

MEDIA AND CONTAINERS FOR GREENHOUSE SOILLESS GROWN CUCUMBERS, MELONS, PEPPERS, AND STRAWBERRIES

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Greenhouse vegetable crops can be grown in many types of soilless media if proper irrigation and fertilization is provided. Soilless-grown crops in Florida are grown mainly in perlite, however, pine bark, coconut coir, and peat mixes are media frequently used because of their satisfactory aeration porosity and water holding capacity, physical properties which are important for plants grown in various types of containers. The purpose of this work was to determine the effects of various types of media and containers on yield of various greenhouse vegetable crops. Type of media (medium perlite, coarse perlite, pine bark) had no significant effect on fruit yield of 'Beit Alpha' cucumbers grown in 12 L pots. Average fruit from plants grown in pine bark weighed less than fruit grown in either medium or coarse perlite due to shorter fruit lengths. Drainage was not different among the three media types regardless of greenhouse environmental changes. In a similar experiment with 'Galia' muskmelons three different media and two types of containers were compared. Fruit number, weight, length and width were similar regardless of media or container type used. Peppers were grown in 12 L nursery pots containing pine bark, coarse perlite or a peat-perlite-vermiculite mix (60-20-20%). Fruits from pepper plants grown in perlite had lower percentages of cracking (by number) than fruits from plants in pine bark or peat mix. Plants grown in perlite and pine bark responded with greater percentages of marketable fruit yield (by weight) when they were irrigated with 74 mL compared to 37 mL per event. The volume of solution delivered per event did not affect the percentage of marketable fruits in plants grown in peat mix. Plants grown in perlite and pine bark had lower percentages of blossom-end rot (by number) than plants grown in peat mix. The type of media did not affect fruit set, total number of nodes per plant, or stem length. Two kinds of plug strawberry transplants were grown in three different soilless media and three different growing systems. Growing system influenced early/mid-season yields from 2.5-month-old plugs, while it had no effect on the yield from 4-month-old plugs. Plants grown in perlite produced a higher marketable fruit number and fruit weight per plant compared to pine bark and mixture of 2 peat:1 perlite regardless of growing system or plug type. For total yield, plants grown in a perlite mix produced similar yields in all three growing systems. However, plants grown in perlite and pine bark produced higher yields in "polyethylene bags placed on PVC gutter" as compared to "Polygal troughs and "polyethylene bags kept on the ground". Although perlite is the most commonly used media in Florida, various vegetable crops could be grown in pine bark, a low-cost, easily available byproduct of the state's wood industry. The price of coarse perlite per m³ is about \$40; local mills sell pine bark for \$8 per m³. Peat mixes, such as that used in this experiment, cost about \$55 per m³.