




Role of Leaf Litter Arthropods

In theory, 90% of the biomass produced by a forest returns to the soil. There, bacteria and fungi break down the leaves and dead wood into nutrients that can be taken up again by plants to make new leaves and wood. 

Although the bacteria and fungi could do this by themselves, it would take a very long time without the activity of the animals that live in the leaf litter and the first few centimeters of soil.

Mites (related to ticks) and springtails (primitive wingless insects), whose combined weight may be less than 2 grams per square meter, may recycle almost 30% of the leaves and wood on the forest floor. Indirectly, their feeding breaks litter into smaller pieces, increasing the surface area where decomposition by bacteria and fungi actually take place. Their feeding also coats the pieces with fungal spores and bacteria. Both of these may double or even triple the rate of decomposition by fungi and bacteria.

The leaf litter animals also play an important role in the forest food web. There is 1 1/2 times as much energy stored in the soil and leaf litter of a forest as there is in the trees. In addition, the leaf litter animals are very efficient at turning the food they eat into biomass. (My comment: That means they are good at getting big and fat, and then getting eaten by something that gets bigger and fatter!) As a result they can support long food chains.

For example, a mite will eat dead leaves and fungus, this mite will be eaten by a predatory mite, the predatory mite will be eaten by a spider, the spider will be eaten by a beetle, the beetle will be eaten by a mouse, and the mouse will be eaten by an owl. These long chains are important because they allow important minerals like sodium and calcium to be concentrated and then used by animals higher on the food chain.

from the introduction to [A Pictographic Key to Leaf Litter Arthropods](#) from the Missouri Ozark Forest Ecosystem Project (MOFEP) site (adult and advanced readers) by:

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