

Nutritional Monitoring: Corrective Procedures for Modifying Substrate pH and Electrical Conductivity (EC)



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pH Corrective Procedures

LOW			HIGH		
Flowable Lime	Hydrated Lime	Potassium Bicarbonate (KHCO ₃)	Acid-based Fertilizer	Acid Water Drench	Iron Drenches (3 Options)
<ul style="list-style-type: none"> Apply 1 to 2 qt. per 100 gal. of water. Rinse foliage after application. Avoid damage to your injector by using rates of 2 qt. per 100 gal. of water, <u>or less.</u> Split applications if needed. 	<ul style="list-style-type: none"> Mix 1 lb. in 3 to 5 gal. of <u>WARM</u> water. Mix twice. Let settle. Decant liquid and apply through injector at 1:15. Caustic (rinse foliage ASAP and avoid skin contact) 	<ul style="list-style-type: none"> Use 2 lbs. per 100 gal. of water. Immediately, rinse foliage. <u>Provides 933 ppm K.</u> The following day, <u>leach heavily</u> with a complete fertilizer to reduce substrate EC and restore nutrient balance. Rates <u>greater than 2 lbs.</u> per 100 gal. of water can cause phytotoxicity! 	<p>If substrate pH is just beginning to increase:</p> <ul style="list-style-type: none"> First consider switching to an acidic-based fertilizer. Ammoniacal-nitrogen (N) based fertilizers are naturally acidic and plant nitrogen uptake will help moderate the substrate pH over a week or two. 	<p>If substrate pH levels are not excessively high and a quick lower is desired:</p> <ul style="list-style-type: none"> Use sulfuric acid to acidify your irrigation water to a pH 4.0 to 4.5. Apply acid water as a substrate drench providing 5 to 10% excessive leaching of the substrate. Rinse foliage to avoid phytotoxicity. Results should be visible within 5 days. Retest substrate pH. Repeat if needed. 	<ul style="list-style-type: none"> Apply as a substrate drench with sufficient volume to leach the pot. Rinse foliage immediately Avoid use on iron efficient plants (geraniums). <ol style="list-style-type: none"> <u>Iron-EDDHA</u> <ul style="list-style-type: none"> Mix 5 oz. in 100 gal. of water <u>Iron-DTPA</u> <ul style="list-style-type: none"> Mix 5 oz. in 100 gal. of water <u>Iron sulfate:</u> <ul style="list-style-type: none"> Mix 4-8 oz. in 100 gal. of water

EC Corrective Procedures

LOW	HIGH	
	Switch to Clear Water Irrigations	Clear Water Leaching
<p>If low EC problems occur, increase the fertilization rate to 300 ppm N for a few applications before returning to the recommend fertilization rate for the crop.</p>	<p>If EC is just beginning to increase over time:</p> <ul style="list-style-type: none"> Apply a few clear water irrigations to lower EC levels by allowing the plant to utilize the fertilizer salts. 	<p>If EC values are excessively high:</p> <ul style="list-style-type: none"> Leach substrate twice with back-to-back clear water irrigations. Allow substrate to dry down normally. Retest the EC. <ul style="list-style-type: none"> If EC levels are still too high, repeat the double leach. Once the substrate EC is back within the normal range, use a balanced fertilizer at a rate of 150 to 200 ppm N.

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