

Daphnia

Carolina™ CareSheet

Immediate care and handling

When your daphnia arrive, immediately:

- Open the shipping container; remove and inspect the jar of daphnia.
- Unscrew the lid and rest it on top of the jar to allow air exchange that is vital to daphnia survival. **Note:** Do **NOT** aerate the culture with a pipette. Do **NOT** screw the lid back on the jar.
- Keep the culture jar in a cool area (21° C or 69° F) out of direct sunlight.
- Use the daphnia as soon as possible.

Your shipment is a culture of at least 30 adult daphnia; juveniles may also be present. Do not be alarmed while inspecting the culture if you notice debris that looks like dead daphnia on the bottom of the jar. These are most likely discarded exoskeletons that daphnia shed as they grow and molt. Look for daphnia actively swimming slightly above the bottom of the jar, where they settle if they experience shipping shock. Give your daphnia 12 to 24 hours to recover and resume normal movement.

The culture should survive in the culture jar for 4 to 5 days as long as the jar's lid remains loose. For most uses, no further care is needed.

If you transfer daphnia to a different container, use only room temperature springwater. Slowly submerge the jar and pour its contents under the water into the new container. If you do not submerge the jar before pouring, air will be trapped under the daphnia's carapace. The organisms will then float, resulting in death. See the "Culturing daphnia" section below to maintain a culture of daphnia for more than a few days.

Culturing daphnia

We recommend culturing daphnia with 1 of our culture kits that conveniently includes materials and instructions you will need. However, if you want to maintain an existing culture of daphnia, there are several options for feeding it. We recommend our Daphnia Food (item #142316). Another good food source is a continuous supply of "green water" (algae-rich water), if you can provide it. Daphnia also feed on bacteria and yeast.

To prepare a yeast suspension, add springwater to a clean 2-liter plastic bottle and stir in enough baker's yeast to make the water appear milky. Store the suspension in a refrigerator and always agitate before use to resuspend the yeast. Add a few drops of this food to your culture each day. An alternative is to crush 3 to 4 grains of dry baker's yeast on clean paper and dust this on the culture water's surface. Hard-boiled egg yolk or powdered egg yolk can be used in the same amounts as yeast to encourage bacterial growth. **Note:** *Avoid overfeeding. If bacteria overgrow, they can kill the daphnia.*

Do not allow the culture water to become cloudy. Each week draw off and discard about ¼ of the water; replace it with fresh springwater. Do not use city tap water because daphnia are extremely sensitive to the metal ions it contains. In fact, daphnia are so sensitive to metal contaminants that they are used to monitor the water quality of streams and lakes. Glass-distilled water or deionized water can be used if needed minerals are replaced. Brandweins and Chalkleys solutions are 2 widely used recipes for artificial liquid media.

FAQs

We just received our daphnia and they are all on the bottom. Are they dead?

Give them time to recover from shipping and begin swimming. Remember that daphnia grow by shedding their exoskeletons and these accumulate on the bottom of the culture jar.

I poured my daphnia into an aquarium and they all floated. What went wrong?

Daphnia have an expanded carapace that can retain air. When you poured the daphnia, air retained by their carapaces caused them to float and become trapped on the surface. Add daphnia to an aquarium by gently submerging the open jar and “pouring” them underwater.

We want to do a project on the heart rate of daphnia. Which daphnia should we use?

We recommend *Daphnia magna* (item #142330) for heart rate studies due to its larger size and slightly slower heart rate. For heart rate studies, we recommend that you use the daphnia as soon after you receive them as possible. See our *Observing Daphnia Heart Rate* video (www.carolina.com/video) for more information.

Which daphnia should we use to demonstrate feeding by hydra?

Use *Daphnia pulex* (item #142314) for feeding brown hydra. *Daphnia magna* is too large for the hydra to consume. You can also feed freshly hatched brine shrimp if you rinse them to remove the salt. See our *Care and Handling of Hydra* video (www.carolina.com/video) for more information.

How can I tell male from female daphnia?

During breeding season, this is easy. Female daphnia have a dorsal egg sac. Most daphnia populations contain females, with few if any males.

Can I keep daphnia in an aquarium with fish?

You can, but the fish will eat them. In fact, many aquarium hobbyists culture daphnia to feed their fish.

Can I refrigerate daphnia?

We do not recommend refrigerating daphnia. Plan on using the culture as soon as possible after its arrival.

We tried to culture daphnia. At first everything went well but after several weeks they all died. What went wrong?

Daphnia populations sometimes die off. In most cases the females leave behind eggs that will hatch and restart the culture. It is best to maintain 3 or more separate cultures so you have a backup.

Problems?

We hope not, but if so contact us. We want you to have a good experience.

Orders and replacements: 1-800-334-5551, then select Customer Service.

Technical Support and Questions: caresheets@carolina.com



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