

Hydroponic Nutrient & pH Chart

pH, EC & PPM guide for 25 popular hydroponic plants

25-Plant Master Chart

Use these ranges as practical starting points. Crop variety, plant age, water quality, environment, system design and nutrient formulation can affect the best target.

Plant	Recommended pH	EC (mS/cm)	PPM (500 scale)
Asparagus	6.0–6.8	1.4–1.8	700–900
Basil	5.5–6.0	1.0–1.6	500–800
Beans	6.0	2.0–4.0	1,000–2,000
Banana	5.5–6.5	1.8–2.2	900–1,100
Broccoli	6.0–6.8	2.8–3.5	1,400–1,750
Cabbage	6.5–7.0	2.5–3.0	1,250–1,500
Celery	6.5	1.8–2.4	900–1,200
Cucumber	5.0–5.5	1.7–2.0	850–1,000
Eggplant	6.0	2.5–3.5	1,250–1,750
Leek	6.5–7.0	1.4–1.8	700–900
Lettuce	6.0–7.0	1.2–1.8	600–900
Marrow	6.0	1.8–2.4	900–1,200
Okra	6.5	2.0–2.4	1,000–1,200
Pak Choi	7.0	1.5–2.0	750–1,000
Parsley	6.0–6.5	1.8–2.2	900–1,100
Peppers	5.5–6.0	0.8–1.8	400–900
Rhubarb	5.5–6.0	1.6–2.0	800–1,000
Sage	5.5–6.5	1.0–1.6	500–800
Spinach	6.0–7.0	1.8–2.3	900–1,150
Strawberries	6.0	1.8–2.2	900–1,100
Tomatoes	6.0–6.5	2.0–4.0	1,000–2,000
Zucchini (Courgette)	6.0	1.8–2.4	900–1,200
African Violet*	6.0–7.0	1.2–1.5	600–750
Carnation*	6.0	2.0–3.5	1,000–1,750
Rose*	5.5–6.0	1.5–2.5	750–1,250

*Ornamental/flowering plants. PPM values use the 500 scale (EC × 500). Confirm your meter's conversion scale.

EC to PPM Conversion Chart

PPM/TDS meters may use different conversion factors. Two meters can therefore show different PPM values for the same solution.

EC (mS/cm)	500 Scale	640 Scale	700 Scale
0.4	200	256	280
0.6	300	384	420
0.8	400	512	560
1.0	500	640	700
1.2	600	768	840
1.4	700	896	980
1.6	800	1,024	1,120
1.8	900	1,152	1,260
2.0	1,000	1,280	1,400
2.5	1,250	1,600	1,750
3.0	1,500	1,920	2,100
3.5	1,750	2,240	2,450
4.0	2,000	2,560	2,800

Nutrient Deficiency Quick Reference

Symptom	Possible Causes	Check First
Older leaves turning yellow	Nitrogen shortage, root stress or normal aging	EC, pH, roots and leaf age
Young leaves yellow with greener veins	Iron availability issue, often associated with high pH	pH and root health
Brown or burnt leaf tips	High EC, salt stress, calcium-related or environmental stress	EC, pH, temperature and airflow
Brown leaf margins	Potassium shortage, salt stress or water stress	EC, nutrient mix and reservoir level
Lettuce tip burn	Poor calcium movement into rapidly growing leaves	Airflow, humidity, temperature and EC
Blossom-end rot	Inadequate calcium reaching developing fruit	Water consistency, EC, roots and calcium availability
Slow or stunted growth	Nutrient imbalance, unsuitable pH, roots or environment	pH, EC, roots, light and temperature
Wilting despite adequate water	Root damage, low dissolved oxygen, heat or disease	Roots, aeration and solution temperature

Important: Leaf symptoms alone rarely identify the exact cause. Check pH, EC, water level, root condition and solution temperature before adding more fertilizer.

pH & EC Troubleshooting Cheat Sheet

What You Notice	What It May Mean	What to Do First
pH drifting slightly within crop range	Normal plant and reservoir activity	Record the trend; avoid chasing one exact number
pH changes rapidly or persistently	Water chemistry, mixing, algae, microbes or root problems	Check source water, roots, cleanliness and meter
Water level drops + EC rises	Remaining solution is becoming more concentrated	Top up water, mix and recheck EC
Water level drops + EC falls	Plants may be taking up dissolved nutrients relatively quickly	Recheck readings and crop needs before adjusting
EC unexpectedly high	Concentrated solution, source-water minerals or meter issue	Check source-water EC, calibration and mixing
EC unexpectedly low	Dilution, nutrient uptake or mixing issue	Confirm meter, water level and nutrient mix
Deficiency symptoms with normal EC	pH, root health or nutrient balance may limit uptake	Check pH and inspect roots before adding fertilizer

Reservoir Monitoring Checklist

Check	What to Record / Inspect
pH	Current reading and whether it is trending up or down
EC / PPM	Current nutrient-strength reading and meter scale if using PPM
Water level	Top-off needs and how quickly the reservoir is dropping
Source water	Starting EC and pH when useful for troubleshooting
Roots	Color, firmness, odor and signs of slime or damage
Solution temperature	Watch for repeated overheating, especially with submerged roots
Aeration / circulation	Confirm pumps and air stones are operating correctly
Meters	Clean, store and calibrate according to manufacturer instructions
Reservoir / equipment	Look for debris, algae, salt buildup or contamination

Quick Rules to Remember

1. Treat crop ranges as starting points, not absolute targets.
2. Monitor pH and EC together.
3. Test source-water EC when water quality is a concern.
4. Make small corrections, circulate the solution, then retest.
5. Check roots and growing conditions before assuming every leaf symptom needs more fertilizer.

Full guide: HydroponicFarmTips.com/nutrient-and-ph-chart-for-hydroponic-garden/