

Legal aspect of hydroponics placement in organic farming system

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Abstract

Hydroponic production increasingly gaining its influence. As non-regulated area, it is necessarily awaiting appropriate legal regulation. Legislative dilemma is intensified through fast technical progress and regionally bounded differences. Regulation and unification of basic hydroponic principles is necessary and should be placed in all stages of modern agricultural policy. Establishing the correct placement of hydroponics in the modern system of agricultural law and clearly defining its position in relation to organic farming should be the main priority.

Key words: soilless culture, law, organic agriculture, legislation

Introduction

Hydroponic production is a method of soilless plant growth, using mineral nutrient solutions (Krese, 1989). The essential feature of hydroponic cultivation techniques is growth of roots in air, water, or in other inert media, by adding specific amounts of nutrients concentrations, necessary for successful growth (Osvald and Kogoj Osvald, 2005).

Main guidance of new legislative policy is to establish a new direction for further development of organic farming with emphasis on environmental protection, biodiversity and higher standards of animal welfare.

Material and methods

Starting chronological overview of hydroponics legal regulations with year 1991 as European Council of Agriculture Ministers adopted Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs (EEC, 1991). It represents a part of common agricultural policy and the closure of process by which organic farming received official recognition of then 15 EU member-states. This regulation covers only plant products, additional provisions for production of animal products were introduced later. Use of genetically modified organisms and products made from them has been explicitly excluded from organic production. Fundamental importance of Council Regulation (EEC) No 2092/91 is creation of a common minimum standards for the entire EU.

Chronological review of acts that followed Council Regulation (EEC) No 2092/91 (www.mkgp.gov.si):

- Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labeling of organic products and repealing Council Regulation (EEC) No 2092/91 (EC, 2007);
- Council Regulation (EC) No 967/2008 of 29 September 2008 amending Regulation (EC) No 834/2007 on organic production and labeling of organic products (EC, 2008a);
- Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for implementing Council Regulation (EC) No 834/2007 on organic production and labeling of organic products with regard to organic production, labeling and control (EC, 2008b);
- Commission Regulation (EC) No 1254/2008 of 15 December 2008 amending Regulation (EC) No 889/2008 laying down detailed rules for implementing Council Regulation (EC) No 834/2007 on

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- organic production and labeling of organic products with regard to organic production (EC, 2008c);
- Commission Regulation (EC) No 710/2009 of 5 August 2009 amending Regulation (EC) No 889/2008 laying down detailed rules for implementing Council Regulation (EC) No 834/2007 regarding the establishment of detailed rules on organic aquaculture animals and seaweed production (EC, 2009a);
- Commission Regulation (EC) No 1235/2008 of 8 December 2008 laying down detailed rules for implementing Council Regulation (EC) No 834/2007 regarding the arrangements for imports of organic products from third countries (EC, 2008d);
- Commission Regulation (EC) No 537/2009 of 19 June 2009 amending Regulation (EC) No 1235/2008 as regards the list of third countries from which they derive some organically produced agricultural products to be marketed in the Community (EC, 2009b) and
- Commission Regulation (EU) No 471/2010 of 31 May 2010 amending Regulation (EC) No 1235/2008 as regards the list of third countries from which they derive some organically produced agricultural products to be marketed in the EU (EC, 2010).

Results and discussion

Council Regulation (EC) No 834/2007 refers on hydroponics only indirectly. Preservation and enhancement of soil life, as well as natural fertility, soil stability and soil biodiversity, prevent and eliminate compaction and erosion, as well as feeding plants primarily via soil, are the basic principles of organic farming. Regulation creates exceptions in a “two-levels” way. First level is based on principle of necessity, applied directly to organic production. Second level is directed in principle of protection, jointed with conservation and prevention of interference in organic production.

Commission Regulation (EC) No 889/2008 highlights need for adequate definitions already in editorials article 3. Following article 4 gives main provisions of European agricultural law, directly related to hydroponic. It is first use of term hydroponic (hydroponic growth), which we unsuccessfully searched in Council Regulation (EC) No 834/2007. This document clearly defines hydroponic growth in relation to organic farming, pointing out that organic plant production's based on nourishing plants primarily through soil ecosystem and therefore hydroponic growth should not be allowed. With this provision, based on principle of prevention, European Union takes indisputable position in matter of hydroponics place in European organic farming system. Article 5 gives additional clarification in hydroponics negation. Organic plant production involves varied cultivation practices and limited use of fertilisers and conditioners of low solubility, therefore these practices should be specified. In particular, conditions for use of certain non-synthetic products should be laid down. With this Regulation EU law takes further distance from hydroponic production. It emphasizes importance of protecting soil and provides detailed requirements for what in hydroponic production, because of the fundamental characteristics of soilless growth, consequently can't be observed.

Second article in main text of Regulation provides basic definitions; in a. part about non-organic and in g. part, there is written definition of hydroponic production; it means the method of growing plants with their roots in a mineral nutrient solution only or in an inert medium, such as perlite, gravel or mineral wool to which a nutrient solution is added. This definition is most appropriate, despite missing a significant measure of certainty, particularly in exposure of the principle of prevention, and a detailed definitions of an inert media, method of production and ways of adding nutritional supplements, since we can't ignore constant upgrade of hydroponic production and its multiple effect on production patterns variations. Article 4 provides fundamental definition of hydroponic production in relation to EU organic agriculture. Basically, it summarises previous article, although different legislative approach is present. Unlike grammatical and teleological based approach, article 4 introduces with exactly written principle of prevention, which clears the ground rule: hydroponic production is prohibited.

With exception of technical references for implementation of Council Regulation (EC) No 834/2007 and provisions relating to import of organic products from third countries, Commission Regulation (EC) No 1235/2008 doesn't contains directly affecting provisions on hydroponic production, but it presents a part of modern concept in regulations system of European organic farming. Nor Commission Regulation (EC) No 1254/2008 nor Commission Regulation (EU) No 471/2010 interferes with hydroponic production directly. Its importance is in term of technical-operative implementation and complementary to aforementioned Regulation.

Prima lex of agriculture legislation in Slovenia is the Agriculture Act. This paper inter alia includes legal grounds of agricultural policy, planning of agricultural and rural development, agricultural policy measures, food safety and quality in all stages of production, protection of consumer interests, and an inspection (www.mkgp.gov.si). It also provides rules for adoption of the National Programme for Agricultural and Rural Development (www.ec.europa.eu/agriculture/rurdev/index_sl.htm) and other agricultural policy measures. Competence to its implement has the Agency of the Republic of Slovenia for Agricultural Markets and Rural Development. Hydroponic is (still) not included.

Completely different regime is found in the US. Unique eating habits, aggressive competition in food industry and economic liberalism of the market are dictating development in different direction. Consequently, excessive efforts of food industry leaders, which would have most benefits of hydroponics in placement in organic agriculture, aren't surprising. Heart of the problem is in size of US market and less systemised and coordinated basic rules. US consumers are willing to deducted an average of plus 15% in buying same type product, marked as "organic". Federal States, each with its own rules (federal regulations), define what is allowed to be labeled as organic and therefore what conditions should be met. For even bigger confusion, in US can be found way too many certification organization. Some of them operate under authority of the central competent, others by the federal government. There are even purely commercial or self-proclaimed entities who's providing certification based only on their own criteria. Actual situation is even worse, because this type of anarchy permits individual producers to try out their luck in effort of getting certificate by different organizations so long, until they finally meet "organic" standards with their product at one of this organizations.

First certificate for organic hydroponic was given in Canada for basil growth in 2003 (Jannasch, 2009). Nevertheless, some organizations, such as Certified Organic Organizations of British Columbia and Demeter (www.eko-kmetije.info/biodar.asp), took negative stand about hydroponic growth taking place in organic farming system. On the other hand, US has allowed certain exceptions in hydroponic growth, placed in The National Organic program (www.ams.usda.gov). Hydroponic and other soilless systems for crop production are limited to the following, categories: (1) production of higher plants that are naturally aquatic species; (2) production of algal organisms such as spirulina (www.chlorellafactor.com) and (3) production systems that utilize compost as a growing media (www.ams.usda.gov). NOP explains generally rearsness of cases certificated as hydroponic organic production. There are individual cases of controlled growth of spirulina in Europe (www.biochlorella.de). In New Zealand e.g., under organic farming, hydroponic is prohibited on national level, same as in United Kingdom. Most divided opinions are certainly in the US. In the State of California e.g. it is possible to obtain a certificate for hydroponic organic production only by using allowed funds for organic production. On the other hand, in the State of Oregon, certificate for hydroponic organic production can not be obtained (www.ams.usda.gov).

Exceptions about organic hydroponic growth in Europe, based in the NOP report, aren't correct. Commission Regulation (EC) No 710/2009 was adopted to supplement Commission Regulation (EC) No 889/2008 by laying down detailed rules on organic aquaculture, animals and seaweed production and exclude them from hydroponic growth chapter and subjected to a different but no less stringent and consistent rules. Particularly surprising is the fact, that reporters overlooked 4th article of editorial text, as well as the 4th article of the main text of Commission Regulation (EC) No 889/2008, and even 13th article of Council Regulation (EC) No 834/2007, which also provides detailed rules, concerning seaweed growth. All these rules represent individual legal regulation that clearly exclude hydroponic growth out of organic farming system and set specific criterias for organic aquaculture animals and organic seaweed growth.

Conclusion

Rapid technological development of agriculture can cause difficulties in precise formulation of legal rules. Hydroponic is no exception. It is necessary to expand existing and adding new rules, whose must be consistent with continuous development and modern techniques of food production.

Long terming, coordination on international level of general agriculture rules and organic farming standards is indispensable for producers protection, quality assurance and consumer safety. Consequently, the gap between economically oriented hydroponic and successively higher organic production criterias will continue to deepening.

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