australia each year
 - the loss in production due to insects
 - the costs per annum of each method of insect control in cotton.
3. Produce a table showing the methods of insect control used in cotton and the effect of each.
4. Indicate if there are other issues in growing cotton and cotton control, such as health and water usage. How do these growers live within their communities?
5. List the sources that you referred to.

Useful resources

CSIRO - Cotton research, management and production:
<http://www.csiro.au/org/ps6h.html>

CSIRO - Cotton breeding: <http://www.csiro.au/science/ps8b.html>

Cotton Australia: www.cottonaustralia.com.au/

Monsanto: <http://www.monsanto.com>