Urban Farming Program Demonstrates Sustainable Practices for Increasing Local Food Production

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Orange County, FL, is rapidly urbanizing with a population of 1.2 million. It had a long tradition of diverse agricultural production until recently. In 1998, 20,000 acres of local vegetable production was shut down due to concerns about phosphorus-laden water discharges into Lake Apopka. The county moved overnight from a net exporter to an importer of vegetables. The educational objectives of the Urban Farming Extension Education Program are to identify, demonstrate, and encourage the adoption of sustainable agricultural production methods that can be used in and around urban centers to take advantage of local markets. The program focuses on farmers, market gardeners, and those interested in becoming small farmers. Activities and teaching methods over the last 3 years include research/demonstrations, exhibits, seminars and workshops, tours, TV and web videos, as well as journal, fact sheet, and newsletter articles. An example is Figure 1, which was used in several journal articles and a fact sheet to describe the sustainable production of nitrate nitrogen from a fish feed source using nitrifying bacteria and the process of nitrification. Alternative production systems were built and demonstrated at the Extension Exploration Gardens, including four floating raft hydroponic systems, a solar-powered nutrient film technique (NFT), hydroponic system, and an aquaponic (vegetable and fish co-production) system. An aquaponic video was filmed on site and professionally edited at Orange TV studios. The video aired in Jan. 2013, with an estimated 450,000 viewers per month. It was presented at the AGRITunity Conference 2013 Aquaponics Workshop and posted under the Small and Urban Farms link at the Extension website (http://orange.ifas.ufl.edu/). Ninety-six percent of Aquaponic Workshop attendees reported a gain in knowledge about aquaponics and there was an 18% increase in pre- and post-test scores. Publications produced during the period were viewed widely by state and national audiences. Annual Urban Farming Workshops averaged attendance of 117. Post-program survey results indicated an average of 98% satisfied or very satisfied with program content and 92% reporting they will be more efficient and change growing practices to save time or money as a result of the knowledge gained. The Homegrown Food Coop in Orlando is reporting local food producer participation increasing from 5 to 60 producers and membership in the Coop increasing from 10 to 800 members over the last 5 years. Impacts for local food hubs and producers are significant and are expected to be reflected in the 2012 USDA Census of Agriculture data as increases in number of local farms and farm produce sales. This program could be implemented in other counties regardless of population size since the techniques apply to a wide audience, including home gardeners and those interested in reducing water and fertilizer inputs to produce food.

Fig. 1. Nitrogen cycle in aquaponics.

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