

## **A Survey Concerning Organic, Integrated and Conventional Agriculture in Greece**

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**Abstract.** During the last years, we see a turn of consumers in the search of qualitative and certified products. This tendency has been extended, and in particular with geometrical progress, and in the products of rural origin. People participating in the agricultural area, such as farmers, processors, sellers and others, trying to follow this new trend become skeptical about the agricultural method that will follow. For these reasons, this paper tries to record the problems and solutions of the three agricultural systems (organic, integrated and conventional), through interviewing experienced, relative to agriculture persons, and by creating a questionnaire capable of unveiling crucial matters of the agriculture in Greece. The results of the interviews gave a lot of information that were incorporated in the questionnaire, with the acceptance of organic agriculture as the best agriculture system for Greece to be the most valuable. Additionally, based on the results of the questionnaires, evaluation and classification of the problems and critical control points of each of the three agricultural systems, was managed. In conclusion, this research helped in bringing to the surface the real problems, solutions and prospects of organic, integrated and conventional agriculture.

**Keywords:** organic, integrated, conventional, agriculture, survey.

### INTRODUCTION

During the last years, consumers tend to ask for more qualitative and certified products. This tendency has been extended with geometrical progress in the agricultural products as well. Simultaneously we observe a continuously increasing call of social teams, so much in Greece what worldwide, for respect and protection of the environment. Nowadays, the significance of environment constitutes one of the most popular subjects of discussion in theoretical and practical level, with all governments speaking for "Green development".

Consumers are increasingly giving more attention to the contribution of agriculture to sustainability, climate change, food security and development, biodiversity, animal welfare and even to water scarcity (European Commission, 2008). Also, they demand from all the stakeholders in the food chain, to apply as high as possible quality standards in order to ensure the safety, hygiene and nutritiveness of the produced agricultural products. (Kaltsis *et al.*, 2005)

The increasing concerns for the environmental, economical and social results of the chemical depended Conventional Agriculture, have led many farmers and consumers to

alternative practices and systems, which will render the agriculture more sustainable. (Reganold, 1995).

The intensification of agriculture, based mainly on increasing inputs of fertilisers and pesticides, is considered as the major cause of a crisis, causing pollution of the environment, flattening of landscapes and decline of flora and fauna. On the other hand, it leads to increasing agricultural surpluses, which are forcing policy-makers to switch from a protective to a more market-oriented agricultural policy. Consequently, farmers all over the world have to face the snowball effect of falling prices, decreasing incomes and threatening unemployment. (Vereijken, 1989).

## MATERIALS AND METHODS

For the research two different methods were used. First a number of interviews from persons involved in agriculture, such as farmers, members of organizations (certification or others), retailers and even journalist, was taken. Then the results of the interviews were used for creating the layout of the questionnaire that was used as the second method of the research. Both methods took place in 2009, and more specifically the interviews lasted 3 months (January to March) and the questionnaire 7 months (May to November).

The interviews consisted of five open-type questions<sup>1</sup> concerning the three different systems of agriculture (organic (OA), integrated (IA) and conventional (CA)). More specifically, the questions were the following:

- Relations and differences between the three agricultural systems (organic, integrated and conventional).
- Problems (critical control points) the three agricultural systems.
- Solutions for the aforementioned problems.
- Evaluation of the three agricultural systems.
- The future of the three agricultural systems.

The participants were chosen according to their long experience in the agriculture and certification area. Interview results were grouped and analysed, in order to include them to the structure of the questionnaire. In total 20 persons accepted to participate in the interview

On the other hand, the questionnaire included a variety of questions categorized to: a) personal data, b) cultivation, c) laboratory analysis, d) inspection, e) economics and general questions (organic, integrated and conventional agriculture). In the survey participated 100 persons from all the agricultural chain (farmers, retailers, processors, agriculturists and others), and from all three agricultural systems.

The whole procedure of the research can be summarized to the following steps:

- Selection of the most suitable questions for an open interview.
- Selection of the most competent persons for the individuals for the interviews.
- Establishing the interviews.
- Structure of the questionnaire receiving including the answers of the interviews.
- Selection of the target groups that will participate in the completion of the questionnaires.
- Completion of questionnaires.
- Recording of the answers and transfer in electronic form.
- Analysis of the questionnaire answers with the use of a statistical software (SPSS).

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<sup>1</sup> All questions both in interviews and questionnaires concern the situation in Greece.

## RESULTS AND DISCUSSION

During the interviews numerous of answers were recorded, some of which were repeated. More specifically for the question “*Relations and differences between the three agricultural systems (organic, integrated and conventional)?*” the answers were summarised in the following:

- OA is a sustainable system, in contrary to IA which is a controlled system.
- OA is the most environmental friendly system of all the three, while CA is the least.
- OA products are the most healthy and safe, while CA products are not neither healthy nor safe.
- OA and IA have certified producers, in contrast to CA.
- IA producers function as a team.
- IA has the best monitoring by the advisers.
- CA, in contrast to OA and IA, has Massive inputs of chemical fertilizers and pesticides.
- In CA there is no legal frame or quality system.

The problems of each system according to the answers to the next question to the interviewers (“*Problems of the three agricultural systems?*” were the:

- Lack of education both from the producers and agronomists, for all three systems.
- Lack of organished distribution channels, for OA.
- Lack of products promotion from the state, for all three systems.
- OA production only for the subsidy and not for the sales.
- Lack of advisory directives for IA.
- Bureaucracy in IA.
- Enormous external costs of OA.
- Uneconomic and anti-environmental character of CA.

In addition, the interviewers were asked to propose solutions for the aforementioned problems, through the third question “*Solutions for these problems?*”. Their answers gave us a lot of different possible solutions, able to decrease or even solve these problems, and were:

- Creation of producers’ registry by specialty, for all three systems.
- Creation of cooperatives and producers groups, for all three systems.
- Education of both producers and agronomists, for all three systems.
- Promoting products to people everywhere (Greece and abroad), for all three systems.
- Informing the consumers, for all three systems.
- Creation of quantity certificate for OA.
- Establishing a unified and reliable traceability system, for OA.
- Convert a large share of national products to organic (eg. Cheese, oil, raisins, etc.).
- Vertical integration of production, for IA and CA.
- Observance of the rules of Good Agricultural Practice (*GAP*), for CA.
- Redesign of rural policy at national level, for CA.

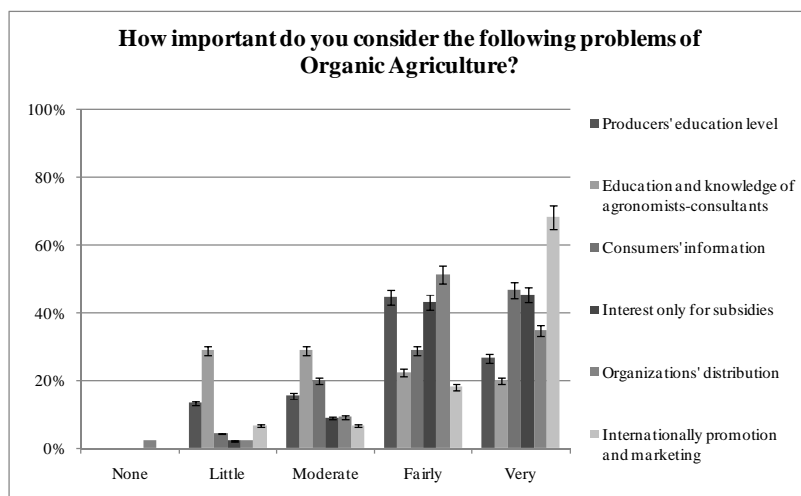
Next, the interviewers were asked to evaluate these three agricultural systems (“*How do you evaluate the three systems?*”). The vast majority rated OA as the best, followed by the IA and last the CA, a rating that is laso verified by the conclusions of Pacini *et.al.* (2002), about the efficiency of OA. This assessment is because CA does not even implement the GAP and IA does not have any framework, while OA has EU and national detailed legislation.

Moreover, the choice of the appropriate system has to do with the cultivation and not the area in which this cultivation belongs to. Concluding, according to some interviewers, the ideal would be a combination of OA and IA, in order to ensure the quality of the products throughout their course from the field to consumer's plate.

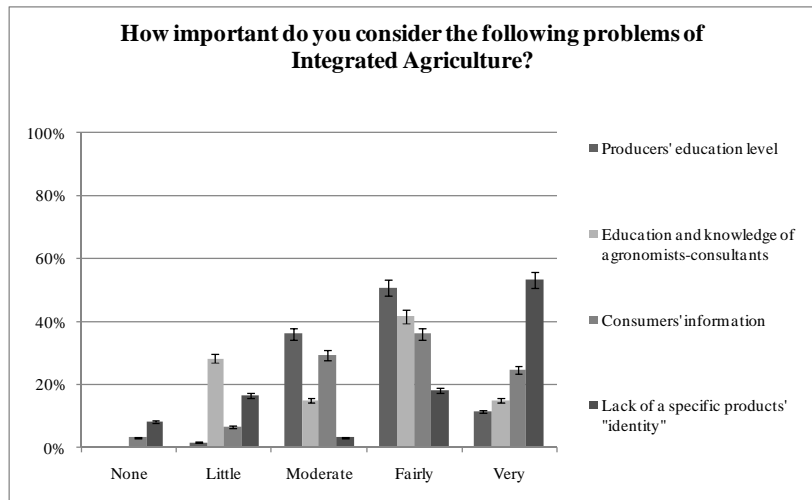
The final question was about the future of the three systems (“How *do you imagine of their future?*”). Most of the interviewers predict stagnation or even contraction of OA in Greece both in production and consumption level. This is due to the high prices, economic crisis and dependency on subsidies. Regarding the future of IA the opinions are divided. Some believe that it will be developed more than the other two systems, since it will absorb a large number of people from OA after the end of subsidies, while other believe that it will continue to be the precursor of OA. On the other hand, a number of the interviewers believe that CA will stop to exist in its present form, while others believe that will continue to be high on the preferences of the producers.

Based on the answers from the interviews a questionnaire was created. The answers that were recorded were grouped and analyzed with the help of statistical software (SPSS). The answers to the questions “*how important do you consider particular problems of each agriculture system*” (Graph. 1Graph. 2Graph. 3) can be summarized to the following:

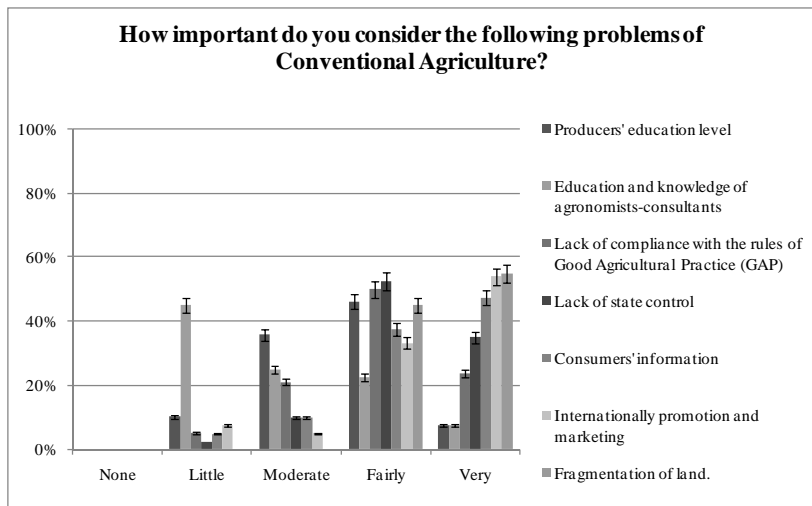
- Most of the participants consider International promotion and marketing of organic products, lack of consumers' information and subsidies dependence, as the most challenging problems of organic agriculture in Greece.
- Concerning integrated agriculture, participants consider as most important problems the low producers' educational level as well as the lack of information to the consumers.
- On the other hand, according to participants opinions, conventional agriculture is beset mostly by the fragmentation of the land, the lack of proper international promotion and marketing of the products and the absence of the state control.



Graph. 1. Answers to the question “*How important do you consider the following problems of Organic Agriculture?*”.



Graph. 2. Answers to the question “How important do you consider the following problems of Integrated Agriculture?”.

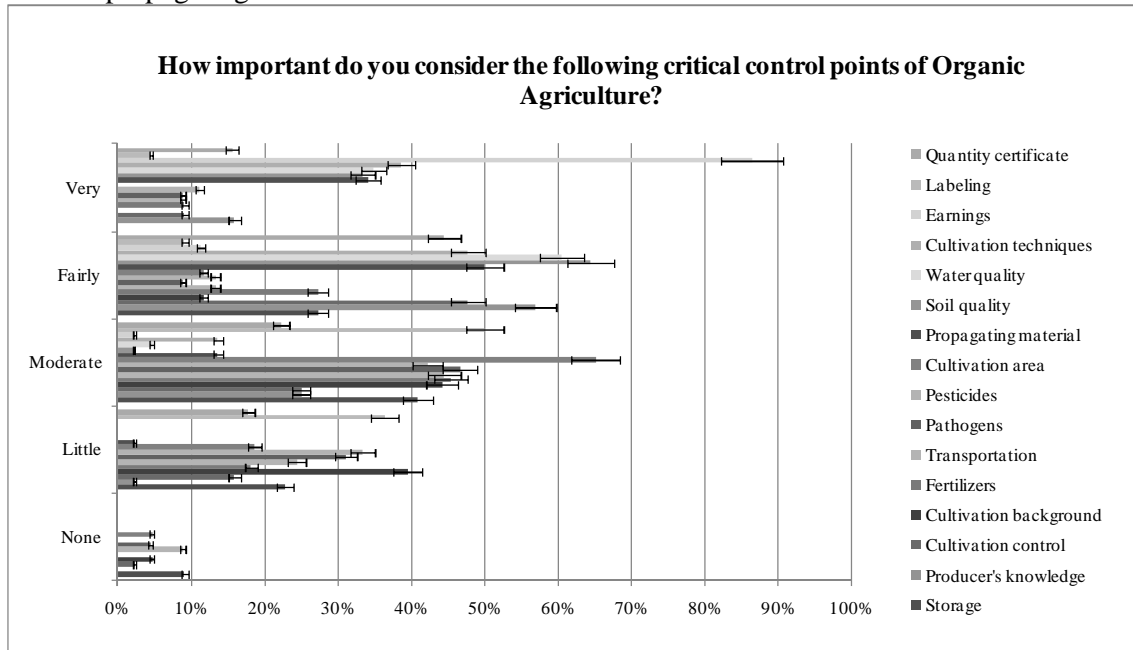


Graph. 3. Answers to the question “How important do you consider the following problems of Conventional Agriculture?”.

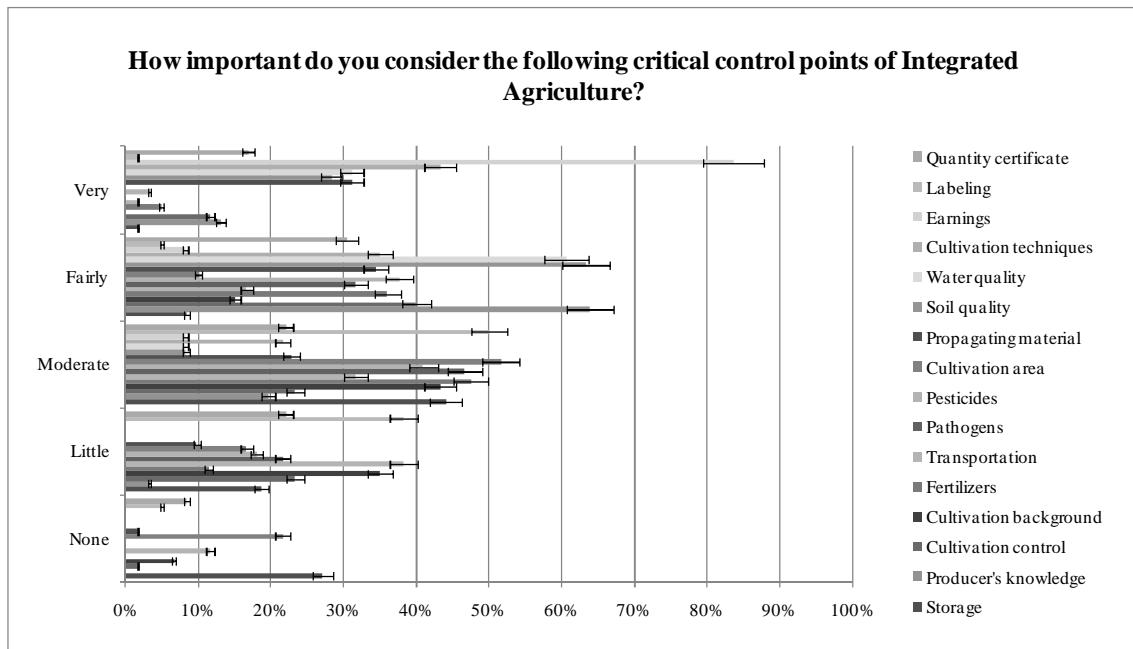
The answers to the questions “How important do you consider particular critical control points of each agriculture system”, are presented in Graph. 4, Graph. 5, Graph. 6. Most of the participants consider that the most important critical control points for all three systems are:

- Producers' knowledge.
- Cultivation control.
- Soil quality.
- Water quality.
- Cultivation techniques.
- Earnings.

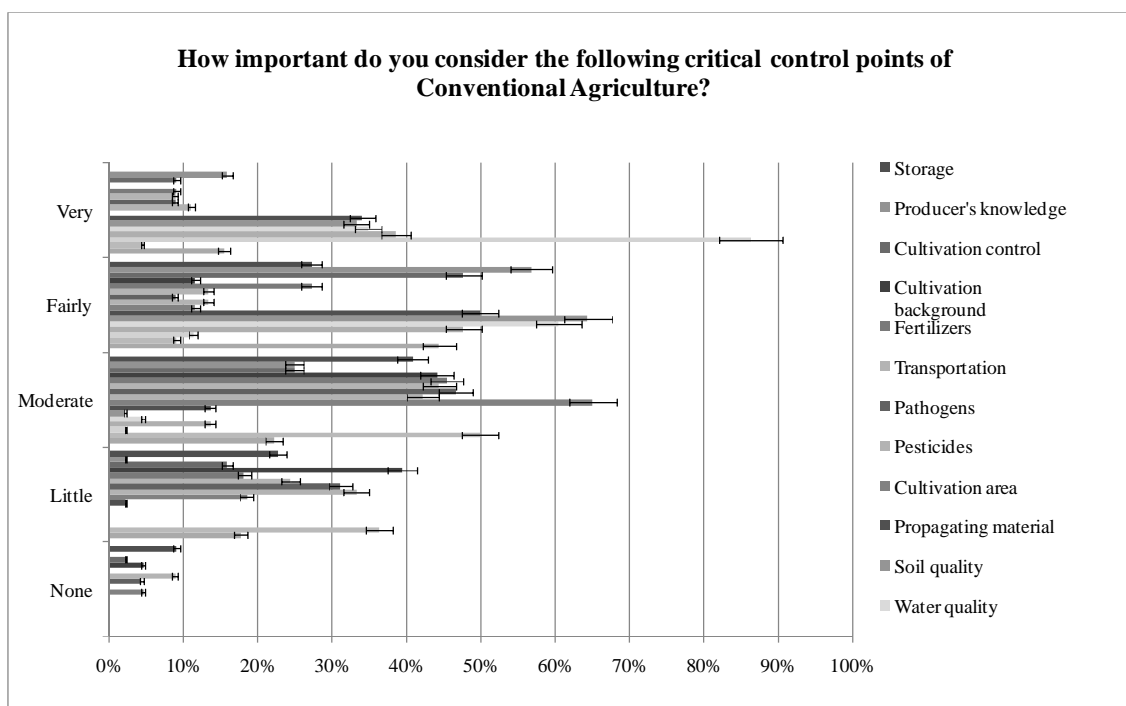
In addition, equally important critical control points for OA, always based on the participants answers, are the propagating material and quantity certificate, while for CA are also the propagating material as well as the fertilizers.



Graph. 4. Answers to the question “How important do you consider the following critical control points of Organic Agriculture?”.



Graph. 5. Answers to the question “How important do you consider the following critical control points of Integrated Agriculture?”.



Graph. 6. Answers to the question “How important do you consider the following critical control points of Conventional Agriculture?”.

## CONCLUSIONS

After analyzing the results from both the interviews and the questionnaires, valuable information about organic, integrated and conventional agriculture in Greece, from the perspective of the directly involved persons, were unveiled. More specifically, the relationships, the problems and the solutions, as well as the prospects of the systems came to the surface. In addition, the most important critical control points, based on the questionnaires’ results, were recorded. This survey, can be the trigger to elaborate corresponding surveys to other countries apart from Greece.

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