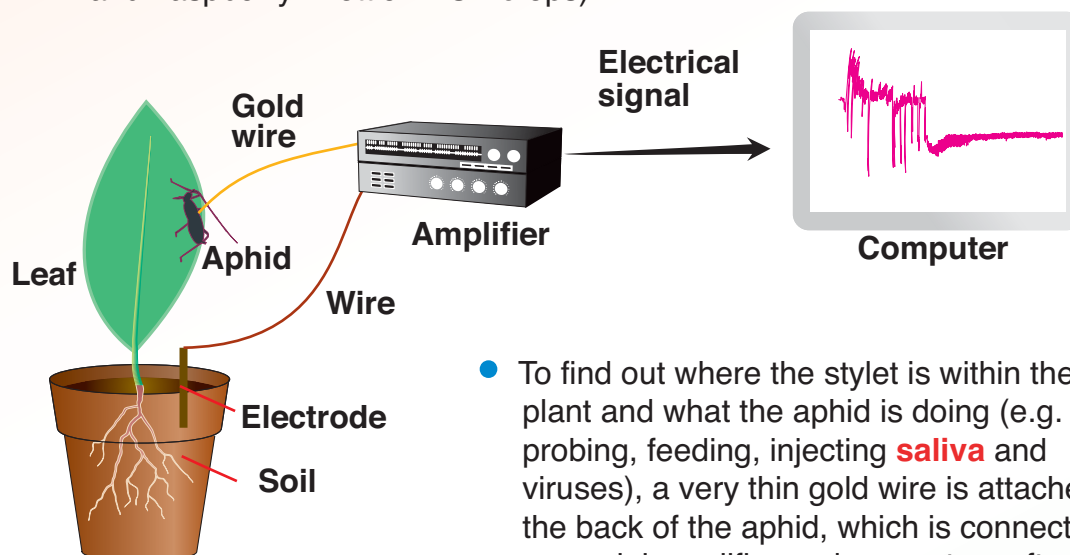


Super-charged greenflies:

Breaking the code for aphid feeding behaviour on different plants.

- Aphids ('greenflies' causing damage to garden and crop plants) feed by sucking plant sap through a hollow tube called a **stylet**. Aphids probe down between and through plant cells in the leaf and stem until they reach the source of their 'liquid lunch' for sap, the **phloem**.
- SCRI scientists are studying aphid feeding inside leaves, to find out why aphids like some plants and not others, and what affects their ability to spread **plant viruses** (causing serious plant diseases like 'potato leaf roll' and 'raspberry mottle' in UK crops).



- To find out where the stylet is within the plant and what the aphid is doing (e.g. test probing, feeding, injecting **saliva** and viruses), a very thin gold wire is attached to the back of the aphid, which is connected to a special amplifier and computer software.

Different types of electrical signals ('**waveforms**') are measured, which have characteristic patterns. This system for breaking the 'feeding code' for aphids is called the '**Electrical Penetration Graph**' system.

- SCRI scientists can automatically monitor 4 aphids at the same time, to see how different **aphid species** or **genotypes** (genetically different forms of the same species) differ in their ability to feed and transmit plant viruses. We work closely with virologists and plant breeders at SCRI and around the world.

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