Collembola, small wingless insects abundant in soils, are conventionally divided into different ecotypes on the basis of their vertical distribution in the soil profile and desiccation tolerance strategy. This classification proposes that surface dwelling (epedaphic) Collembola have a relatively impermeable cuticle that prevents desiccation, whereas deeper dwelling species (euedaphic) are often much more permeable, and thus – presumably – more drought sensitive than those species living on the soil surface.

This view has been challenged in recent laboratory and field experiments, with results showing that euedaphic species tended to be the least drought sensitive group of microarthropods. The reason for this is probably that euedaphic Collembola, in contrast to epedaphic species, can regulate their body fluid osmolality in order to maintain an inward-directed flux of water vapor and hence avoid dehydration.