

A consistent pH is better than a fluctuating pH, in soil or hydroponics.

pH at the Root Zone

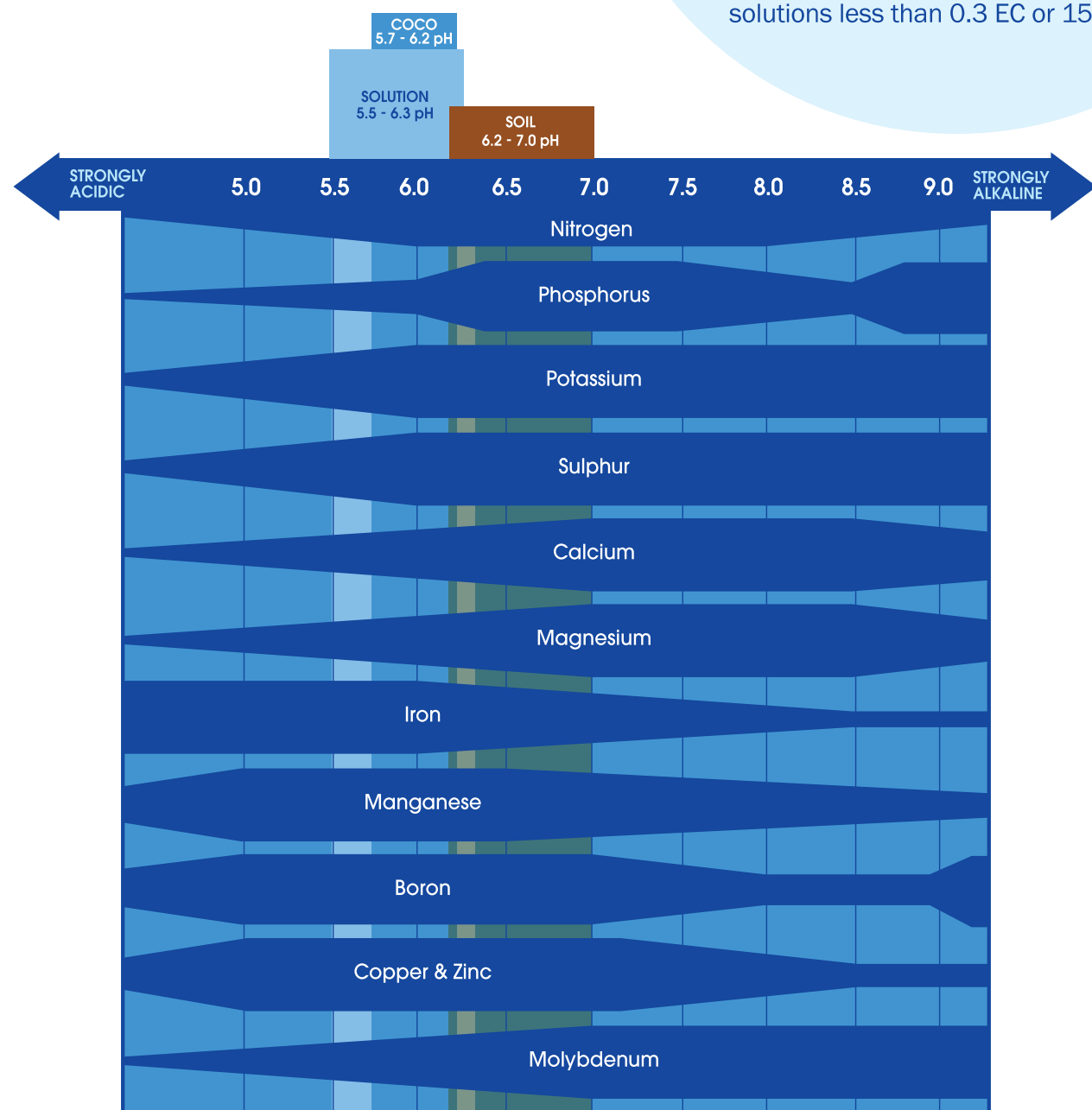
Perfect pH levels for your plants guarantee they get nutrient uptake. Consistent measurement of pH in the growing medium and achieving the right range ensures healthy plants. Each type of plant has a preferred range. The pH chart is a handy guide for finding your required range in different media. To find the right pH range for your specific plant, check out pages 16 & 20 of the Bluelab Grow Book.

pH Chart

The width of the bands indicates the relevant availability of each element at various pH levels:

pH Probe Tips:

- Clean, hydrate and calibrate pH probe once a month or every 30 uses.
- Calibrate to at least two points for increased accuracy.
- Ensure the pH probe tip is kept wet, and stored in Bluelab® KCl Storage Solution.
- Do not store pH probes or pH Pens in RO, distilled or deionised water. RO water has no ions, this can affect the reference.
- It is hard to get an accurate reading in solutions less than 0.3 EC or 150 ppm.



Conductivity lets you know how strong the nutrient solution is.

Conductivity Conversion Chart

Measuring conductivity (ppm/EC) gives an accurate reading of the nutrients in a solution. Pure water like RO or distilled water has no electrical conductivity. When you add nutrients it will start to conduct electricity and the more nutrients you add the higher the reading.

Conductivity Meters - Resolution & Testing

Resolution: Increments that the instrument will display within the measurement range.

Accuracy: The range in which a meter may vary from the correct value.

Temperature Compensation: Correction for the influence of temperature on a measurement.

conversion chart

(mS/cm ²)	EC	CF	ppm 500 TDS	ppm 700
0.1	0.1	1	50	70
0.2	0.2	2	100	140
0.3	0.3	3	150	210
0.4	0.4	4	200	280
0.5	0.5	5	250	350
0.6	0.6	6	300	420
0.7	0.7	7	350	490
0.8	0.8	8	400	560
0.9	0.9	9	450	630
1.0	1.0	10	500	700
1.1	1.1	11	550	770
1.2	1.2	12	600	840
1.3	1.3	13	650	910
1.4	1.4	14	700	980
1.5	1.5	15	750	1050
1.6	1.6	16	800	1120
1.7	1.7	17	850	1190
1.8	1.8	18	900	1260
1.9	1.9	19	950	1330
2.0	2.0	20	1000	1400
2.1	2.1	21	1050	1470
2.2	2.2	22	1100	1540
2.3	2.3	23	1150	1610
2.4	2.4	24	1200	1680
2.5	2.5	25	1250	1750
2.6	2.6	26	1300	1820
2.7	2.7	27	1350	1890
2.8	2.8	28	1400	1960
2.9	2.9	29	1450	2030
3.0	3.0	30	1500	2100
3.1	3.1	31	1550	2170
3.2	3.2	32	1600	2240
3.3	3.3	33	1650	2310
3.4	3.4	34	1700	2380
3.5	3.5	35	1750	2450
3.6	3.6	36	1800	2520

Conductivity Probe Tips:

- Measure incoming water, for water quality.
- Measure after mixing nutrients.
- Which ppm Scale? Check feed schedule and follow the nutrient manufacturer's recommendations.
- **Be sure you are using the correct ppm/TDS scale.**
- Clean the probe tip at least once a month with Bluelab® cleaning solution to maintain accurate readings.

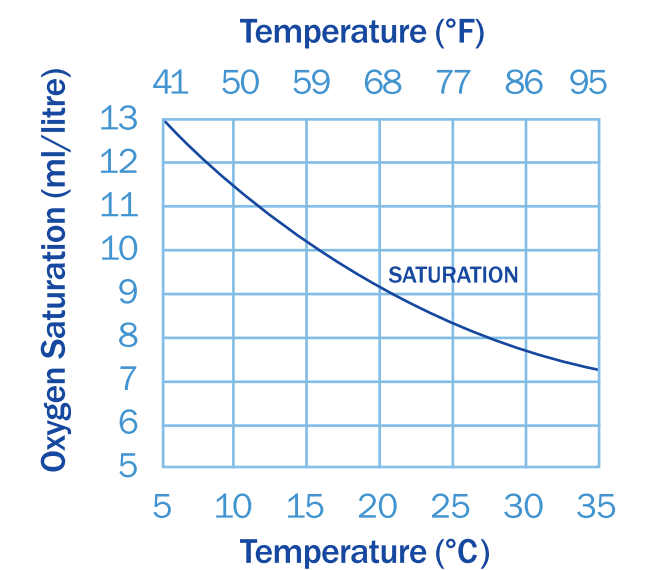
Conductivity Units	EC	CF	ppm 500	ppm 700
Solution Value	2.77	27.7	1385 ppm	1939 ppm
Accuracy	±0.1	±1	±50 ppm	±70 ppm
Displayed Value	2.8	28	1390 ppm	1940 ppm

Controlling your nutrient solution temperature is a must!

Temperature Range

Ideal temperature range is 65-72°F / 18-22 °C which allows for adequate dissolved oxygen in a solution. Plants can die from oxygen deficiency or succumb to pathogens that thrive in higher temperatures.

The below graph shows the maximum amount of oxygen that can be dissolved in water at various temperatures.



Temperature Tips:

- Too cold, plants won't grow.
- Too hot, solutions lose dissolved oxygen and can cause root rot.
- Avoid direct light on nutrient solution reservoirs to prevent the growth of algae and bacteria.

Acronym Definitions:

ppm = Parts per million
 TDS = Total Dissolved Solids
 EC = Electrical Conductivity
 CF = Conductivity Factor
 mS/cm² = MilliSiemens per cm²

EC x 500 = TDS
 EC x 500 = ppm 500
 EC x 700 = ppm 700
 ppm 500 ÷ 500 = EC
 ppm 700 ÷ 700 = EC

For information on cleaning and calibrating ask your retailer for a demonstration on how to clean your probes at the Bluelab Cleaning Station.

