



### Box 17.8 Case study: Potato cyst nematode

Nematodes (*Globodera rostochiensis* and *G. pallida*) are microscopic worms that invade the roots of potato plants and inject a substance that causes the plant to create a unique cell from which the nematode feeds via a specialised tube, stunting root growth and depriving the potato plant of essential nutrients. This leads to lower quality, smaller crops.

Nematodes cost farmers in the UK £65 million a year in pesticides and crop losses. The cost worldwide is more like £60 billion.

Nematodes are currently treated with toxic chemicals such as astelone, which do not enter the food chain, but are expensive to apply and can make soil sterile, killing other living organisms within it.

A team from the Leeds University Centre for Plant Science has discovered that a protein that occurs naturally in rice and maize can be added to the roots of potato plants so that when the worms eat it their digestion is affected to the extent they can't breed.<sup>61</sup>