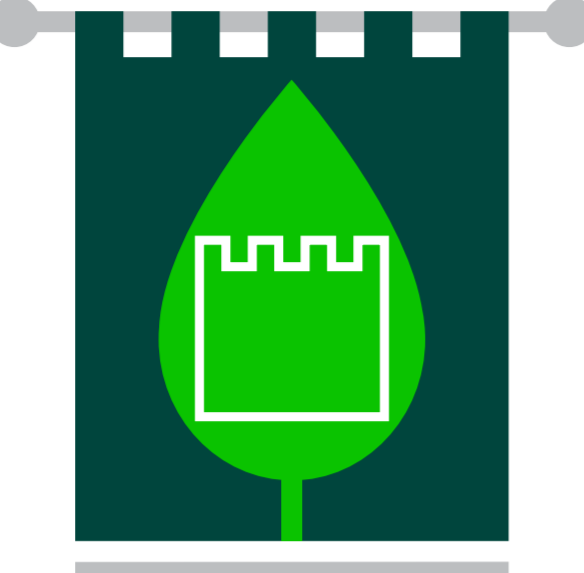


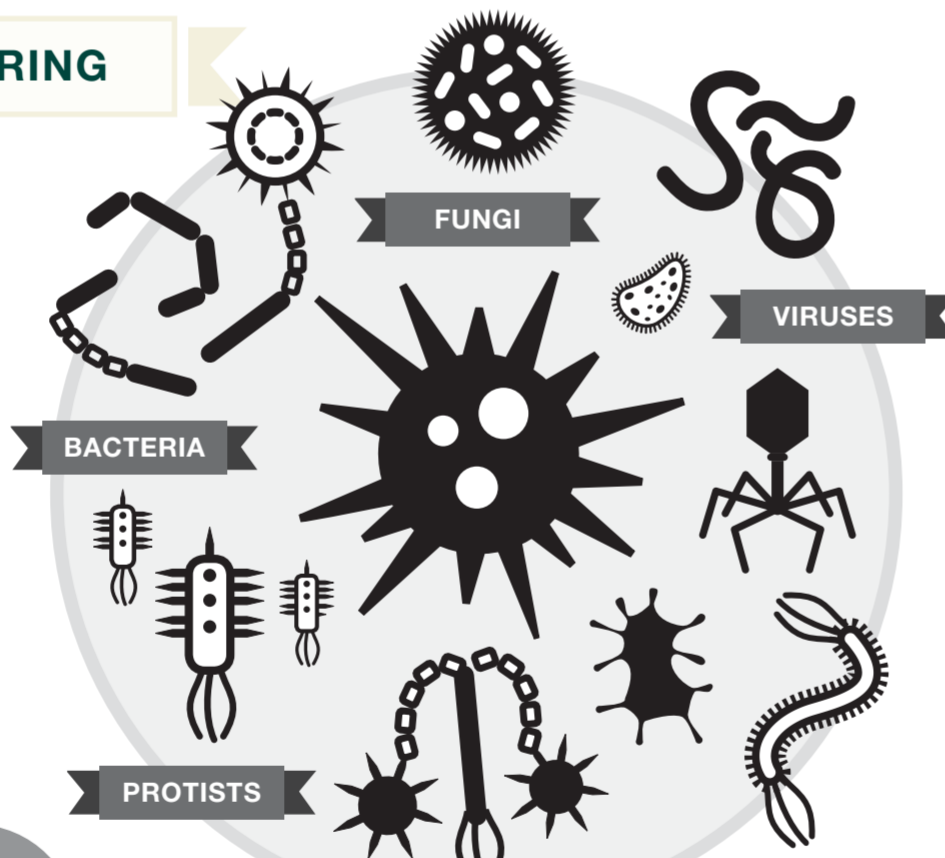
PlantPower



THE NEVER-ENDING

BATTLE FOR FORTRESS PLANT

FEATURING



V

PLANT DEFENCES

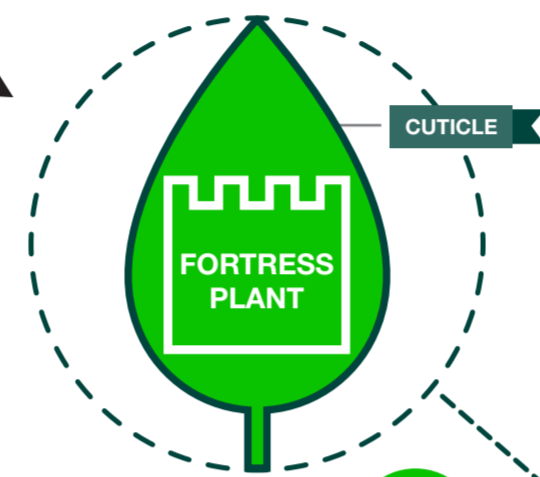
THE INVADING PATHOGENS

For plants, staying healthy is a never-ending battle against pathogen attack.
 Pathogen infection causes disease in plants.
 But a plant is like a fortress – it has ways of defending itself and fighting back!

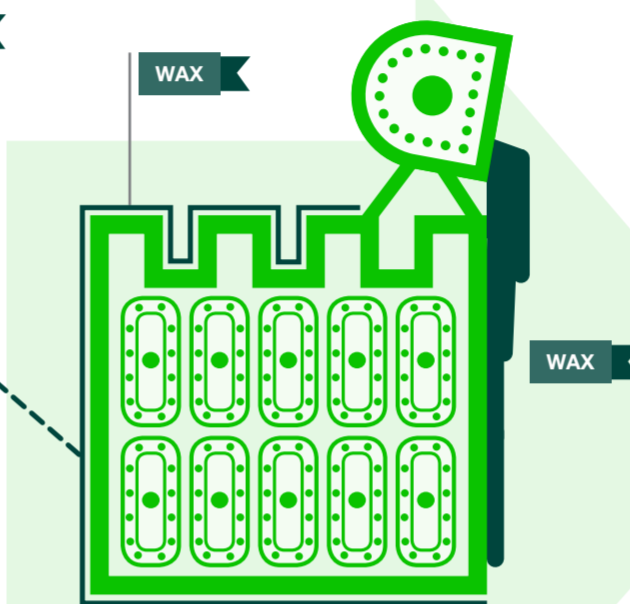
For more teaching resources see www.saps.org.uk/plantdisease
 Find out more at www.bspp.org.uk/outreach

FORTIFICATION & PROTECTION

'Fortress' plant has physical defences. The plant's first line of defence includes the cuticle – a waxy coating on its leaves which keeps pathogens out. Inside the plant, cell walls make it tough for pathogens to get inside cells.



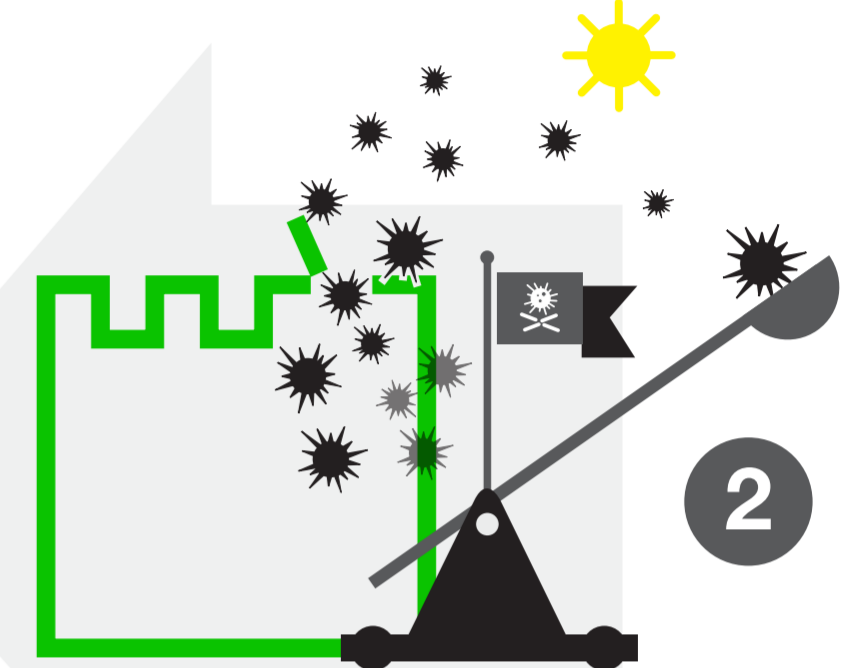
1



THE BATTLE OUTSIDE

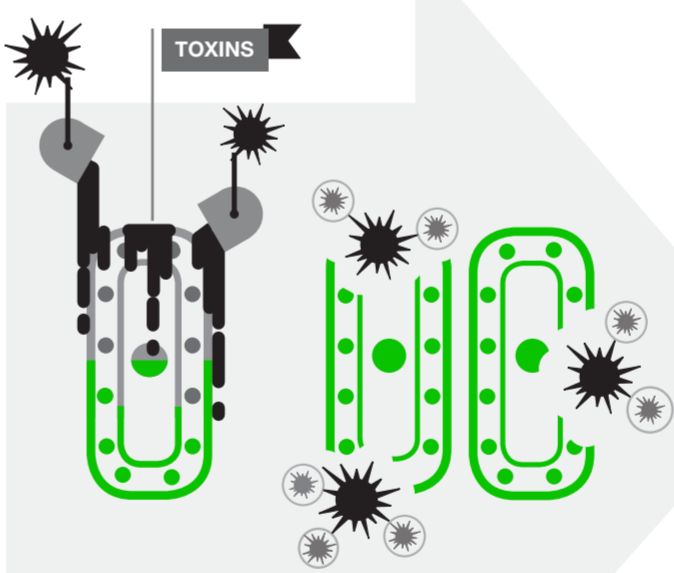
ATTACK & INVASION

Pathogens are carried to 'fortress' plant by wind, water, infected insects and plant material. Some invade through external openings such as wounds and open stomata. Others puncture or dissolve their way in.



2

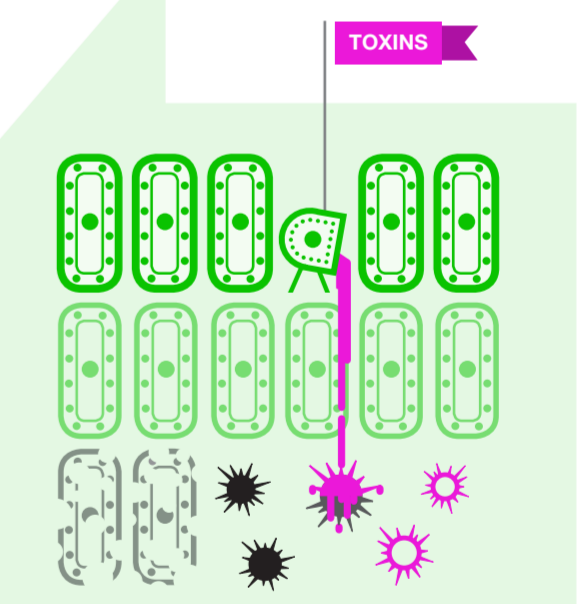
3



THE BATTLE INSIDE

INFECTION & CONSOLIDATION

Once inside 'fortress' plant, pathogens steal food from plant cells and release damaging toxic substances. Viruses use the plant cells to copy their genetic material to reproduce.



4

RESPONSE & FIGHT BACK

'Fortress' plant uses chemical defences to de-activate and destroy pathogens. Plant cells make anti-microbial substances and cell walls are strengthened. Healthy cells around the infection commit cell suicide to stop the pathogen spreading.