

Effects of Regulation (EEC) 2078/92 on citrus growing in Calabria (Italy) and the Region of Valencia (Spain)

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Abstract

The aim of this article was to compare the adoption of organic agriculture and integrated pest management practices by citrus growers in Calabria (Italy) and the Region of Valencia (Spain) after the introduction of Regulation (EEC) 2078/92. Citriculture is of great social and economic importance in both these regions. The study examines how the size of the subsidies that producers receive, or the conditions established as part of the regional programs, may lead to very different results even within the framework of the Common Agricultural Policy.

Additional key words: agro-environmental measures, citrus crop, Common Agricultural Policy, Integrated Pest Management, organic agriculture.

Resumen

**Resultados de la aplicación del Reglamento (CEE) 2078/92 al cultivo de cítricos.
El caso de Calabria (Italia) y la Comunidad Valenciana (España)**

El objetivo del presente artículo fue analizar el impacto de la política agroambiental de la UE en cuanto a la adopción de técnicas de agricultura sostenible. El estudio se ha llevado a cabo en Calabria (Italia) y la Comunidad Valenciana (España), y se ha centrado en el cultivo de los cítricos por su importancia tanto social como económica en ambas regiones. En el texto se puede comprobar en qué medida decisiones de ámbito regional, como la cuantía de las subvenciones a percibir por el productor u otras condiciones establecidas en los programas, van a generar resultados completamente distintos a pesar de partir de una Política Común en materia agraria.

Palabras clave adicionales: agricultura ecológica, cítricos, medidas agroambientales, PAC, producción integrada.

Introduction

Calabria is located in the far south of Italy, separated from Sicily by the Straits of Messina. This area, along with Campania, Puglia, Basilicata, Abruzzo, Molise, Sardinia and Sicily forms part of what is traditionally known as «Il Mezzogiorno».

Calabria's special geographical and morphological conditions make it a unique region with respect to agricultural practices. It occupies 1,508,000 ha - some 5% of Italy's total area. The region has a total of around 899,382 ha of agricultural land, of which 556,503 ha make up the useful agricultural area (UAA)¹. Some 42,776 ha are given over to citrus cultivation. Of the

total UAA, 42.6% is classified as mountains, 48.5% as hills, and 8.9% as plains (ISTAT, 2000).

Cattle, pigs and agriculture form the basis of the economy in many areas of Calabria. The most important activities are olive-growing (including the production of olive oil), citrus cultivation (mainly oranges), beef and pig farming, the production of grapes and wine, and the cultivation of durum wheat. Citrus growing—the focus of this research—takes place on the plains, where all the region's horticultural crops are grown. The most important areas cultivated with high value crops lie around the coast (e.g., the Pianura di Sibari, Lamezia, and Gioia Tauro).

The *Comunidad Valenciana* (the Region of Valencia: hereafter referred to as Valencia) is located on the Mediterranean coast of Spain between the Regions of Catalonia and Murcia, and occupies some 4.6% of the total area of Spain (INE, 2004). A 35.6% of its total area is arable land, 1.1% permanent grasslands, 48% is

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¹ UAA = useful agricultural area, the area under cultivation, meadow and pasture.

under forest, and 15.3% is classified as rivers, lakes and unproductive lands, etc. (CAPA, 2003).

The region's soil and climatic conditions make it an ideal location for citrus cultivation; indeed, this activity is one of the major pillars of the regional economy. In economic terms, citrus fruits made up 43.3% of the region's agricultural production in 2000 (CAPA, 2003), followed by fresh vegetables (11.8%), fresh fruits (7.3%), pigs (7.3%), table grapes (3.5%) and wine (3.6%).

As in Calabria, citrus cultivation occurs in the flat areas of Valencia. All three of the Region's Provinces (Alicante, Valencia and Castellón) are involved in this activity.

With respect to land use, the UAA of Calabria is estimated to be 36.9% of the region's extension, while in Valencia this figure is 36.7% (Table 1). Since they are both Mediterranean regions, similar crops are cultivated in both: citrus fruits, olives, grapes, and other fruits and vegetables (under rotation). In terms of the area occupied, Calabria's main crop is olives. Citrus fruits, which occupy 7.6% of the UAA, take third place after durum wheat. In contrast, in Valencia, citrus and other fruits (persimmons, medlars, peaches, etc.) occupy some 15% of the area, i.e., 56.08% of all land under cultivation (CAPA, 2002). Citrus cultivation alone involves 8.2% of the region's extension, i.e., 22.4% of the UAA (Table 1).

The aim of this article was to compare the adoption of organic agriculture and integrated pest management (IPM) practices with respect to citrus growing in Calabria and Valencia after the introduction of Regulation (EEC) 2078/92 (OJ, 1992a). The rural development programs of both regions were analysed, with special focus on agro-environmental measures. In addition, a comparison was made of the legislation and

subsidy programs regarding agro-environmental citrus cultivation under these regions' former and the present rural development programs [Regulation (EEC) 2078/92 (OJ, 1992a) and Regulation (EC) 1257/99 (OJ, 1999)].

The introduction of European regulations regarding agro-environmental measures in Calabria and Valencia

Rural development programs within the framework of the Common Agricultural Policy (CAP) have been undertaken in different EU states according to European regulations. However, these regulations change, and there are clear differences between the former and the present programs. Regulation (EEC) 2078/92 and Regulation (EC) 1257/99 are pertinent to the present study.

The former rural development programs were created after the 1992 reform of the CAP and applied during the period 1994-1999. This involved the establishment of a number of rural development measures. However, all of these were revoked by Regulation (EC) 1257/99, which involved support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF). Regulation (EC) 1257/99 formed the basis of the new programs that have arisen from the Agenda 2000 reform. Both the former and these new rural development programs were/are in force throughout the EU.

Both Calabria and Valencia are classified as Objective 1 regions of the EU. The former programs in Calabria that are still in force² include the following actions or accompanying measures:

— Compensation for improving the efficiency of agricultural structures [Regulation (EEC) 2328/91 (OJ, 1991b), Regulation (EC) 950/97 (OJ, 1997)].

— «*Programma Territoriale Ambientale* (the Regional Environmental Program) for the promotion of agricultural production methods compatible with the protection of the environment [Regulation (EEC) 2078/92 (OJ, 1992a)].

— Early retirement from farming [Regulation (EEC) 2079/92 (OJ, 1992b)].

Table 1. Land use in Calabria and Valencia

	Calabria		Valencia	
	Area (ha)	% of total	Area (ha)	% of total
Total	1,508,000	100	2,323,700	100
UAA	556,503	36.9	848,657	36.7
Citrus	42,776	2.8	190,893	8.2

Source: Data taken from CAPA (2000), ISTAT (2000) and De Blasi and De Boni (2001).

² Agro-environmental subsidies are conceded for a five year period. Thus, some holdings are still working under the former program policies (i.e., the Regional Environmental Program-Regulation [EC] 2078/92), applied during the 1994-1999 period.

— Forestry measures in agriculture [Regulation (EEC) 2080/92 (OJ, 1992c)].

The Regional Environmental Program subsidised four measures of the thirteen possible offered under Regulation (EEC) 2078/92, which was the basis of the program:

— Measure A: agricultural production methods compatible with the protection of the environment:

- Measure A1: Reduction in the use of chemical inputs (Integrated Pest Management).

- Measure A2: Organic agriculture.

— Measure D: Conservation of the landscape and countryside.

— Measure E: Upkeep of abandoned farmland.

Later, with the coming into force of Regulation (EC) 1257/99, two types of programs were drawn up:

— The *Programma Operativo Regionale* (POR; the Regional Operational Program), financed by the EAGGF-Guidance Section. This comprises measures regarding the improvement of rural structures and the diversification of rural areas.

— The *Piano di Sviluppo Rurale* (PSR; Rural Development Plan), which contains measures related to agricultural production methods compatible with the protection of the environment, forestry measures, and an aid scheme for underdeveloped areas, all financed by the EAGGF-Guarantee Section.

The PSR for 2000-2006 includes four measures which intensify the effects of the former programs:

— Compensation for underdeveloped areas.

— Agro-environmental measures: introduction and/or maintenance of organic and IPM systems.

— Early retirement from farming.

— Forestry measures in agriculture.

Meanwhile, the following rural development programs are presently in force in Valencia:

— The Integrated Operational Program of Valencia, financed by the EAGGF-Guidance Section, for the improvement of the efficiency of agricultural structures (equivalent to Calabria's POR).

— The Rural Development Plan for Accompanying Measures in Spain, drawn up at national level and established in the different regions through regional legislation. This program is financed by the EAGGF-Guarantee Section and is equivalent to the PSR of Calabria.

As in Calabria, some holdings abide by the new rural development programs corresponding to Regulation

(EC) 1257/99, while others are still working under the five year conditions of former programs (Regulation (EEC) 2078/92). The accompanying measures for the 1994-1999 period were similar to those for Calabria since they were derived from the same European Regulations:

— Compensation for underdeveloped areas. Regulation (EEC) 2328/91, Regulation (EC) 950/97. Spanish Royal Decree 466/90 (BOE, 1990).

— Agricultural production methods compatible with the protection of the environment. Regulation (EEC) 2078/92. Spanish Royal Decrees 51/95 (BOE, 1995a), 632/95 (BOE, 1995b), 928/95 (BOE, 1995c).

— Early retirement from farming. Regulation (EEC) 2079/92. Spanish Royal Decrees 477/93 (BOE, 1993b), 1695/95 (BOE, 1995d), 2286/98 (BOE, 1998).

— Forestry measures in agriculture. Regulation (EEC) 2080/92. Spanish Royal Decrees 378/93 (BOE, 1993a), 152/96 (BOE, 1996).

The second accompanying measure, regarding agricultural production methods compatible with the protection of the environment, distinguished between two types of actions:

— Horizontal measures (which could be applied throughout the entire state). Spanish Royal Decree 51/95.

— Non-horizontal measures³, or specific actions for selected zones (i.e., national parks, wetlands, special protection zones for birds, etc.). Spanish Royal Decrees 632/95, 928/95.

The dates of the Spanish Royal Decrees show that the accompanying measures corresponding to Regulation (EEC) 2078/92 were the last to come into force at national level.

Spanish Royal Decree 51/95 developed four horizontal measures:

— Extensification of crop farming.

— Education and training for farmers in environmental production practices.

— Rearing of animals or local breeds in danger of extinction.

— Organic farming.

Royal Decree 51/95 came into force at regional level in Valencia through the Order of 7th June 1996 (DOGV, 1996).

The above shows that the change in rural development programming has simplified the introduction of accompanying measures in both regions. The general rules of the new rural development policy are now

³ «Non-horizontal» means that they are adapted to the particular needs of each region.

established under a single Regulation —Reg. (EC) 1257/99— while former policy was established under four different Regulations —Reg. (EEC) 950/92, 2078/92, 2079/92 and 2080/92.

With regard to the agro-environmental measures contained in Regulation (EEC) 2078/92, the activities chosen to be promoted in Calabria (organic farming, IPM, conservation of the landscape and countryside, upkeep of abandoned farmland) differed slightly from those chosen in Valencia (organic farming, extensification of crop farming, rearing of animals in danger of extinction, agro-environmental training for farmers). A common focus of both regions was, however, the promotion of organic farming. Nonetheless, IPM was introduced earlier in Calabria; in Valencia it was only included as part of the new programs [Regulation (EC) 1257/99].

With the coming into force of the new programs, all accompanying measures became horizontal in Spain. In Italy, the two regional programmes (the Regional Operational Program and the Rural Development Plan) were drawn up by the central government, whereas in Spain the Regional Operational Programs were elaborated at the regional level, and the Rural Development Plan was produced by the central government. Once the latter was designed, it was applied to each region via a Royal Decree and through the corresponding regional legislation.

Organic farming and IPM in the framework of agro-environmental policy: a regional study

Organic farming is established in both regions by Regulation (EEC) 2092/91 (OJ, 1991a), and by the new agro-environmental programs based on Regulation (EC) 1257/99. In Valencia, the entry into force of Regulation (EC) 1257/99 at the regional level was preceded by Royal Decree 4/2001 (BOE, 2001) and 708/2002 (BOE, 2002). Later, these Royal Decrees entered regional legislation: Order of the Regional Department of Agriculture and Environment (RDAE) 19th June 2002 (DOGV, 2002a), and Order of the RDAE 4th December 2002 (DOGV, 2002b). In contrast, Community Regulations were directly adapted to regional regulations in Calabria (Regione Calabria, 2000).

The practise of IPM is not regulated at the European level. As a consequence, each region has its own

technical laws created at a regional level. Spanish legislation separates these technical regulations from those concerning the subsidies that a grower can receive. The Calabrian system, however, combines both aspects in a single document (in fact both for organic farming and IPM).

As with the former agro-environmental programs under Regulation (EEC) 2078/92 (European Commission, 1998), the new programs arising from Regulation (EC) 1257/99 provide specific subsidies aimed at helping growers who decide to adopt organic farming and IPM. The exact subsidy they receive is established independently by each member state or by each region, but financial expenses have to be kept to a predetermined budget. This budget is distributed in order of the priorities given to the different measures, as well as on the crop to be managed. It is easier to distinguish between the differences if organic and IPM citrus cultivation in Calabria and in Valencia are examined in Tables 2 (former programs 2078/92) and 3 (new programs 1257/99). The data show that the Calabrian government decided to subsidise these growers to almost the maximum allowed by Regulation (EEC) 2078/92 (established at 1,000 € ha⁻¹), and to the maximum allowed by Regulation (EC) 1257/99. In contrast, the same type of growers in Valencia received lower subsidies.

The practice of IPM was not chosen as a subsidisable activity in Valencia under the former programs. For this reason no comparison of the subsidies available in Calabria and Valencia is possible.

Calabria's former rural development program under Regulation (EEC) 2078/92 established two different subsidies: one for the introduction of organic farming practices, and another for its maintenance (for growers who had previously participated in an organic agriculture

Table 2. Comparison of organic citrus growing subsidies under former programs [Regulation (EEC) 2078/92]

<i>Calabria</i>	
Introduction of organic farming	800 € ha ⁻¹
Maintenance of practice	720 € ha ⁻¹
<i>Valencia</i>	
1 st year	360.61 € ha ⁻¹
2 nd year	288.50 € ha ⁻¹
3 rd year and subsequent	216.36 € ha ⁻¹

Source: Data taken from BURC (1996 and 1998) and DOGV (1996).

Table 3. Comparison of organic and IPM citrus growing subsidies under present programs [Regulation (EC) 1257/99]

	Calabria		Valencia
	Preferential areas	Non-preferential areas	
<i>Organic farming</i>			
1 st & 2 nd years	1,000 € ha ⁻¹	950 € ha ⁻¹	468.79 € ha ⁻¹ (Modulated by area)
Subsequent	950 € ha ⁻¹	900 € ha ⁻¹	
<i>IPM</i>			
1 st & 2 nd years	800 € ha ⁻¹	750 € ha ⁻¹	345.58 € ha ⁻¹ (Modulated by area)
Subsequent years	750 € ha ⁻¹	700 € ha ⁻¹	

Source: Data taken from BURC (2000), Regione Calabria (2000) and DOGV (2002a,b).

program). The difference between the two subsidies was about 10%. Under the former Valencian program, subsidies were modulated by the number of years of practise, growers receiving 100% of the subsidy in the first year, 80% in the second, and 60% from the third to the fifth year.

In its new program, the Calabrian government introduced changes that distinguish between preferential and non-preferential areas (depending on ecological considerations), and decided to reduce subsidies after the second year of practice. This diversification in preferential areas corresponds to Calabria's geophysical conditions, since intensive agricultural practices only take place on the coastal plains. However, in Valencia, intensive practices are common throughout the region. Other factors had therefore to be taken into account in Valencia's case, such as the minimum area cultivated needed to receive a subsidy (1 ha under the former program and 0.5 ha in the current one). The last modification to the new Valencian program was the result of changes to the Spanish Rural Development Plan for Accompanying Measures, and consists of the modulation of the subsidy received by the size of the area under cultivation. Consequently, for organic farming, holdings with an area of 40 ha or less receive the total subsidy (468.79 € ha⁻¹, see Table 3), those between 40 and 80 ha receive 60% of the subsidy (281.30 € ha⁻¹), and those larger than 80 ha receive 30% (140.63 € ha⁻¹). The same percentages apply for the adoption of IPM: a subsidy of 345.58 € ha⁻¹ for the

smallest-sized holdings, 207.3 € ha⁻¹ for the next bracket, and 103.6 € ha⁻¹ for the third bracket. The aim is to help farmers with smaller orchards to face the higher production costs that naturally occur, and at the same time prevent situations in which farmers with larger holdings are awarded the greater part of CAP subsidies.

The most significant difference between these two regions is therefore the subsidies paid. Some of the subsidies paid out under Calabria's former program were three times those received by Valencian growers, while under the current program they still generally double them. The results of both subsidy policies are analysed in the next section.

Comparison of the impact of Regulation (EEC) 2078/92 on organic and IPM citrus growing in Calabria and Valencia

Since it is impossible to analyse the impact of Regulation (EC) 1257/99 in Calabria (the new programs under the «*Piano di Sviluppo Rurale 2000-2006*» (Regione Calabria, 2000) have not yet been implemented) this section concentrates on the implementation of agro-environmental citrus production practices under Regulation (EEC) 2078/92.

The European Council Regulation (EEC) 2078/92, currently repealed by Regulation (EC) 1257/99, generated important results regarding environmentally-friendly production methods in Calabria. In fact, Calabria is the second most important region in Italy in terms of area given over to organic agriculture [Italy is at the head of Europe in terms of area given over to organic production (Juliá and Server, 2000)]. Moreover, the available data show that pesticide use per ha and year in Calabria is 50% less than that of the rest of the country (Gaudio, 2002a).

Table 4 contains data on organic farming in the two study regions. Both have very similar UAAs, but citrus growing is much more important in Valencia than in Calabria (as the 1999 figures show). While the total area given over to citrus crops was 22.5% of the UAA in Valencia, in Calabria it represented only 7.7%.

In contrast, if the total organic agriculture areas of the two regions are compared to their UAA figures, organic agriculture appears as a great success in Calabria (10.6% of the UAA, compared to only 2.1% in Valencia). There are two reasons for this: the difficulty

Table 4. Organic farming: differences in total area and citrus area (ha). Data for 1998 and 1999

Area	Calabria	Valencia
Total regional	1,508,000	2,323,700
Regional UAA	556,503	852,224
Regional UAA/Total regional	36.9%	36.7%
<i>Total OA S 98</i>	<i>45,808.4</i>	<i>12,179.2</i>
Citrus OA 98	4,569.4	196.4
Citrus OA/Total OA 98	9.9%	1.6%
<i>Total OA 99</i>	<i>59,079</i>	<i>17,947</i>
Citrus OA 99	6,072	234
Citrus OA/Total OA 99	10.3%	1.3%
Citrus total 99	42,776	191,551
AVR (Citrus OA/Total OA) 98-99	3%	-19.2%
AVR Total OA 98-99	29%	47.3%
AVR Citrus OA 98-99	33%	19.2%
Citrus OA 99/Citrus total 99	14.2%	0.1%
Total OA 99/Regional UAA	10.6%	2.1%
Total citrus 99/Regional UAA	7.7%	22.5%

UAA: useful agricultural area. OA: organic agriculture. AVR: annual variation rate. *Source:* Data taken from CAPA (2000), CAE-CV (2001), De Blasi and De Boni (2001) and Gaudio (2002b).

in establishing organic practices in Valencia given its geophysical distribution and long tradition of intensive agriculture, and the larger subsidies awarded to Calabrian growers (which may also act as an incentive).

The area given over to organic citrus crops in Calabria compared to its total citrus area in 1999 was about 14.2%; the same comparison produces a figure of 0.1% for Valencia. This result is influenced not only by the fact that Calabria has less total area given over to citrus, but also by the significant EU subsidies provided, as mentioned earlier.

The importance of organic citrus growing with respect to the total area given over to organic practices was higher in Calabria during 1998 and 1999: around 10% compared to only 1.6% in Valencia.

During these years, the organic citrus area/total organic area ratio increased in Calabria while it diminished in Valencia (as shown by annual variation rate calculations). This was not because of any decrease in the organic citrus area of the latter, but rather to the

small growth of this area compared to the much larger growth in the area occupied by other organic crops. In fact, a large number of holdings registered in Valencia joined the agro-environmental program during the period 1998-1999 precisely because of the organic production measures announced. However, most were dedicated to rain-fed, extensive, woody crops, which tend to be managed organically much more easily than citrus crops.

The annual variation rate in the organic agricultural area for this same two year period was higher in Valencia than in Calabria. This shows the greater size of the area incorporated into the Valencian program at that time. Nevertheless, the annual variation rate of organic citrus area was higher in Calabria, confirming the findings of the analysis presented.

Table 5 shows the same analysis for IPM. As the general figures (Table 4) have already been discussed, the following lines deal only with specific IPM indicators.

Table 5. IPM: differences in total area and citrus area (ha). Data for 1998 and 1999

Area	Calabria	Valencia
Total regional	1,508,000	2,323,700
Regional UAA	556,503	852,224
Regional UAA/Total regional	36.9%	36.7%
<i>Total IPM 98</i>	<i>12,134.2</i>	<i>2,528</i>
Citrus IPM 98	4,690.5	2,528
Citrus IPM/Total IPM 98	38.6%	100%
<i>Total IPM 99</i>	<i>20,101</i>	<i>4,623</i>
Citrus IPM 99	7,250	4,623
Citrus IPM/Total IPM 99	36.1%	100%
Citrus total 99	42,776	191,551
AVR (Citrus IPM/Total IPM) 98-99	-6.7%	
AVR total IPM 98-99	65.6%	82.8%
AVR Citrus IPM S 98-99	54.5%	82.8%
Citrus IPM 99/Citrus total 99	17%	2.4%
Total IPM 99/Regional UAA	3.6%	0.5%
Total citrus 99/Regional UAA	7.7%	22.5%

UAA: useful agricultural area. IPM: integrated pest management. AVR: annual variation rate. *Source:* Data taken from CAPA (2000, 2001), De Blasi and De Boni (2001) and Gaudio (2002b).

According to the 1999 data, the total IPM area compared to the UAA, plus the IPM citrus area compared to the total citrus area, were higher in Calabria than in Valencia. Since the first IPM technical regulation came into force in Calabria in May 1998, while in Valencia this occurred in July 1997, two reasons might explain the greater success achieved in the Italian region: IPM techniques are easier to implement than organic techniques (they do not differ tremendously from traditional farming), and IPM was included as a subsidised activity in Calabria's PSR [in Valencia this did not happen until the entry into force of Regulation (EC) 1257/99].

The first Valencian technical IPM regulation concerned citrus cultivation only. Thus, the 1998 and 1999 data regarding total IPM area and citrus IPM area are the same (Table 5). Other crops, for instance grapes (both for wine production and fresh consumption) were added in the second technical IPM regulation that came into force in 2000. In Calabria, however, the first technical IPM regulation included the main crops grown there (i.e. olives, both wine and table grapes, peaches, nectarines, pears, kiwis, strawberries, etc.). This allows the importance of the IPM citrus crop to be calculated as a percentage of the regional IPM area.

The annual variation rate of total IPM area has been positive in both regions, although greater in Valencia -which indicates a stronger growth of IPM area in this region in relative terms. The same can be said for the IPM citrus area. However, the annual variation rate of the IPM citrus area compared to total IPM area has been negative in Calabria (despite the increase between 1998 and 1999) due to the larger increase in the area given over to non-citrus crops (mainly peaches). The same analysis cannot be performed for Valencia since citrus crops were the only crop under the IPM technical regulation at that time.

Organic farming was established in Calabria through Regulation (EC) 2092/91, and measure A2 was put into practise in 1996 with the entry into force of the Regional Environmental Program. Measure A1 (regarding IPM) was implemented in 1998 because of the lack of technical regulations at that time. Nevertheless, the growth rate of organic citrus area in Valencia was much lower, something that can be explained by the following reasons:

1. It is difficult for growers to introduce organic agriculture in a coastal plain with no hills or mountains that can act as barriers to naturally isolate the crop. It is also difficult to isolate generally small organic citrus

orchards from intensive citrus plantations. Further, the region's long history of intensive production hinders the introduction of organic agriculture —the high productivity rates of intensive citriculture mean larger profits for growers.

2. Growers are unable to obtain appropriate prices for their harvests which could defray the higher production costs of organic agriculture. The reason may be a lack of distribution channels for these products in Spain, since they are not highly valued (at least in the home market). Furthermore, a few producers with small orchards are unable to produce a consistent harvest to offer to distribution channels.

3. The subsidies available have not served as an incentive for the positive growth of organic citrus growing in Valencia.

Conclusions

The aim of this article was to analyse the results of the adoption of organic farming and IPM techniques in citrus growing in Calabria and Valencia, under CAP agro-environmental schemes [mainly under Reg. (EEC) 2078/92]. Both techniques are undertaken under the auspices of the same Community Regulations (EC) 2092/91, 2078/92 and 1257/99. However, there are some differences in the application of these regulations at regional level. While in Italy such application is a regional responsibility, in Spain the basic legislation related to European regulations is a matter for the central government with subsequent regional adoption. Nevertheless, with respect to definitions and demands, great similarities were seen for both IPM and organic farming in terms of technical requirements. This was especially so for organic farming, whose technical requirements are described in detail in European regulations.

The most important differences were, without doubt, seen at the level of subsidies, not only with respect to their size but also regarding the distinction made between IPM and organic agriculture. In Calabria, the distinction is made between these two activities, and larger subsidies are given to organic agriculture; by contrast, in Valencia not only the quantities are practically the same, but also lower than those established in Calabria.

The application of these subsidies to citrus growing in these regions shows that the effects of implementing agro-environmental policy schemes are not neutral. Indeed, while in Calabria organic citrus growing has

greatly increased (even more than IPM), in Valencia, IPM has considerably increased over the years, while organic agriculture has hardly experienced any growth at all.

It is clear that the growth of organic agriculture in Calabria has been helped by higher subsidies, but also by the fact that organic products are sold at premium prices in the Italian market. In contrast, the IPM area has grown considerably in recent years in Valencia, despite the smaller subsidies received. The reason for this lies with market trends: IPM is now perceived as advantageous not only by farmers (compared to traditional cultivation) but by retailers and consumers.

In conclusion, Spanish authorities should evaluate the introduction of higher subsidies for organic farming, perhaps bringing them into line with those available in other European countries. This may help Spanish producers to incorporate their plantations into EU agro-environmental programs. Current subsidies do not match the losses a producer may suffer when converting to or practising organic citriculture.

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