



**SoilWealth | ICP**  
nurturing crops · protecting crops



# 5<sup>th</sup> Soilborne Disease Masterclass

## Chemical Control Aspects

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# Positive aspects of chemical control

Effective Disease Suppression if used well:

- prevents or mitigates disease outbreaks and spread thus stops or reduces crop losses.
- safeguards crop health which contributes to security of supply to markets.



Disease free crops utilise water and nutrients better than diseased crops.



# Positive aspects [cont.]

Used according to label instructions and best management practices, chemical control can be part of a sustainable, integrated pest management strategy.

- Integration with cultural, biological, and mechanical methods maximises efficacy while minimising environmental impacts and pesticide resistance development.
- Providing short-term protection against soil-borne pathogens helps reducing disease carryover between crops and seasons.



# Negative Aspects of Chemical Control

Sole reliance on chemical control can disrupt natural processes and interactions, leading to imbalances in pest populations, increased pest outbreaks, and secondary pest outbreaks. This can create a vicious cycle of pesticide dependency and environmental degradation. Issues are:

- **Non-Target Effects:** Chemicals may harm or disrupt non-target organisms, including beneficial soil organisms, which can have long-term consequences for soil health.
- **Pesticide Resistance:** Over-reliance and continued exposure to the same chemical active ingredients can select for resistant strains, making the pesticides ineffective over time.
- **Residual Effects:** Some chemical active ingredients can persist in soils and the environment for long periods and accumulate; they then pose risks to non-target organisms, humans and animals.



## Negative Aspects of Chemical Control [cont.]

- Improper handling, application, or exposure to chemicals can affect human health, including acute poisoning, chronic health effects.
- Pesticide drift can affect adjacent crops, wildlife habitats, and residential areas, posing risks to human health and the environment.
- Regulators increasingly review, restrict or ban the use of certain active ingredients. The use of chemical pesticides is regulated. Failure to comply with regulations can have legal consequences.
- Sole reliance on chemical control methods undermines the principles of ICP, which requires the use of multiple tactics, including cultural, biological, and mechanical controls, in a coordinated and sustainable manner.

