

Chemical Properties of Growing Media

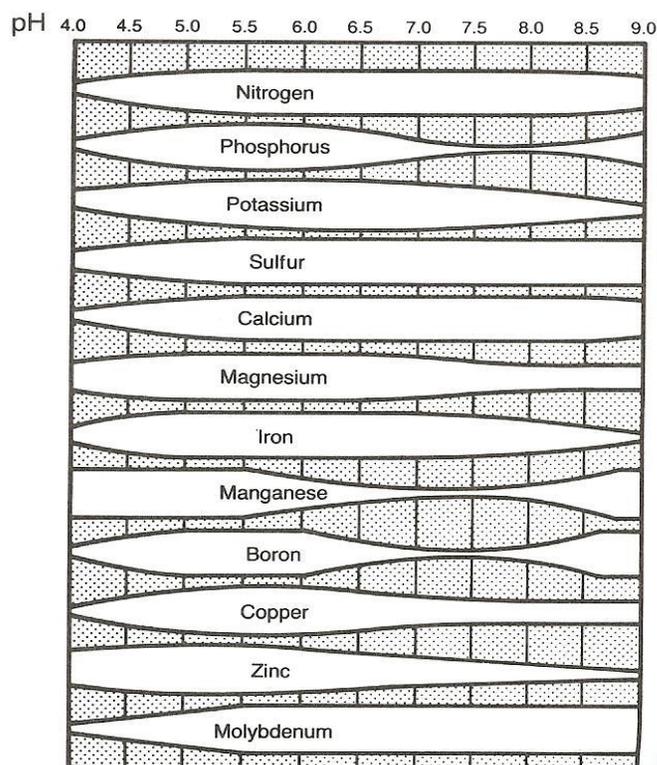
Last month's article was concerned with the physical properties of growing media and how to go about analyzing these characteristics. This month's article will continue this theme but will look at the chemical properties of growing media. Understanding the chemical properties and their possible interactions is actually quite complex. Hence this article will only touch on a few key points, other key areas such as the buffering capacity of mixes will not be covered in this article.

The physical properties of your growing media coupled with your water quality and irrigation volume and nutrition program will influence the chemical properties of your media over time. In addition to this your cropping may also influence the chemical properties of growing media over time.

Typical Chemical Properties of Growing Media

Chemical property	Application	Regular Potting Mix	Premium Potting Mix
pH	Acid Mixes	4.8-5.8	
	Other Mixes	5.3-6.5	
Electrical Conductivity	Seedling	≤1.5 dS/m	N/A
	Other	≤2.2 dS/m	
Toxicity	All	≥70 mm	

Nutritional Availability Vs pH



pH – The basics

- pH is a measurement of the concentration of H ions
- It is measured on a scale of 1 – 14.
- Growing Media pH will influence the growth of your crops
- Plants have their preferred pH range, in other words different crops may have different preferred pH ranges.
- The pH of your growing media will change with time. Hence it needs to be measured from time to time. The pH of your growing media may be influenced by, your nutrition program, the plant itself, your water quality, your irrigation volume and frequency, the physical properties of your growing media.
- Plant pathogens are active over a range of different pH's. For example the incidence of Pythium increases when the pH range increases above pH 5.9.

EC – The Basics

- EC is a measure of the amount of soluble salt in the growing media.
- EC can be measured by extracting liquid from the growing media substrate. The liquid extracts can be obtained using a number of different methods. It is important to use the same method every time you perform this routine. The industry standard uses a 1:1.5 solution extract. In other words 100 ml of growing media and 150 ml of water of a known quality.
- The EC of your growing media should be designed to meet not exceed the EC requirements of your crops.
- For a seedling mix the Standard EC should not exceed 1.5 ds/m using the 1:1.5 solution extract method. Some seedlings will not tolerate EC levels above 1 ds/m.
- For other crops the Standard should not exceed 2.2 ds/m using the 1:1.5 solution extract method.

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