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DAPHNIA PULEX

Daphnia are small freshwater crustaceans that are commonly called "water fleas" because of the jerky hopping movements they make as they swim. They thrive in algae rich water, creating an essential link in the aquatic food web. They feed on smaller protists, sweeping in prey by creating currents with their thoracic appendages. They are a prime food source for both young and adult fish. Studies have shown that the stomach content of fish can contain up to 95% Daphnia by volume. Whilst found in all parts of the world, Daphnia are most abundant where large quantities of decomposing organic materials accumulate, including permanent ponds, pools, lakes, swamps and slow moving streams. Daphnia possess five pairs of appendages enclosed in a carapace (external skeleton). Daphnia shed (molt) this carapace as they grow. The first pair of appendages are rod-like antennules, the second pair are used for locomotion. The remaining pairs are used for feeding. Daphnia have large compound eyes on either side of the head. Daphnia reproduction is both sexual and asexual production of eggs, with the latter most prevalent under normal conditions. The eggs and embryos develop in a brood pouch located on the female dorsal position. During adverse environmental conditions, sexual reproduction dominates, with Daphnia producing resting eggs (ephippia), similar to brine shrimp cysts. The brood chamber is molted under harsh conditions as a further protection for the eggs.

DIRECTIONS FOR GROWING DAPHNIA

Fill plastic container with still bottled water.

Let water age for 24 hours in

bright sunlight at a room temperature of 70 to 76 degrees F. Add Daphnia eggs containing detritus and place in bright light at the same room temperature. Feed hatched Daphnia daily by stirring in a small pinch of spirulina (algae) powder included in your kit. Feed again when completely consumed.

Because of their transparent body and large ellipsoid heart located behind the head (dorsal location), Daphnia are ideal specimens for physiological studies. The heart rate can be studied and will vary with changes in chemical and physical conditions, including changes in water temperature and the amount of light exposure.

