The role of crop protection products in soil health

CropLife Australia

The targeted and responsible use of pesticides as part of an integrated pest management strategy plays an important role in promoting soil health. These products, which include herbicides, fungicides, and insecticides, are primarily designed to control pests and weeds, however their contribution to soil health goes much deeper.

Productivity

The role of pesticides in **enabling no-till farming and increasing soil health** is crucial to the ability of Australian farmers to continue to adapt to climate change. ABARES has found that since 2007-08, the yield of wheat crops grown in dry conditions has increased by 14% - **double the rate of growth under normal conditions** for the same period of time[1].

Carbon sequestration

Leaving soils undisturbed and planting crops with minimal tillage means that **soil organic matter builds** up slowly and converts into stable soil carbon. This soil carbon is lost when soil is disturbed by tillage.

Soil structure

The use of pesticides enables conservation agriculture practices, such as no-till. **Eliminating destructive tillage allows the soil to form healthy aggregates and structure**. Good soil structure resists erosion, fosters beneficial microorganisms and insects, and preserves root channels which improve water infiltration.

Drought resilience

ABARES has identified that over the period 1979-80 to 2014-15 the negative impact of a one in 20-year **drought reduced by over a third**, as a result of modern farming practices, zero tillage, and integrated pest management.

The route to healthy soils are healthy crops

Safeguarding crops to **reach their full potential** allows soil to build both organic matter and microbial diversity, contributing to overall ecosystem health.

1 Neal Hughes (2021) Analysis of climate change impacts and adaptation on Australian farms, ABARES Insights, Canberra.