Economical, nonpolluting solutions to greenhouse growing found

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A recent study of an ancient growing medium has implications for advancing growth and yield of greenhouse crops grown in soilless conditions.

Greek research scientists Dr. George Gizas and Dr. Dimitrios Savvas recently conducted trials of four grades of pumice to determine the most effective particle size for growing ornamental plants and vegetables in soilless conditions. Pumice, an inert mineral of volcanic origin, has been used for centuries as a growing medium. Readily available in many countries including Italy, Greece, Israel, and Iceland, pumice is relatively inexpensive and can be disposed of without harming the environment.

Gizas and Savvas conducted four trials in heated greenhouses using gypsophila (commonly known as baby's breath), rose, cucumber, and lettuce using different grades of pumice. In each experiment, pumice grades were tested with two growing systems—pots or bags. To assess the growth and yield of each treatment, particle size and moisture retention were also determined.

The trials clearly showed that the most balanced and safe type of pumice is 0-8 millimeters, while the best cultivation method involves using pumice in pots higher than 15 centimeters. Gypsophila and cucumber responded with higher yields when grown in pots filled with the two finest pumice grades, while plants grown in bags resulted in poor yields regardless of the grade of pumice used.

Dr. Savvas, Director of the Faculty of Agricultural Technology at the Agricultural University of Athens, noted that greenhouse growers will see benefits from the study quickly. "The industry, specifically the enterprises involved in the production, standardization and distribution of pumice in the market, will benefit within one year by promoting the most suitable type of pumice and providing advanced know-how to interested growers", Savvas stated.

Source: American Society for Horticultural Science