Soil Minions

Springtails

Descriptive sheet

Origin

Let's travel back to the time of the dinosaurs (Mesozoic Era, 252–66 million years ago) springtails were already present, and they existed even earlier, as far back as the Paleozoic Era.

Springtails are older than insects. They belong to the group of hexapods, like insects, but their lineage is considered more primitive. Fossils of springtails date back to the Devonian period, around 400 million years ago well before the appearance of winged insects (around 350 million years ago).

Their simple body structure and adaptability explain their survival over such long periods. Today, they are found on every continent even Antarctica!

They inhabit a wide range of environments: soil, leaf litter, under bark, rocks, and pieces of wood even on the surface of water. Their global distribution is due to their remarkable adaptability and ability to survive extreme conditions such as cold or moisture.

Approximately 9,000 species have been recorded, and they colonize nearly all terrestrial ecosystems and some aquatic ones.

Description and Abilities

Springtails are tiny creatures (0.1 to 5 mm) without wings, often colored white, gray, brown, or blue. Their soft bodies are divided into three parts: head, thorax, and abdomen, with six legs and short antennae. They are completely harmless—they don't sting or bite and are safe for humans, children, and animals.

Their superpower? They enrich the soil and support biodiversity!
They feed on dead leaves, fungi, and microbes, transforming these materials into nutrients for the earth and helping plants grow. Soil-dwelling springtails produce a hydrophobic substance through their skin that repels water and even lets them float on the surface!

Some species, like Folsomia candida, reproduce through parthenogenesis females produce offspring without males, allowing for rapid reproduction.

They also have a furca, a small forked tail, used to jump away from danger.
Highly adaptable, they thrive in a wide variety of environments.

Impact and ecology

Springtails, our little soil minions, play a key role in ecosystems!

They are at the base of the food chain, serving as prey for predators such as spiders, beetles and mites, which supports soil biodiversity.

Their presence is a sign of healthy soil, as they are sensitive to pollutants like pesticides, making them excellent bioindicators of environmental quality.

In Canada, unlike springtails, 19 of the 29 identified earthworm species are imported and harmful, especially in boreal forests. These invasive worms disrupt the organic layer, reduce microbial diversity, and promote invasive plant species, threatening ecological balance.
Springtails, on the other hand, help stabilize ecosystems by regulating populations of microbes and fungi while supporting the natural nutrient cycle.

Their quiet work boosts soil resilience to disturbances such as climate change, ensuring the vitality of forests, grasslands, and gardens.

Interesting Facts

Not insects, but unique arthropods: Although they have six legs, springtails are not insects.
Their mouthparts are hidden inside their head, unlike insects whose mouthparts are external.
They belong to the class Collembola, an ancient group dating back about 380 million years long before the dinosaurs.

Furca-powered jumps: Springtails have a specialized appendage called a “furca,” a fork-shaped structure under their abdomen. When they feel threatened, they release this appendage like a spring, allowing them to jump up to 50 to 100 times their body length sometimes nearly a meter!
The springtails in SoilMinions only jump about 1 or 2 inches.

Crucial ecological role: Springtails play an essential role in breaking down organic matter. They live in humus and help recycle nutrients in the soil, which is vital for ecosystem health.
They can be found in almost all environments, except in the middle of lakes and oceans.

Diversity and abundance: There are over 8,000 known species of springtails worldwide. In Quebec, a 1995 list recorded 68 species, a number that has likely increased with recent research.
In some soils, their population density can reach up to 750 million individuals per hectare.

Indicators of soil health: Due to their sensitivity to contaminants, species like Folsomia candida are used in soil toxicity tests in Canada, especially for assessing pollution impacts in boreal regions rich in oil, gas, and mining activity.

Harmless in homes: Although sometimes found indoors especially in humid places like plant pots, springtails in Quebec don’t bite, don’t transmit diseases, and generally don’t cause damage.
To get rid of them, simply reduce moisture levels.

Soil Minions

SPRINGTAILS

They break down organicmatter and make nutrients available.

Their presence is an indicator of healthy soil and a sign of high biodiversity.

Completely safe for the whole family, animals, and nature.

Over 68 species in Quebec

They live in the top few centimeters/inches of soil, under rocks and pieces of wood.

Springtails play an active role in creating humus, the top layer of healthy soil.

The furca of springtails is an abdominal organ that allows them to jump quickly to escape predators.