A cycled system refers to one with an established nitrogen cycle where ammonia is converted to nitrites and then to nitrates by nitrifying bacteria. Chlorinated water will not cycle.

Water Quality Targets:
- Ammonia (TAN) < 0.5 ppm
- Nitrites (NO₂⁻) < 1 ppm
- Nitrates (NO₃⁻) 80-200 ppm
- pH 6.5-7.0
- kH (Alkalinity) 80-180 ppm
- DO (Dissolved Oxygen) > 5 ppm
- Temperature 72°–75°F


Utilize your Master Gardener troubleshooting skills for this. IPM for pest control. Normally only deficient in Ca, K, or Fe. Roots should be white and robust. How long have plant been in the system? Cuttings (pythium)?

Healthy fish exhibit vigorous feeding habits, relaxed after feeding behavior, no lethargy, no gasping at the surface, no white spots and no open sores.

If a Client does not understand any of the terms or questions that follow, please refer them to the proper documentation.

If Problem still exists, refer to another Master Gardener, Academic Expert or Professional.