



Proper aeration is one of the most important parts of maintaining a healthy Koi pond. Oxygen keeps your pond's ecosystem balanced, supports beneficial bacteria, and ensures your Koi stay active and stress-free. Understanding and improving aeration can make a big difference in the health of your pond and your Koi.

## The Importance of Aeration

Low levels of oxygen in your pond water impact both the health of your Koi and the pond ecosystem. Koi rely on dissolved oxygen in the water to breathe. Low oxygen also prevents beneficial bacteria from breaking down waste efficiently, allowing harmful gases such as ammonia and hydrogen sulfide to build up in your pond.

Dissolved oxygen levels can be measured using a dissolved oxygen meter, which is available at most pond or fish supply stores. Aim to keep the dissolved oxygen level above seven parts per million (ppm), especially in summer when warm water holds less oxygen and Koi are most active.

### Signs of Low Oxygen in Your Pond:

- Koi gasping at the water's surface
- Fish congregating around moving water sources
- Lethargic or disoriented swimming
- Foul or "rotten egg" odor from the water
- Cloudy water or sudden algae blooms
- Dead or decaying plant matter collecting near the bottom
- A rise in ammonia and nitrite levels

## Improving Aeration

### Aeration Systems

Still water loses oxygen quickly. Creating movement breaks the water's surface continuously, allowing gases like carbon dioxide to escape and oxygen to enter. The most effective way to add movement to your pond water is with an aeration system. Some popular options include:

- **Air pumps and diffusers:** Work by lifting low-oxygen bottom water to the surface, where gas exchange occurs. Placing air stones near the bottom of your pond will help promote even oxygen distribution.
- **Water features:** Adding waterfalls, fountains, or spillways to your pond not only enhances aesthetic appeal, but the constant movement also adds oxygen to the water and helps keep water temperatures cool.
- **Bottom-diffused systems:** Circulate the entire water column, making these systems an ideal option for larger ponds.

## Natural Aeration Boosters

In addition to aeration systems, there are also ways you can enhance oxygen levels naturally.

- **Oxygenating plants:** Hornwort, anacharis, and cabomba all release oxygen directly into pond water during the day through photosynthesis.
- **Floating plants:** Lilies and water lettuce add shade, cool the pond, and help limit algae growth.
- **Shade structures:** Strategically placed shade sails and umbrellas can help keep water temperatures cool and oxygen levels stable, especially on hot days.

## Preventing Low Oxygen

Oxygen levels drop quickly when temperatures are hot and during nighttime hours, when algae and plants consume more oxygen.

Some ways to prevent drops in oxygen include:

- Running aeration systems continuously, especially on hot days
- Trimming algae and plants to prevent excess oxygen competition
- Avoiding overfeeding, which increases waste and, in turn, depletes oxygen
- Performing 10-20% water changes weekly to maintain optimal water quality
- Monitoring water parameters routinely