

Symphyla

(*Hanseniella* spp.)

Distribution

Symphylans are present in all districts and on most soil types. Damage often occurs on clay-loam soils in the Herbert valley, and on coarse-grained granitic loams in the Mossman and Tully regions.

Damage

Symphylan damage is primarily due to eating out and killing the apical bud at root-tips. Then, as secondary buds along the length of the root begin to side shoot, symphylan bore in and eat them, leaving cylindrical pits (0.5-1.0 mm diameter) through the white outer layer into the inner core of the root. The root mass becomes clumped, roots branching again and again; an effect named 'coralloid branching'.

Symphylan symptoms are most common in young plant cane. Damage results in slow growth, and weak tillering and stooling-out, which can directly or indirectly restrict yield. Plants develop a short, stunted and side-shot root mass.

With their restricted root-ball, damaged plants wilt easily in dry weather. Symptoms are usually patchy. Sometimes, root-buds on setts are eaten out and/or sett-roots are stunted. In severe cases, all root-buds on the lower nodes of shoots are destroyed.

Ratoons can also be damaged, typically with few, short stalks and a restricted root-ball. In most cases, however, other factors may also be limiting ratooning vigour.

Description

Adult symphylans are elongate, centipede-like arthropods, white or cream in colour, 5-8 mm long, with long slender antennae. Young stages have 6-10 pairs of legs; adults 12 pairs. They can be very difficult to find in the soil.

Biology

Symphylans are present all year. The cycle occupies about 5-6 weeks. Females lay clusters of 10-20 eggs which they tend until hatched. Symphylans use natural cracks and crevices to move around and between roots, and are most active in loose soil or naturally cracking loams.

Symphylans are primary decomposers, helping to break down and recycle decaying plant material. Generally their presence indicates a healthy soil system. Populations can fluctuate sharply, increasing rapidly if food is available and then crashing due to drying, lack of food, soil cultivation etc. A few symphylans (1-2 per shovelful of soil) are almost always present. Mostly, damage to sugarcane only occurs after the symphylan population has expanded due to break down of rotting vegetable matter (eg from a legume crop), and when that material has gone they congregate on newly planted cane. Usually, sugarcane growth is only restricted if symphylans are sufficiently numerous (approximately 10 or more per plant) to prevent the root-ball from expanding. Damage to plant cane is usually worsened if growth is slowed due to either cold and wet conditions, or hot and dry spring conditions.

Management

In some cases, planting furrows (drills) that had been 'rolled' after planting showed less damage, probably because symphylan movement was restricted in the compacted soil around the setts.

Rapid germination and root growth make spring-plantless susceptible to damage than earlier plantings. A slightly later planting date also allows more time for rotting vegetation to decay and symphylan populations to decline.

Always check that plants are not also being restricted by factors such as poor nutrient balance before diagnosing symphylan damage as the cause of poor-growth symptoms. Even though symphylan-affected plants may not have stooled, hilling-up generally improves growth as root buds from nodes higher up the stems are stimulated to germinate. Natural plant compensation usually evens-out yields over the different portions of the field. Do not compromise the effectiveness of fill-in and weed-control operations by delaying these operations to allow for the 'slow' symphylan-affected portions to stool-out.

Chlorpyrifos (500 g/L) is registered for use against symphylans, with application onto the billet or sett and adjacent soil at planting. Always read the product label and Material Safety Data Sheet for application rate, conditions of use and safety equipment.



Field damaged by Symphyla.