A plant in the field is never lonely.

Who is in the neighbourhood?

Around a crop plant in the field are pollinators, microbes, worms, pathogens, and neighbouring crop plants.

Plants resist pathogens, obviously

Plants switch up their basal immunity on infection to fight the pathogen.

Plants eavesdrop

The infected plant alerts the neighbours via compounds in the air by pollinators by fungal network via root contacts.

Through soil, not air

Gene regulation and beyond

Disrupting exchanges via soil affects pathogen resistance in a crop mixture.

Gene are regulated by neighbouring plants, before and after an infection, but this does not explain resistance fully.

Genetic identity of neighbours matters

In a crop mixture, resistance to a pathogen changes before and after infection.

neighbour modulated susceptibility

Healthy plants in the neighbourhood talk to each other, bringing all plants to a state of primed defense.

Based on
Plant neighbour-modulated susceptibility to pathogens in intraspecific mixtures

Pellissier et al. JEB, 2021
Artist: Dr. Isha Jain

There is more to learn about how plants trade off between competition and shared defense mechanisms.

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