Fungi on the soil surface breaking down banana trash in a North Queensland banana plantation where fungicide inputs have been significantly reduced.

Fungi help soil health

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MENTION fungi in an agricultural context and varieties which come to mind are most often the plant pathogens.

Many crops, particularly North Queensland bananas, have regular control programs for this group of organisms.

Producers are generally much less aware of the beneficial soil inhabitants of this same group.

In all agriculture there is some crop residue that builds up on the soil surface in an orchard.

From a resource management angle the question that comes to mind is "what is the best possible use for this residue?'

In a system functioning to its potential this residue is broken down relatively quickly. It is the role of the fungi to break down the fibrous material such as that found in a banana plantation.

Once in the soil the carbohydrates are converted to fulvic acids, then humic acids and finally become stable humus.

Fulvic and humic acids perform key functions in the soil. They assist with nutrient availability and break down the clay to release silicon and potassium.

The desirable end product, humus, creates soil structure and increases the soil's nutrient and water holding capacity. It is the best possible end product of crop residue.

If we see this trash building up on the soil surface we are missing out on the potential benefits of humus.

Fungi are the most vulnerable of the soil microorganisms.

The control programs for plant pathogens can reduce the activity of these fungi on the surface of the soil.

By applying fungicides to assist in crop production we are reducing the effectiveness of our most valuable resource, the soil.

●Shane will be a biology speaker at the Field Day in Tully on August 12, as part of the Australian Banana Industry Congress.