



Double Cropping Vegetables Grown with Plasticulture in Florida in the BMP Era¹

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This publication is one of a series entitled Fertilizer and Irrigation Management in the BMP Era.

This series is divided into nine principles described in the Introduction Chapter (HOS-897). This publication is part of Principle 4, "Practice Year-Round Nutrient Management Fertilizer." BMP implementation requires a global approach to production management. However, for presentation purposes, each aspect of vegetable production is described in a separate publication.

Successive cropping of existing mulched beds is a good practice that makes effective use of polyethylene mulch, soil fumigant, and unused (residual) fertilizer. If fertilizers were properly managed for the first crop, then negligible amounts of fertilizer should remain in the beds for the double crop. Double cropping, which can also include the practice of rotating vegetable crops with non-vegetable cover or forage crops, takes full advantage of the residual nutrients "left over" from the previous crop.

Working Definition

Double cropping is the practice of successive planting on existing plastic or organic mulched beds.

Pre-plant - Things to Do

- Be observant for any nutrient deficiencies in the first crop so they can be corrected before the double crop.
- Take a representative soil sample in the bed taking into account the location of the fertilizer bands applied to the first crop.

Fertilization - Things to Do

- Apply an amount of nitrogen equal to the double crop's own nutrient requirement as long as nitrogen was not applied in excess of the nutrient requirement for the first crop.
- Determine the potassium requirement of the second crop by soil testing. Otherwise, apply an amount of potassium equal to the crops nutrient requirement.
- Use either drip irrigation or an injection wheel to apply the fertilizer.
- Inject micronutrient only if certain deficiencies are anticipated.

1. This document is HS908, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: January 2003. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu>.

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- Inject small amounts of phosphorus by injecting phosphoric acid through the drip system if needed.

Commercial Vegetable Crop Nutrient Requirements in Florida, SP177, Fla. Coop. Ext. Ser., IFAS, Univ. of Fla. <http://edis.ifas.ufl.edu/CV001>

Things to Avoid: Potential Pitfalls

- Do not exceed fertilizer recommendations for the first or second crop.
- Do not add extra fertilizer when planting the first crop with the idea that this fertilizer will aid growth of the second crop.
- Be sure to address needed soil fumigation between crops to assure fertilizer will be utilized by a healthy second crop.
- Do not allow beds to dry between the two crops because it may be difficult to re-wet the shoulders.

Operation and Maintenance Issues

Maintain soil moisture by drip irrigation in between removal of the first crop and planting of the second crop. Small amounts of water applied on a regular basis will help maintain adequate soil moisture, thus facilitating new plant survival.

Other Considerations

- Consider using drip irrigation. Nitrogen and potassium can be readily injected through the irrigation system to meet the nutrient requirements of the crop.
- Consider applying white spray paint to black plastic mulch in the fall to help reduce radiant heat and reduce the risk of plant burn.

Additional Readings

Soil and Fertilizer Management for Vegetable Production in Florida, HS711, Fla. Coop. Ext. Ser., IFAS, Univ. of Fla. <http://edis.ifas.ufl.edu/CV101>

Mulching, HS715, Fla. Coop. Ext. Ser., IFAS, Univ. of Fla. <http://edis.ifas.ufl.edu/CV105>

Commercial Vegetable Fertilization Principles, Circ. 225E, Fla. Coop. Ext. Ser., IFAS, Univ. of Fla. <http://edis.ifas.ufl.edu/CV009>