

Development of a Short Course on Urban and Peri-Urban Food Production in

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Abstract

Urban and peri-urban food production is a tool to reduce poverty, malnutrition, unemployment, but also improve self-esteem and skill development among more positive outcomes. In Greece, many farms are peri-urban, and the involved farmers produce fruits and vegetables for local distribution. Also, many individuals practice fruit and vegetable production in an urban environment without any expertise. However, there is no specialization or field of studies or specialists in Urban Food Production. Therefore, a need was identified for the development of a short course on Urban and Peri-Urban Food Production that would provide applicable knowledge for managing in an environmentally friendly way urban vacant lots and peri-urban agricultural land to intensively produce vegetables, aromatic/medicinal plants, and fruits. In 2017 as part of the Greek Diaspora Fellowship Program, we developed and delivered a two-weekend long short course. Our main goal was to develop an undergraduate and continuing education curriculum for small-scale local food production. Our target audience were undergraduate students in Agriculture, agriculturists, professional farmers and farmworkers, unemployed citizens, and hobbyist gardeners. The topics covered were: Basic characteristics of Urban Food Production; Natural resource availability and use for urban food production; Community gardens; Open field vegetable growing in the peri-urban environment and the garden; Protected vegetable production for local consumption; Local small-scale fruit tree production; Plant protection in the urban and peri-urban environment; Harvest and handling locally produced fresh commodities. Each participant was required to develop a short project on Urban or Peri-Urban farming with different case studies including private gardens, schoolyards, and profit-oriented peri-urban cases among others. Participants evaluated the course very positively pointing out that knowledge on this subject was well delivered and very useful. The course was offered two weekends in March 2017 at the University of Thessaly, Greece and had more than 80 participants. Videos from all lectures were made available at the University's web site. This paper will discuss how the short course was developed and delivered as well as students' evaluations and future needs.

Keywords

continuous education, local food production, municipal vegetable gardens

Development of a short course on urban and peri-urban food production in Greece

ABSTRACT

Urban and peri-urban food production is a tool to reduce poverty, malnutrition, and unemployment and improve self-esteem and skill development, among more positive outcomes. In Greece, many farms are peri-urban, and the involved farmers produce fruits and vegetables for local distribution. Also, many individuals practice fruit and vegetable production in an urban environment without expertise. Additionally, there is no specialization, field of study, or specialists in Urban Food Production. Therefore, a need was identified for the development of a short course on Urban and Peri-Urban Food Production that would provide practical knowledge for managing in an environmentally friendly way urban vacant lots and peri-urban agricultural land to intensively produce vegetables, aromatic/medicinal plants and fruits. In 2017 as part of the Greek Diaspora Fellowship Program, a two-weekend long training short course was developed with the goal of providing undergraduate and continuing education curriculum for small-scale local food production. The target audience was undergraduate students in Agriculture, agriculturists, professional farmers and farmworkers, unemployed citizens, and hobbyist gardeners. The topics covered were: Basic characteristics of Urban Food Production; Natural resource availability and use for urban food production; Community gardens; Open field vegetable growing in the peri-urban environment and the garden; Protected vegetable production for local consumption; Local small-scale fruit tree production; Plant protection in the urban and peri-urban environment; Harvest and handling locally produced fresh commodities. Each participant was required to develop a short project on Urban or Peri-Urban farming with different case studies, including private gardens, schoolyards, and profit-oriented peri-urban cases, among others. Participants evaluated the course positively, pointing out that knowledge on this subject was well delivered and very useful. The course was offered two weekends in March 2017 at the University of Thessaly, Greece, and had 84 participants. Videos from all lectures were made available on the University's website. This paper will discuss how the short course was developed and delivered, as well as students' evaluations and future needs.

Keywords: continuous education, local food production, municipal vegetable gardens

BACKGROUND

A curriculum on Urban and Peri-Urban Food production was developed with the support of the Greek Diaspora Fellowship Program (GDFFP). GDFFP is funded by a grant from the Stavros Niarchos Foundation (SNF) and the Institute of International Education (IIE). The program is administered in collaboration with the Fulbright Foundation in Greece. GDFFP is a scholar exchange program for Greek universities to host Greek scholars from the diaspora in the areas of collaborative research, curriculum co-development, and/or graduate/undergraduate student mentoring and teaching. The program is designed to help avert Greece's brain drain and develop long-term, mutually beneficial collaborations between universities in Greece and the United States, and Canada. During the program, SNF and IIE supported 123 fellowships over four selection cycles that created collaborative, mutually beneficial engagements between Greece and the academic diaspora. The University of Thessaly was one of the 12 Greek Universities that participated in the program, and Dr. Pliakoni from Kansas State University was one of the 21 scholars that got the fellowship that year. The fellowship supports several areas, from public health to chemical

genomics research and from the English language curriculum to continuing education studies in urban food security. Our project focused on Curriculum Co-Development in Undergraduate and Continuing Education Studies with the Subject: Urban and Peri-Urban Food Production for Food Security and Human Health. The goal was to develop a curriculum with practical knowledge (lacking at the moment) for managing vacant urban lots and peri-urban agricultural land to intensively produce vegetables, aromatic/medicinal plants, and fruits with the ultimate goal of addressing the needs of students, professionals, and prospective farmers to better guide and manage urban and peri-urban horticultural production.

The topic was chosen because, during recent years, staff of the host department has been involved in research on fruit, vegetable, and aromatic/medicinal commercial crop production and handling, and on urban environment management in school yards and for noise reduction. Many farmers practice peri-urban horticulture for local food sales and Farmer's Markets in Greece. Also, many hobbyists practice fruit and vegetable production in an urban environment without any expertise. These professionals and hobbyists do not have the proper guidance from professional horticulturists to intensify production and improve handling due to a lack of related knowledge. The subject of urban horticulture for food production is not taught in any Greek University. So, the horticulture graduates haven't received information regarding the special conditions and management required and the possibilities/risks involved in growing in an urban environment where people live and work. Because of the reasons mentioned above, Dr. Pliakoni proposed to organize and participate in a short course specializing in Urban Food Production. Also, she was able to help the departmental staff initially develop a course curriculum on Urban and Peri-Urban Food Production Systems, among other possibilities.

INTRODUCTION

It is predicted that by 2050, 7 billion people will live in cities worldwide, spanning a landmass equivalent to China (Source: United Nations Department of Economic and Social Affairs). The people living in these cities are fed by a continuing stream of trucks, trains, and cargo ships that bring food into urban areas, all of which are susceptible to insecurity as a result of natural disasters, energy shortages/crises, political disputes, and other policy-related issues. As cities across the globe continue to grow, the role of urban and peri-urban agriculture will be increasingly important as a way to improve food security for people living in urban areas.

Food security is defined as "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (Skoet and Stamoulis, 2006). With the recent economic crisis in Greece, new initiatives for sustainable development like 'Municipal vegetable gardens' have appeared as innovative solutions to help vulnerable groups (low-earners, low-pensioners, single parents, etc.) against urban food scarcity. Only recently (since 2012), municipal gardens started to appear in cities around Greece. However, there is no specialization or field of studies or a specialized professor in Urban Food Production in Greece. Even more, many small farms are peri-urban, and the involved farmers traditionally produce fruits and vegetables for local distribution and Farmers' Markets without any organized education.

Thus, the curriculum on Urban and Peri-Urban Food Production was designed to develop practical knowledge for managing, in an environmentally friendly way, vacant urban lots and peri-urban agricultural land to intensively produce vegetables, aromatic/medicinal plants, and fruits. Urban and peri-urban food production means intensive use of small lots of land, intensive and environmentally correct use of inputs (only the ones permitted in an urban environment), and shorter farm-to-fork food chains (i.e., more handling skills by the farmer and more consumer's

dollar for food going to farmer). This curriculum was developed to educate young students in Horticulture and professional horticulturists, but also prospective and young farmers owning small parcels of land around cities or interested in being involved in urban and peri-urban horticultural production.

The goal of the curriculum was to address the needs of the above students, professionals, and prospective farmers to better guide and manage urban and peri-urban horticultural production.

DISCUSSION

Short course overview

The short course on Urban and Peri-Urban Food Production for Food Security and Human Health took place on two consecutive weekends (Friday, Saturday, and Sunday) at the central amphitheater of the Department of Agriculture, Crop Production and Rural Environment of the University of Thessaly, Volos, Greece.

Eleven different topics (Table 1) were covered through fourteen 110 min lectures. This course was a collaboration of four academic institutions (Kansas State University, U.S.; University of Thessaly, Greece; Aristotle University of Thessaloniki, Greece, and Agricultural University of Athens, Greece), one for-profit organization (Argirakis), and one non-profit organization (Perka).

Ten different instructors (Table 2) were involved with a variety of areas of expertise covering all short course topics.

Table 1. Short course instructors and their area of expertise

	Instructors	Areas of expertise
1	Eleni Pliakoni, PhD., PI	Urban Food production and postharvest handling
2	Nanos George, PhD., PI	Pomology
3	Argirakis Vaios	Horticulturist, farmer counseling
4	Athanasίου Christos, Ph.D.	Entomology
5	Karagiorgas Antonis	Urban and peri-urban production
6	Katsoulas Nikolaos, PhD.	Agricultural Constructions – Greenhouses
7	Lykas Christos, Ph.D.	Floriculture, Garden specialist
8	Papadopoulos Nikolaos, Ph.D.	Applied Entomology
9	Tsouvaltzis Paulos, PhD.	Vegetable production
10	Tsitsiyiannis Dimitrios, Ph.D.	Disease management

Table 2. Short course topics delivered.

1. Urban Food Production: basic characteristics
2. Urban and peri-urban environment
3. Community gardens in Greece and the world

4. Management of natural resources for small-scale food production
5. Urban and peri-urban vegetable production
6. Greenhouse and screen house vegetable production
7. Small farmer cooperative organization /amateur gardeners: requirements and management
8. Urban and peri-urban fruit production
9. Disease management in selected fruit and vegetable species
10. Pest management in selected fruit and vegetable species
11. Fruit and vegetable harvest and postharvest handling for local consumption

Learning outcomes are presented below:

1. Understand the origins of urban agriculture and why they are needed in the context of current events and contemporary issues.
2. Define urban agriculture
3. Understand the many forms urban agriculture can take
4. Understand the pros and cons of fruit and vegetable production in an urban and peri-urban environment
5. Discuss how to decide what to grow and produce in an urban environment
6. Be aware of organic production and sustainable farming practices in an urban environment

Course examination

Besides the lectures, 21 take-home case studies were designed and given by the end of the first weekend for participants to apply the delivered knowledge. These case studies included peri-urban farm management for different purposes, school a, and home garden cases, etc. We had discussion periods for clarification on the project content and requirements. Projects were completed by the participants as a partial requirement of the course. These projects were returned two days after the end of lectures and examined by professors E. Pliakoni and G. Nanos.

Course evaluation

At the end of the lectures, (at the end of the second weekend), an evaluation was distributed to the participants, and 77 evaluation sheets were completed and analyzed. The results of the evaluation were as follows:

Course evaluation (Fig 1):

Question 1: Course usefulness: 94% of participants thought it was useful

Question 2: Course completeness: 88% of participants thought it was complete

Question 3: The short course format: 81% of participants liked the format

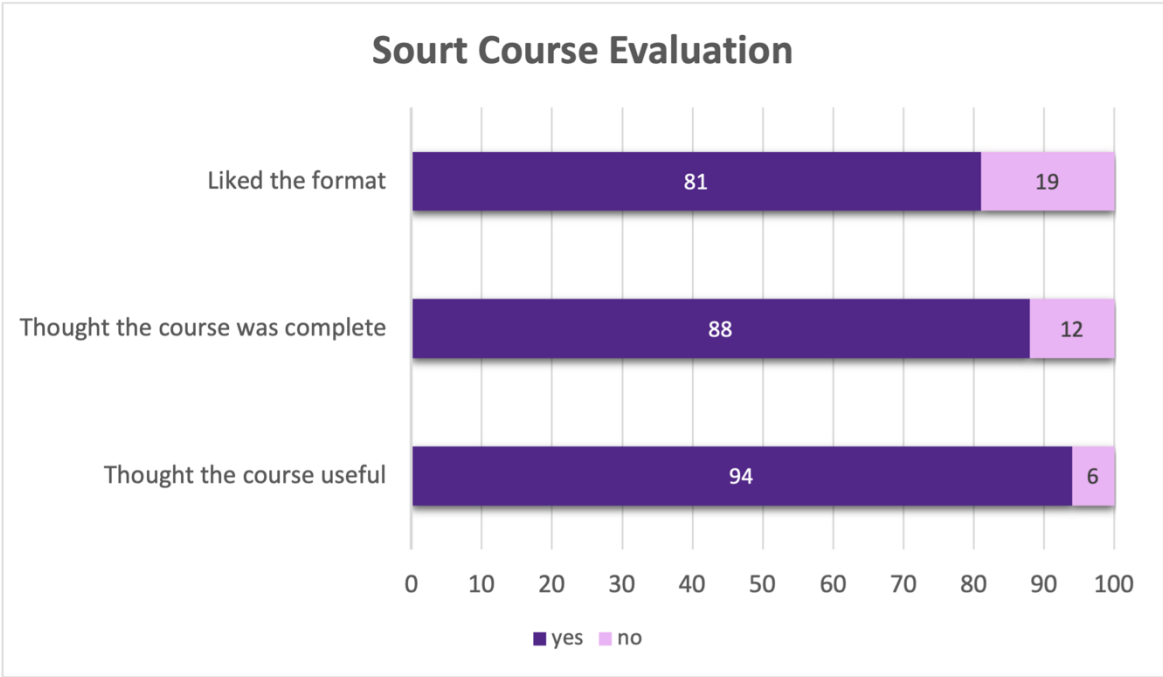


Figure 1. Course evaluation

Case Study Evaluation (Fig. 2):

Question 4: Course examination projects: clear requirements? 83% responded positively

Question 5: Course examination projects: usefulness: 84% of participants responded positively

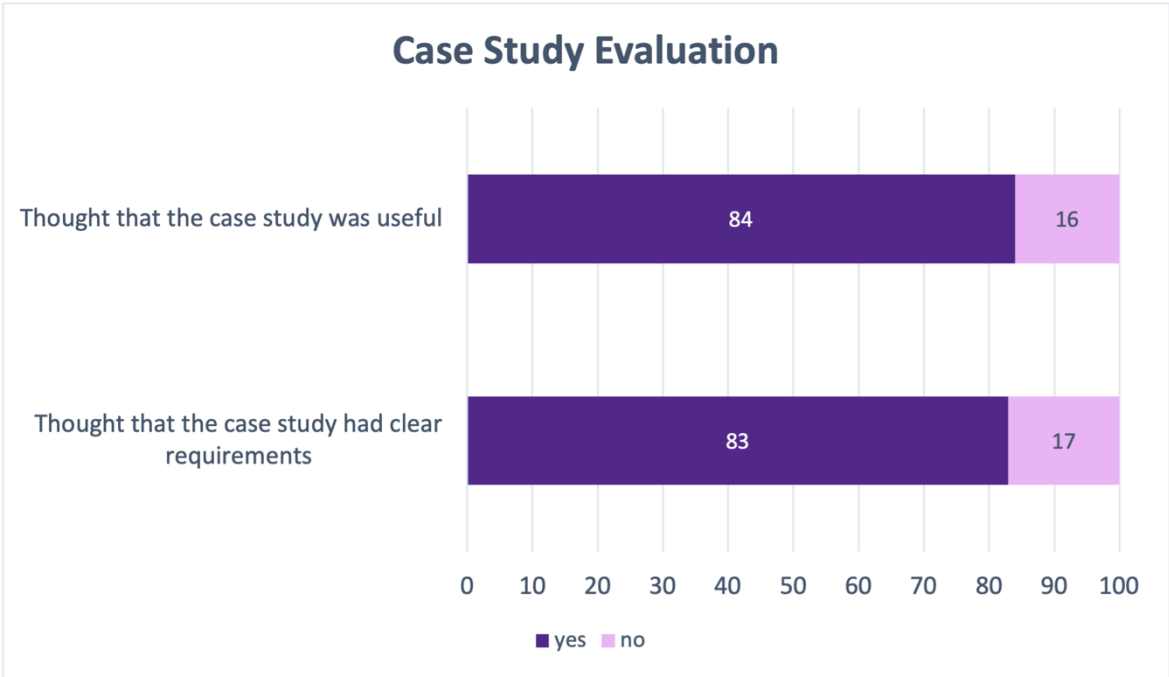


Figure 2. Case Study Evaluation

There were also spaces for additional comments on the course content and the course examination method.

About the course content, comments included: more practical information would be useful, visits to urban farms would be useful, hands-on experience (development of vegetable gardens and all related practices, activities in open city places), more information about irrigation and plant nutrition was needed, no need for lots of general-basic information, more information about vegetable and grapevine cultivation, more specialized videos and pictures on all matters (construction, layout, plant species and material to be used, substrates, produce handling, etc.).

About the course examination, comments included: normal examination tests could be useful, possibly with multiple choice questions, tests as a questionnaire to be completed after each course module, more pictures to be examined by the participants for structure, layout, problems, etc.

CONCLUSIONS

The course was developed as an intensive weekend short course, an innovative way of continuous education for Greek Universities. A series of experts in scientific areas from around Greece and the Greek Diaspora fellow from the U.S. organized and delivered the lectures with material developed especially for urban and peri-urban horticulture for the first time in Greece. More than 80 participants fully participated in person in the course. Course evaluation was very positive, pointing out that knowledge on this subject was well-delivered and very useful. Videos from all lectures were made available on the University website for all other interested persons.

ACKNOWLEDGMENTS

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Literature cited

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