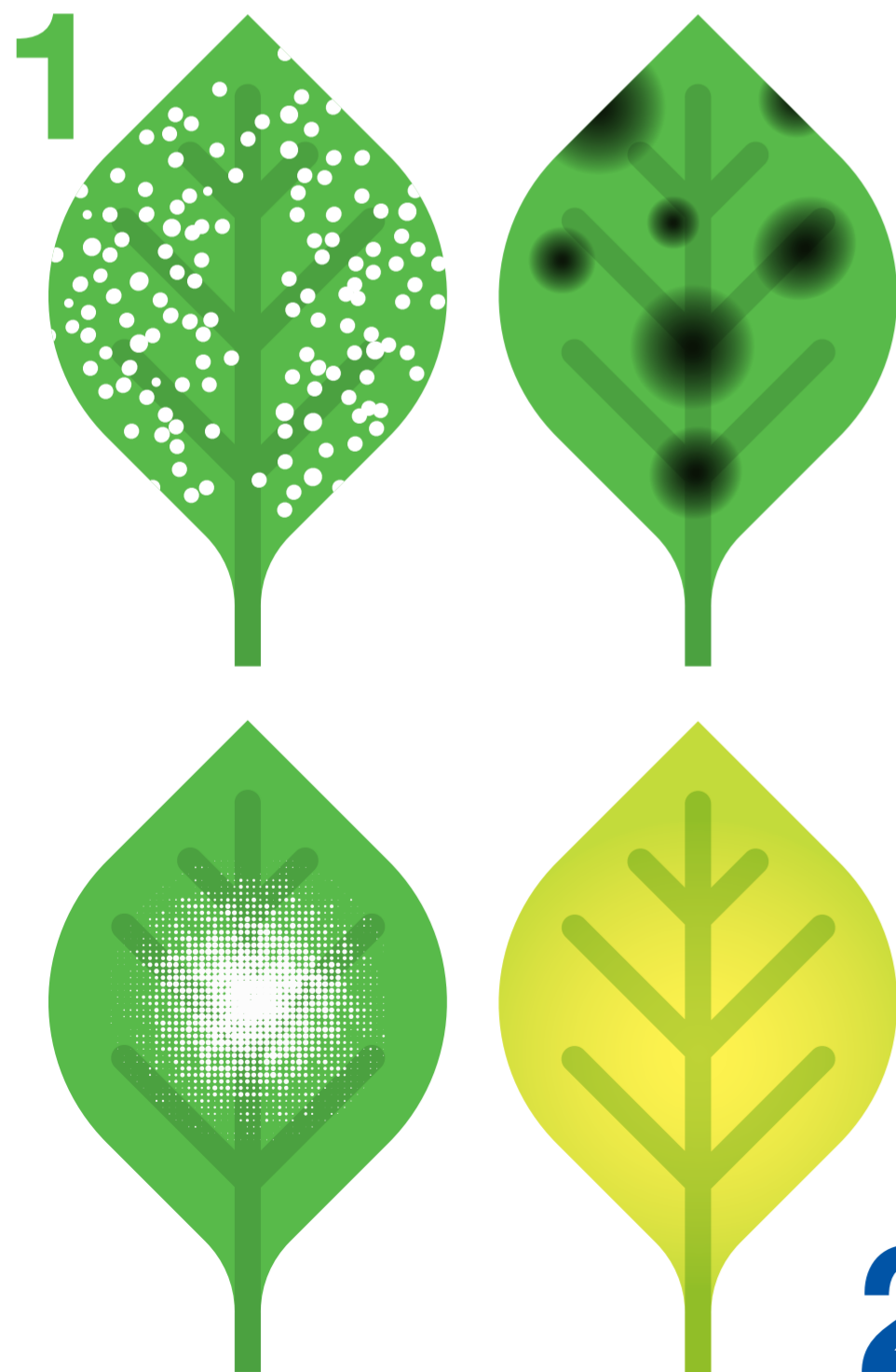


PlantPower Plant Pathogens Identification

When there's an outbreak of plant disease it's important to find out the cause. Identifying the pathogen causing a disease helps us to stop it spreading. A plant doctor (plant pathologist) uses diagnostic tests in the lab and in the field to help identify plant pathogens.

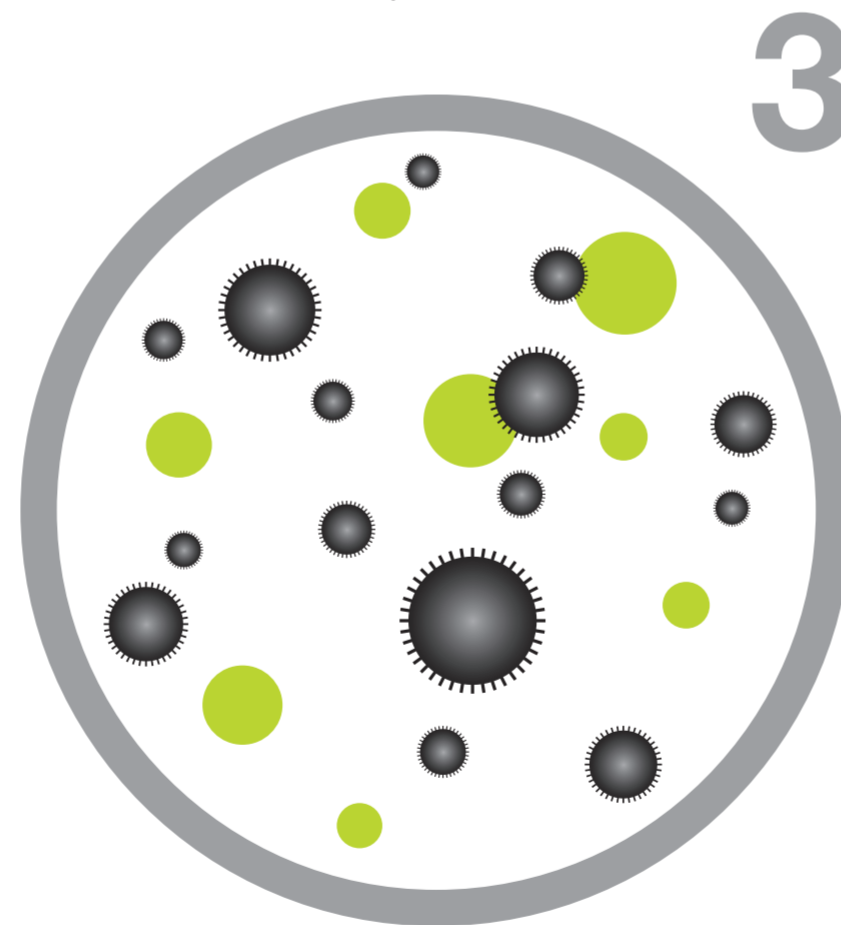
1. Recognising symptoms

The symptoms of disease in infected plants can help us diagnose which pathogen is responsible. However different pathogens can cause similar symptoms, so we usually do further diagnostic tests to confirm the pathogen.



3. Cell culture

Samples of bacteria and fungi from infected plants can be grown in cell culture. Plant doctors use the appearance of the culture to help diagnose which pathogens are present.



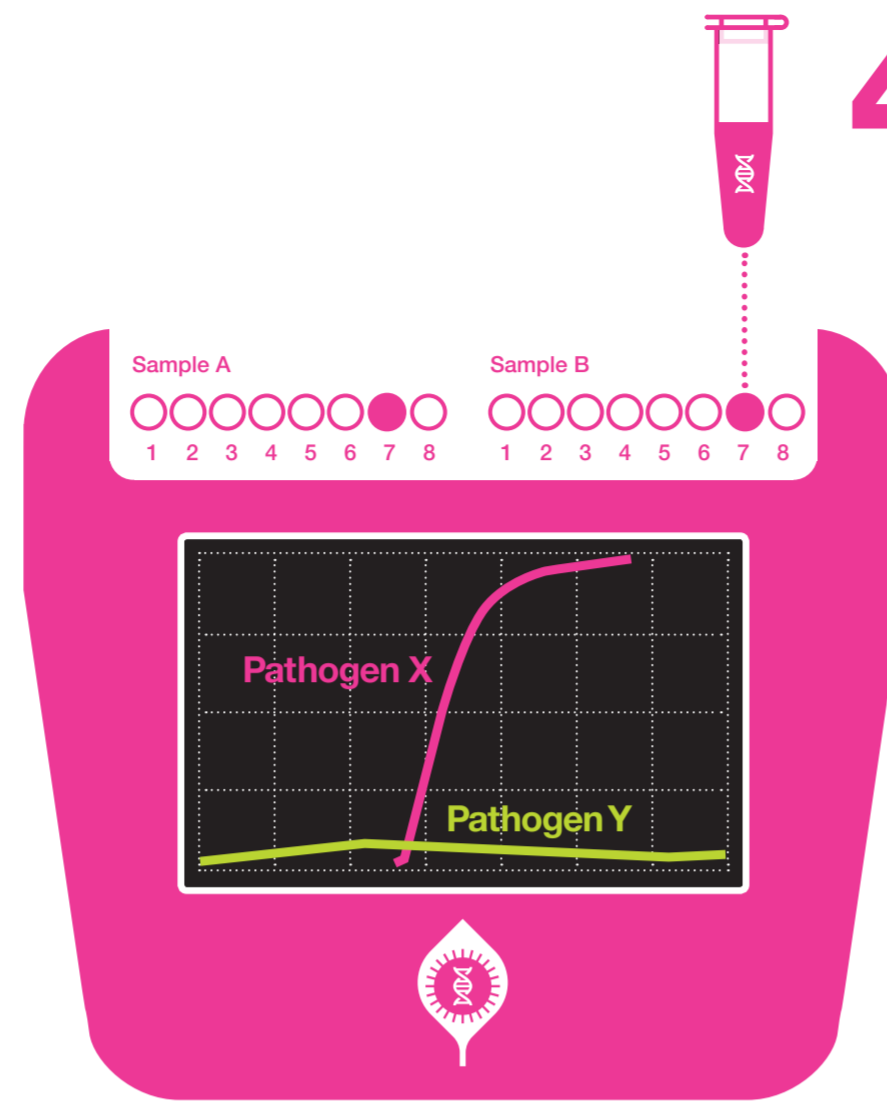
2. Antibody tests

Plant doctors use test kits containing antibodies that recognise a particular pathogen. A sample from an infected plant is put on a test strip – if the line on the strip changes colour, the pathogen is present.

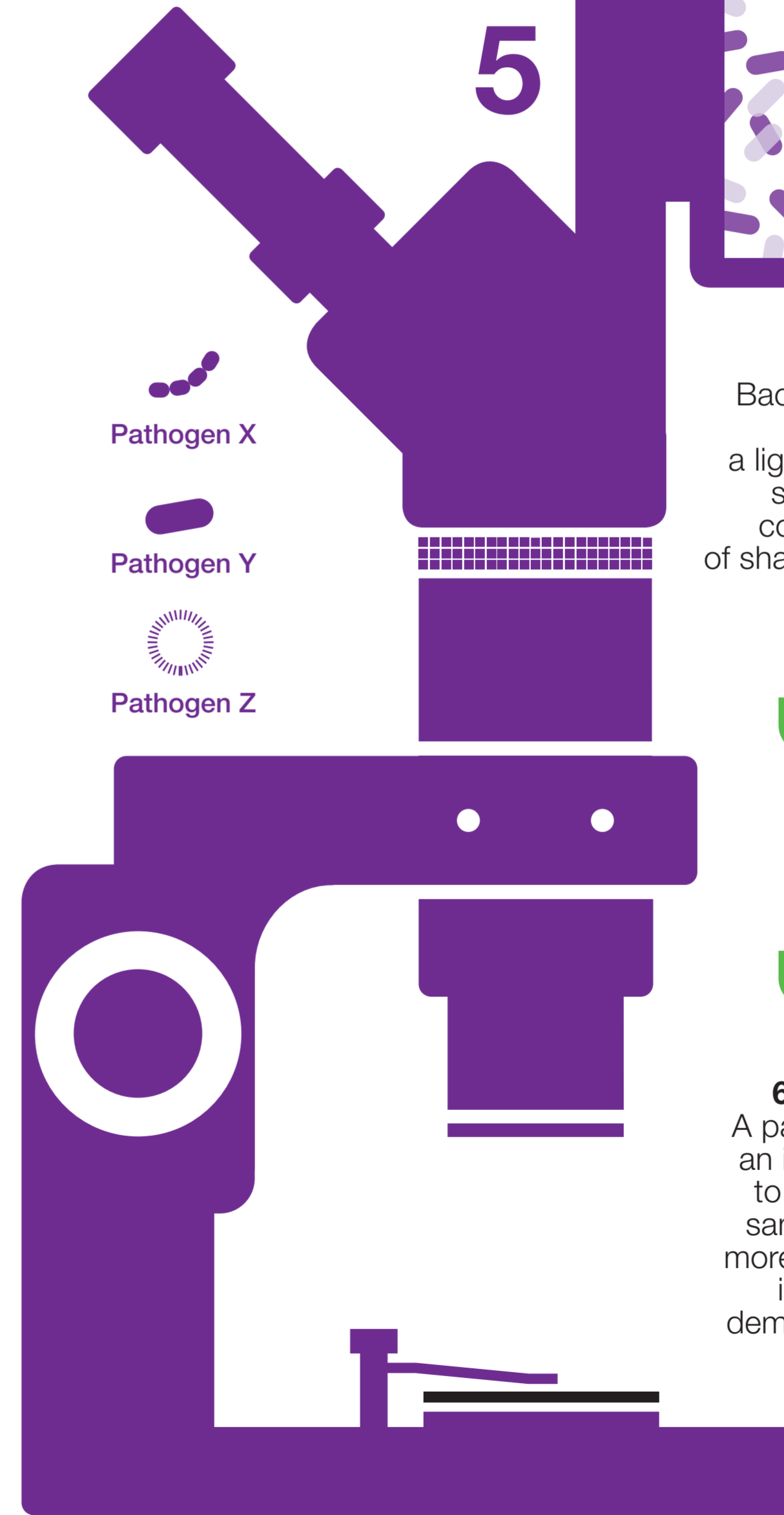
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4. Genome analysis

Gene probes can be used to identify pathogens, including viruses, in a sample by detecting their genetic markers. Sequencing the whole genome of a pathogen also helps identify it, and can reveal if it has antimicrobial resistance genes.

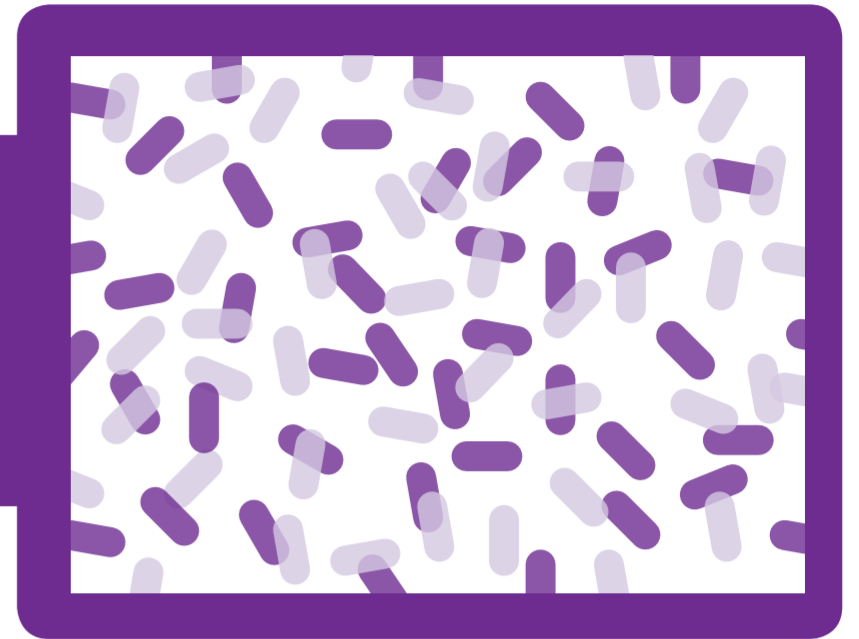


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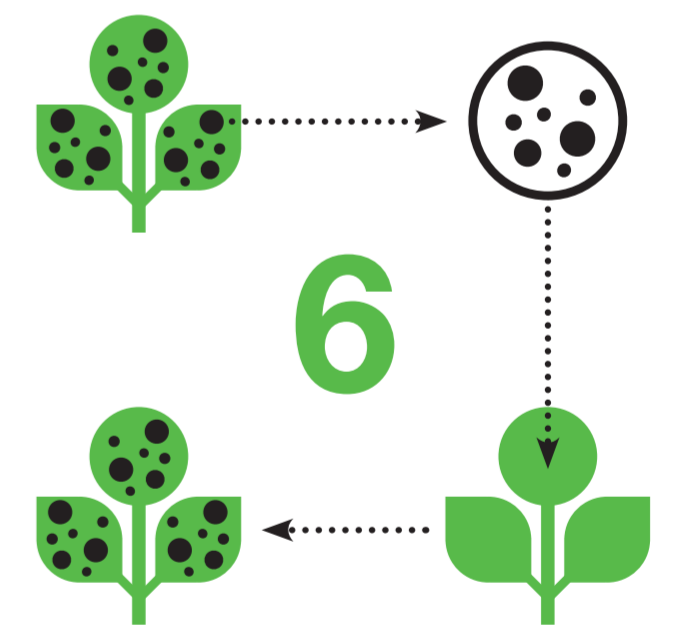


5. Microscopy

Bacteria and fungi from infected plants can be seen using a light microscope. Plant doctors stain micro-organisms with coloured dyes and use a key of shapes and sizes to identify them.



6



6. Isolation & reinfection

A pathogen can be isolated from an infected plant and then used to infect a healthy plant. If the same symptoms occur, we are more confident that this pathogen is the cause. This is called demonstrating Koch's postulates.