Maintainment of Paramecium

Storing

Paramecia like a comfortable temperature of 16-22 Grad Celsius so you can keep them at room temperature. Keep them away from direct sunlight, so keeping them on a table away from a window is ideal.

Feeding

Paramecia and other small microorganisms like unicellular fungi and algae. There also many alternatives but here are the best:

1. Powdered Yeast

Yeast is good for fast bacterial multiplication and is very good for them.

How to get this?

Use baker's yeast or brewer's yeast and dissolve a tiny pinch (1mg per 100ml) in water

Feeding Schedule:

Feed every 3-5 days

!Overfeeding -> cloudy water -> suffocates the paramecium!

2. Wheat Grain/Seeds (very simple and effective)

Wheat grains slowly decompose, leaving the paramecium with nutrients over time

How to get this?

Boil 2-3 wheat grains in distilled water for 5 min

Let it cool and add to the culture

Feeding Schedule:

Add 1-2 grains per 100 mL of culture every 7-10 days

Remove old grains if they get moldy

3. Paramecia Food (you have to order it online)

I like powered yeast the best, because it makes the paramecium grow quickly, healthy and it is the most reliable and efficient food source out of the list above. Grains or lettuce (not on list because is complicated) are more difficult to be broken down than yeast. The only real problem we have to avoid is overfeeding them. You can easily detect this by the images down below:

Monitor Health

To ensure that the paramecium stays healthy we have to check regularly on these points:

Movement and Behavior

Healthy Signs	Unhealthy Signs	Meaning
Smooth, fast, directional swimming	Erratic spinning, twitching	Stress (bad water quality, toxins, starvation)
Reacts to light/touch	No response to changes	Near death or extreme stress
Normal avoidance reaction (backs up when hitting obstacles)	No avoidance, just bumping into things	Neurological damage (chemical poisoning)

Cell Shape and Structure

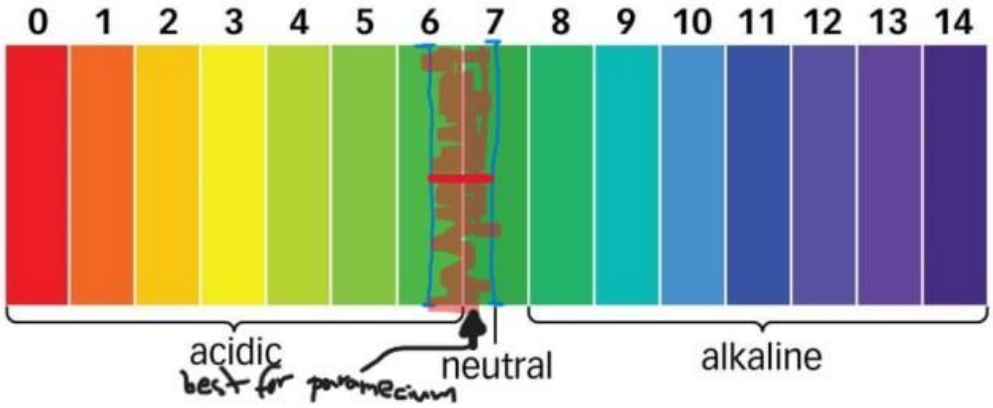
Healthy Signs	Unhealthy Signs	Meaning
Elongated, normal shape	Swollen, misshapen	Osmotic shock (wrong water), disease
Clear cytoplasma, visible organelles	Dark vacuoles, foamy cytoplasm	Bacterial infection or starvation
Food vacuoles actively forming	No food vacuoles visible	Not eating (no bacteria in water)

Water Requiriy

Optimal pH is 6.5 to 7.5, ideal 6.5-7, 7-7-6.5 also safe

Effects of Incorrect pH

pH level	Effect	Signs of stress
<6.0 (to acidic)	Slows metabolism, reduces reproduction	Erratic swimming, shrinkage
>8.0 (too alkaline)	Disrupts cell membrane function	Swelling, cells burst



Common Problems and Fixes in Maintaining Paramecium

Problem 1: Sudden Population Die-Off

Causes: pH crash (water too acidic or alkaline), Toxins (metal or cleaning issues), Bacterial Bloom (from overfeeding yeast) -> oxygen depletion

Sollution: Reduce feeding (if water is cloudy), check pH (use strips)

Problem 2: Paramecia Swimming erratically or in circles

Causes: chemical poisoning, oxygen starvation, toxins

Sollution: replace medium, avoid metal tools

Problem 3: Culture smells bad (like rotten eggs)

Causes: dead paramecia, old food

Sollution: remove old food, feed less yeast, transfer to fresh medium

Problem 4: Paramecia look shriveled

Causes: water too hard or soft, temperature shock to hot or cold

Sollution: transfer to fresh medium, keep culture at room temperature

Problem 5: Mold or fungi growing in culture

Causes: dirty tools, happens with lattice if used wrongly (food source)

Sollution: avoid overfeeding, use other food sources

Problem 6: No Reproduction

Causes: not enough food, too crowded

Sollution: add tiny pinch of yeast, split culture in two containers

Subculture

When everything is ok, transfer every 1-2 weeks to a new and fresh medium to prevent overcrowding/starvation.