

Hydroponic pH and EC Chart

Free printable

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Updated October 2026

Targets for 39 herbs, greens and fruiting crops, grouped the way they share water. EC is in mS/cm. The PPM columns are the mature EC on a 500-scale and a 700-scale meter.

Crop	pH	Seedling EC	Mature EC	PPM, 500 scale	PPM, 700 scale
Herbs 17 crops					
 Sweet basil	5.5 to 6.5	1.0 to 1.2	1.0 to 1.6	500 to 800	700 to 1,120
 Mint	5.5 to 6.5	1.0 to 1.2	2.0 to 2.4	1,000 to 1,200	1,400 to 1,680
 Chives	6.0 to 6.5	1.0 to 1.2	1.8 to 2.0	900 to 1,000	1,260 to 1,400
 Garlic chives	6.0 to 6.5	1.0 to 1.3	1.4 to 2.0	700 to 1,000	980 to 1,400
 Green onions	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Parsley	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Cilantro	6.0 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Dill	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Oregano	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Thyme	5.5 to 6.5	1.0 to 1.2	1.2 to 1.6	600 to 800	840 to 1,120
 Sage	5.5 to 6.5	Start at 1.0	1.0 to 1.6	500 to 800	700 to 1,120
 Rosemary	5.5 to 6.5	Start at 1.0	1.2 to 1.6	600 to 800	840 to 1,120
 Lemon balm	5.5 to 6.5	0.8 to 1.1	1.0 to 1.6	500 to 800	700 to 1,120
 French tarragon	6.0 to 6.5	About 1.0	1.0 to 1.8	500 to 900	700 to 1,260
 Stevia	6.0 to 6.5	1.0	1.0 to 1.6	500 to 800	700 to 1,120
 Shiso (perilla)	5.8 to 6.2	0.8 to 1.0	1.0 to 2.0	500 to 1,000	700 to 1,400
 Lemongrass	6.0 to 7.0	0.8 to 1.0	1.6 to 2.4	800 to 1,200	1,120 to 1,680
Leafy greens 12 crops					
 Loose-leaf lettuce	5.5 to 6.5	1.0 to 1.2	1.0 to 1.4	500 to 700	700 to 980
 Butterhead lettuce	5.5 to 6.8	1.0 to 1.2	0.8 to 1.4	400 to 700	560 to 980
 Romaine lettuce	5.5 to 6.8	1.0 to 1.2	1.2 to 1.8	600 to 900	840 to 1,260
 Spinach	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Arugula	5.5 to 6.5	1.0 to 1.2	1.4 to 1.8	700 to 900	980 to 1,260
 Kale	5.5 to 6.5	1.0 to 1.2	1.6 to 2.0	800 to 1,000	1,120 to 1,400
 Bok choy	6.0 to 7.0	1.0 to 1.2	1.5 to 2.0	750 to 1,000	1,050 to 1,400
 Swiss chard	5.5 to 6.8	0.8 to 1.0	1.8 to 2.3	900 to 1,150	1,260 to 1,610
 Watercress	6.5 to 7.0	1.0 to 1.2	1.5 to 2.0	750 to 1,000	1,050 to 1,400
 Mizuna	5.8 to 6.5	0.8 to 1.0	1.0 to 1.5	500 to 750	700 to 1,050
 Mustard greens	5.5 to 6.8	Start at 1.0	1.2 to 2.4	600 to 1,200	840 to 1,680
 Celery	6.3 to 6.5	Start at 1.0	1.8 to 2.4	900 to 1,200	1,260 to 1,680
Fruiting crops and edible flowers 7 crops					
 Cherry tomatoes	5.8 to 6.5	1.0 to 1.2	2.0 to 2.5	1,000 to 1,250	1,400 to 1,750
 Dwarf peppers	5.8 to 6.3	1.0 to 1.2	2.0 to 2.5	1,000 to 1,250	1,400 to 1,750
 Dwarf cucumber	5.5 to 6.0	1.0 to 1.5	1.8 to 2.4	900 to 1,200	1,260 to 1,680
 Strawberries	5.5 to 6.5	1.0 to 1.2	1.6 to 2.0	800 to 1,000	1,120 to 1,400
 Pea pods	6.2 to 6.5	Start at 1.0	1.2 to 1.8	600 to 900	840 to 1,260
 Nasturtium	6.0 to 7.0	0.8 to 1.0	1.0 to 1.6	500 to 800	700 to 1,120
 Calendula	5.5 to 6.2	1.2	1.2 to 1.8	600 to 900	840 to 1,260
Microgreens and tray crops 3 crops					
 Microgreens	5.5 to 6.5	0.5 to 1.0	0.8 to 1.2	400 to 600	560 to 840
 Micro herbs	5.5 to 7.0	1.2 at most	1.0 to 1.2	500 to 600	700 to 840
Wheatgrass	6.0 to 7.0	0.8 to 1.2	0.8 to 1.2	400 to 600	560 to 840

“Start at 1.0” means the research gives no seedling figure for that crop, so it starts at the gentle EC 1.0 used for every seedling on the site. Page 2: how to read it, EC to PPM and the crops that break the rules.

urbanhydrospace.com/hydroponic-ph-ec-chart

Full chart, sources and crop guides

Reading the pH and EC chart

How to read a row

pH range

Where the roots can take up every nutrient. Outside it, food sits in the water and the plant starves anyway.

Seedling EC

The strength to use until young plants are established.

Mature EC

The strength once the plant is established and growing fast.

EC to PPM

EC (mS/cm)	500 scale	700 scale	Typical use
0.5	250 PPM	350 PPM	Where microgreen seedlings can start
1.0	500 PPM	700 PPM	Gentle start for most seedlings
1.2	600 PPM	840 PPM	Middle of the lettuce range
1.5	750 PPM	1,050 PPM	A shared herb and greens tank
1.8	900 PPM	1,260 PPM	Top of the range for parsley, dill and spinach
2.0	1,000 PPM	1,400 PPM	Where mint and fruiting crops begin
2.5	1,250 PPM	1,750 PPM	Top end for tomatoes and peppers

A meter never measures PPM. It measures EC and multiplies it by 500 or by 700, depending on the brand. Check your meter's manual, or switch it to EC: EC means the same thing on every meter.

When your plants disagree with the chart

What you see	Check first	Then	What fixes it
Yellow leaves	Is the pH out of range?	Then ask whether the EC is too low	Bring the pH to 6.0 first, and only then correct the EC
Crisp brown tips on outer leaves	Is the EC too high?	After that, check the calcium	Dilute with plain water, and check the formula has calcium
Brown tips on the newest inner leaves	Is it growing too fast?	Next, look at the airflow	Lower the EC to 1.0 and add a fan, since calcium is not reaching the new leaves
Wilting with plenty of water	Is it root rot?	Also test for a pH crash	Check the roots for slime, then test and correct the pH

Crops that break the usual rules

- **Higher pH.** Watercress is the only crop here that needs 6.5 to 7.0. Nasturtium does best at 6.5 to 6.8, lemongrass at 6.3 to 6.5, and bok choy takes 6.0 to 7.0.
- **Top half only.** Chives, cilantro, garlic chives, French tarragon and stevia want 6.0 to 6.5, pea pods 6.2 to 6.5 and celery 6.3 to 6.5. A tank held at 5.6 is too acidic for every one of them.
- **Low end.** Dwarf cucumber wants 5.5 to 6.0 and dwarf peppers 5.8 to 6.3, so a tank that drifts up to 6.4 is already too high for both.
- **Seedlings below 1.0.** Microgreens start at 0.5 to 1.0 and wheatgrass at 0.8 to 1.2; Swiss chard, lemongrass, shiso, nasturtium and mizuna at 0.8 to 1.0; lemon balm at 0.8 to 1.1.

Sharing one tank

- A mixed tank runs best at **EC 1.5** and a **pH near 6.0**, which suits 36 of the 39 crops.
- **Heavy eaters**, with ranges past EC 2.0: mint, cherry tomatoes, dwarf peppers, lemongrass, dwarf cucumber, Swiss chard, mustard greens and celery. Mint rarely thrives in a shared tank.
- **Light eaters**, topping out at EC 1.4 or below: loose-leaf and butterhead lettuce, microgreens, micro herbs and wheatgrass.
- **Basil in winter** can go a little stronger, toward EC 1.8, while the days are short.

Check pH first. A plant that looks hungry is often locked out, not underfed. Bring the pH into range first, and only then correct the EC.