



ISP technologies

environmentally clean crop production for healthier food

Pepper

Greenhouse/High Tunnel

(Rates Based on 100 plants)

Growing a successful high tunnel pepper crop requires careful attention to your crop's nutrition from planting through the maturation of the last fruit. Like with tomatoes Blossom End Rot (BER) can greatly reduce the harvest of #1 fruit. Proper plant nutrition including balancing potassium, calcium and magnesium in plant tissue will greatly reduce culls and improve your percentage of #1 fruit.

It should be noted that this program is presented as a guideline only based upon research and the experiences with a number of growers. With the wide variances possible from both soil types and environmental conditions present during any particular season, your actual recommendation can vary from what is presented. It is always advisable to discuss actual management practices with your local ISP specialist.

Bulk Fertility: Apply approximately 50% of your expected nutrient requirements as granular materials prior to planting. Knott's Handbook for Vegetable Growers estimates that an average yield of fresh market bell peppers will require 100-180 units of nitrogen, 150 units of P_2O_5 , and 200 units of K_2O per acre. This is a good starting point for the application of a preplant nutrient blend. Apply 50 - 75 units N, 75 units P_2O_5 , and 100 units K_2O per acre and incorporate into targeted planting beds (or per 100 feet of row - that works out to .75 units N + .75 unit P + 1.25 units K preplant). The recommendations in this program is based upon 100 plants, with plants spaced 18 inches apart in the row, double rowed. Plant population is a critical aspect of fertility recommendations, and if planting closer or further apart in the row, then adjustments to nutrient applications should be made.

Transplant Solution: Transplant solution should contain: .8 pounds of 10-45-10 + 3 fluid ounces of Phytogro Xtra + 2 fluid ounces of Metabolik SB per 10 gallons of total solution. Water all transplants in thoroughly with this mix.

NOTE, First 30 Days: Our objective is to build an aggressive frame in order to increase potential number of fruiting sites and forms at first fruiting. If it is thought that one needs to push the frame, or if there are flower buds on the plant when transplanting, it can be beneficial to apply 28-16-7. If plant frame shows excessive vegetative growth, apply 0-36-30. It is very challenging to get a great crop of peppers from 'old' pepper transplants. Younger plants that are not trying to create flowers in the transplant trays will take off quicker, and produce better in both the short and long term. Always remove the first flower that forms in the 'V' where pepper plants first split as these mature fruit are very difficult to harvest without damaging the plant frame.

The more aggressive growers are always observing all aspects of plant development, vegetative development, numbers of fruit set, fruit color, and of course any outbreak of pests or disease. Although this provides a wealth of information, it is recommended that tissue tests be taken to monitor actual nutrient uptake and potential deficiencies. The first tissue sample should be taken four weeks after transplanting, then every two weeks until the last fruits are setting. Use the following as targets from your lab results: N - 4 - 6%; P - .35 - 1%; K - 4 - 6%; Ca - 2.5%; Mg - .8 - 1%; S - .5%; B - 75 ppm; Zn 150-200 ppm; Mn - 100- 250 ppm; Fe - 100 - 300 ppm; and Cu - 25 ppm. Although it is usually a separate test, silicon should be at 3,500 ppm. Weather and time of day that samples are collected will have an impact upon your lab results. If sunny and in the morning when you collect your first sample, then take all remaining samples in the morning on sunny days.



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The following table is designed for main season, determinate peppers with a maturity of 80 to 95 days. Prolonged cool, cloudy periods will add days to this schedule, and extreme heat can shorten the schedule.

| Week | ----- ISP Soluble Plant Foods ----- Recommended | Applied | Other notes, micronutrients, Ca, Mg |
|----------|--|---------|---|
| 1 | 4 ounces 10-20-20 & .75 pound 28-16-7 | | |
| 2 | 4 ounces 10-20-20 & .75 pound 28-16-7 | | Observe frame development. |
| 3 | 6 ounces 10-20-20 & 1.25 pounds 28-16-7 | | Observe frame & fruit development. |
| 4 | 6 ounces 10-20-20 & 1.25 pounds 28-16-7 | | Tissue test 4 weeks following planting, and adjust nutrient accordingly. |
| 5 | 6 ounces 10-20-20 & 6 ounces 9-14-24 | | Begin adding 2 teaspoons SiMag58, and 3 fluid ounces CalStore or MetaCal per week. |
| 6 | 6 ounces 10-20-20 & 6 ounces 9-14-24 | | Include 2 tsp. Metabolik HV-1 every 10 - 14 days with your disease management program. Time for second tissue test. |
| 7 | 6 ounces 10-20-20 & 1.25 pounds 4-18-38 | | Continue SiMag58 and MetaCal/CalStore. |
| 8 | 6 ounces 10-20-20 & 1.25 pounds 4-18-38 | | Continue SiMag58 and calcium until end of season. Third tissue test. |
| 9 | 1.5 pounds 4-18-38 | | |
| 10 & 11 | 2 pounds 4-18-38 | | Fourth tissue test. |
| 12 - end | 2 pounds 4-18-38 Continue to repeat weeks 10 - 12 | | Fifth tissue test if harvest is to be maintained. Adjust nutrients based upon tissue sample. |



Apply Meta Cal, or CalStore through the fertigation system weekly when not applying any P containing nutrients. Fill irrigation lines with water, inject CalStore or Meta Cal, then flush lines with clear water. This will ensure that no clogging precipitates are formed and that your developing fruit get plenty of calcium in balance with magnesium.



Foliar Applications: Foliar applied nutrient (K, Ca and Mg) will greatly assist growers in maintaining sufficient amounts of these nutrients when coupled with a proper fertigation program, especially at key stress points. Examples are fruit set and/or maintaining vegetative growth with a heavy fruit load. Include ISP Plant Food and SiMag58 at 1 - 2 tsp. each per gallon of foliar solution. Spray weekly with any foliar applications for pest management. Calcium supplements CalStore and MetaCal can be foliar applied with pest management materials, but not with 4-18-38 in order to avoid any reactions with phosphorous (P).

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