

Aquatic Plants

A CAROLINA™ CareSheet

Note: Set up habitats or holding tanks before receiving plants. Many city water systems now treat tap water with chloramines. These compounds do not dissipate by aging the water, so removing them requires a dechlorinator (item #[671939](#)). **Failure to remove chloramines may result in the loss of aquatic plants and animals.** For details, see our "General Guidelines on Living Materials from Carolina Biological Supply Company Care Sheet" at www.carolina.com ("Teacher Resources" tab, "Care Sheets" link, "General Guidelines" in the alphabetical listing). **Do not** use deionized or distilled water unless you have replaced the minerals that were removed in the water-purification process.

Immediate Care and Handling

Submerged plants

Elodea (item #[162101](#)) and *Cabomba* (item #[162022](#)), our most popular aquatic plants, are usually shipped in bundles secured with rubber bands. Cut the rubber bands to release the plants. Other aquatic plants ship without bands. Either rinse the plants in running tap water or swish them about in a pail of tap water. This is to clean the plants, so discard the rinse water. Inspect the plants and discard any that are soft, indicating rot. Also discard any unwanted snails or other animals that possibly hitched a ride on the plants. Place the plants in a holding tank of conditioned tap water until ready to use. Plants kept in holding containers for several days may deplete the mineral content of the water. Compensate for mineral loss by replacing about ¼ of the water with conditioned fresh water every third day. Replace water more often if it fouls. Daily, turn over the plants to expose all plant surfaces to light. The plants need bright light to remain healthy. See the "Habitat Setup and Maintenance" section below for more information on lighting.

Surface-floating plants

Duckweed (item #[161820](#)), *Azolla* (item #[161800](#)), and *Salvania* (item #[161860](#)) float on the

water's surface. We ship duckweed wrapped in moist paper. Peel back the paper and add the duckweed to a container of water. Break up clumps and spread the plants evenly over the water's surface. *Azolla* and *Salvinia* ship on water. Simply open the jars and pour the plants into a container of prepared water.

Habitat Setup and Maintenance

Maintain **surface-floating plants** in shallow trays or bowls as well as in traditional aquaria. Since they float on the surface, water depth is not a consideration. Replace $\frac{1}{4}$ of the water 2 to 3 times per week to maintain the mineral content and place trays and bowls under a light bank, in a greenhouse, or in a window. If maintaining them in an aquarium, see below.

The best way to maintain **submerged plants** is in an aquarium with a gravel or sand substrate. *Elodea*, *Cabomba*, *Ceratophyllum* (item #[162041](#)), *Myriophyllum* (item #[162161](#)), and *Chara* (item #[162120](#)) do best if simply dropped in water. Planted in the substrate, they float free unless their stems are weighted. In time, *Elodea* often develops slender adventurous roots that anchor the plant in the substrate. *Ludwigia* (item #[162141](#)), *Marsilea* (item #[156931](#)), and *Sagittaria* (item #[162201](#)) grow best if their roots are planted in the substrate. See our *Care and Handling of Aquatic Plants* video at www.carolina.com/video for a demonstration of proper planting techniques. **Note:** *Ludwigia* and *Marsilea* are versatile plants; grow them as aquarium plants or as emergent bog plants if desired.

If you maintain any of these plants in an aquarium with fish, the plants will recycle waste products produced by the fish. This maintains the health of the plants and fish. Good lighting is essential. Fluorescent hoods are widely available and recommended. LED lights are now available, and although initially more expensive than fluorescent, they last much longer and maintain more consistent light output over their lifetime. In some situations you can use natural light, but doing so can be tricky. Direct sunlight can heat a tank, stressing fish. Sunlight also can promote the growth of algae, producing green water that obscures your view of the aquarium's inhabitants and may clog filters. Sunlight works best if you have a north-facing

window. East windows sometimes work, but light from south- or west-facing windows is often too intense unless diffused.

With simple care, the plants will flourish. The keys are maintaining a stable temperature, proper mineral nutrition, and light.

FAQ's

Why can't you ship me *Elodea*?

Some states restrict us from shipping *Elodea densa* because they consider it an invasive plant. We usually substitute *Elodea canadensis* (item [#162111](#)), a native non-invasive plant, for orders going to restricted states; however, there are times when *Elodea canadensis* is not available and we must substitute another plant. Never release a non-native plant or animal into your local environment. To discard an aquatic plant, place it in a plastic bag and freeze it for at least 48 hours before discarding the unopened bag in the trash. See our "General Guidelines on Living Materials from Carolina Biological Supply Company Care Sheet" for other suggestions.

Why aren't my plants growing?

It can take time for the plants to adjust to a new home. Fish and other animals in the aquarium release waste products into the water that serve as nutrients for the plants. In a new aquarium, it may take a few weeks for the waste products to accumulate, so be patient.

Will my plants form roots?

Some will. As noted above, *Elodea* and *Cabomba* float free in the water. They absorb nutrients directly from water, so roots aren't necessary. Any roots they do form take time to grow. Duckweed often forms short roots that help absorb nutrients from water.

Will fish and snails eat my plants?

They may. After all, plants are producers and animals are consumers. If growing conditions are good for the plants, both they and the animals flourish.

Why are my plants dying?

There are many possible reasons. The plants may receive insufficient light. The aquaria may be disturbed too often: plants must “settle in” to grow well. Some nutrient could be missing from the water. Lack of phosphorus and iron may limit the growth of water plants. Try adding a small amount of water-soluble fertilizer that contains these nutrients. Also, aquarium plants may grow poorly in water treated with a water softener (unlikely).

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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