BUILDING PDO AND PGI AWARENESS AMONG HIGH SCHOOL STUDENTS IN ORDER TO IMPROVE THEIR DIET

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Abstract

An OSMOSIS project (collaborative project among University and High School) was carried out by Universidad Miguel Hernández of Elche (UMH) and consisted in building and implementing innovative knowledge for Secondary Education (Horizon 2014-Schools and Horizon 2015-K12). This project involved teachers and students from the Scientific Culture Course of the High School Jaime de Sant Ángel (Redovan, Alicante, Spain) and the AgroFood technology Department and Agri-Environmental Economics Department of UMH and staff from the Níspero de Callosa d’ En Sarrià Protected Designation of Origin. The topic of this work was Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) awareness and its relation to a healthier diet among students. European food and drink reflect the continent cultural diversity and rich lands. EU geographical indication schemes protect specific know-how, authenticity and agro-environmental conditions. Geographical indications include protected geographical indications (PGIs) and protected designation of origins (PDOs). These schemes protect the name of a product that comes from a specific region and follows a particular traditional production process. For PDOs, the raw ingredients need to come from the region of origin where all steps of production need to take place. As for PGI, at least one of the stages of production, processing or preparation takes place in the region. The project was designed for 15-18 years old students. The project combined knowledge from food quality, geography, economics, biology, mathematics and language. The activity was organized in 6 blocks of activities: 1) working plan design by the University and High School teams; 2) presentation of the working plan to students; 3) initial questionnaire to students based in order to know their degree of knowledge about PDO and PGI; 4) lectures and visits to Protected Designation of Origen producers; 5) final questionnaire to students with similar content as the initial one; and, 6) data processing, correction and revision by students in order to evaluate their achievements. Afterwards, the students developed a service-learning project based on the achieved knowledge. The project assessed the untrained students’ knowledge versus themselves (trained students). This project is presented as an example of interdisciplinary collaborative project among University, Food Industry and High School.

Keywords: food quality, high-school, service-learning, society, university, industry.

1 INTRODUCTION

Three European Union schemes of geographical indications and traditional specialties, known as Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), and Traditional Specialities Guaranteed (TSG), promote and protect names of quality agricultural products and foodstuffs (1).

Products registered under one of the three schemes may be marked with the logo for that scheme to help identify those products. The schemes are based on the legal framework provided by the EU Regulation n° 1151/2012 of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs. This regulation (enforced within the EU and being gradually expanded internationally via bilateral agreements between the EU and non-EU countries) ensures that only products genuinely originating in that region are allowed to be identified as such in commerce. The legislation first came into force in 1992. The purpose of the law is to protect the reputation of the regional foods, promote rural and agricultural activity, help producers obtain a premium price for their authentic products, and eliminate the unfair competition and misleading of consumers by non-genuine products, which may be of inferior quality or of different flavour.

These laws protect the names of wines, cheeses, hams, sausages, seafood, olives, olive oils, beers, balsamic vinegar, regional breads, fruits, raw meats and vegetables.
Foods such as Arroz de Calasparra, Guijuelo, Idiazábal, Jabugo, Carne de Ávila, Cordero Segureño, Espárrago de Navarra, Queso Los Beyos, Pera de Jumilla, Pimentón de Murcia, Queso de Murcia, Queso de Murcia al vino, Aceite de la Comunitat Valenciana, Alcachofa de Benicarló/Carxofa de Benicarló, Arroz de Valencia/Arroz de València, Chufa de Valencia, Granada Mollar de Elche/Granada de Elche, Kaki Ribera de Xúquer, Nísperos Callosa D'En Sarriá and Uva de mesa embolsada del Vinalopó can only be labelled as such if they come from the designated region. Idiazábal cheese, for example, it is the one that corresponds to the one elaborated in the Basque Country and in Navarre (except the municipalities that make up the Roncal valley), entirely with sheep milk from the Latxa and Carranzana breeds. It is a fatty cheese with a minimum maturity of 60 days, between 1 and 3 kg per unit, pressed and not cooked.

The **Protected Designation of Origin** is the name of an area, a specific place or, in exceptional cases, the name of a country, used as a designation for an agricultural product or a foodstuff,

- which comes from such an area, place or country,
- whose quality or properties are significantly or exclusively determined by the geographical environment, including natural and human factors,
- whose production, processing and preparation takes place within the determined geographical area.

In other words, to receive the PDO status, the entire product must be traditionally and entirely manufactured (prepared, processed and produced) within the specific region and thus acquire unique properties.

The **Protected Geographical Indication** is the name of an area, a specific place or, in exceptional cases, the name of a country, used as a description of an agricultural product or a foodstuff,

- which comes from such an area, place or country,
- which has a specific quality, goodwill or other characteristic property, attributable to its geographical origin,
- at least one of the stages of production, processing or preparation takes place in the area.

In other words, to receive the PGI status, the entire product must be traditionally and at least partially manufactured (prepared, processed or produced) within the specific region and thus acquire unique properties.

The **Traditional Specialities Guaranteed** (TSG) quality scheme aims to provide a protection regime for traditional food products of specific character. Differing from PDO and PGI, this quality scheme does not certify that the protected food product has a link to specific geographical area.

To qualify for a TSG a food must be of "specific character" and either its raw materials, production method or processing must be "traditional". "Specific character" is defined as "the characteristic production attributes which distinguish a product clearly from other similar products of the same category". "Traditional" is defined as "proven usage on the domestic market for a period that allows transmission between generations; this period is to be at least 30 years". For a food name to be registrable under the TSG scheme it must:

- have been traditionally used to refer to the specific product; or
- identify the traditional character or specific character of the product.

A TSG creates an exclusive right over the registered product name. Accordingly, the registered product name can be used by only those producers who conform to the registered production method and product specifications.

The implementation of the above legislative initiative enables farmers switch to forms of integrated countryside development and improve their income due to better prices. In addition, consumers can buy quality-guaranteed products, based on origin.

Protecting local products means conserving varied local ecosystems at various levels: animals, plants (breeds and local varieties), plant associations, microbial ecosystems, including the places for maturing cheeses and the landscapes. This is also a way of maintaining in a formal way shared knowledge and practices. This is all the more interesting, given that most of the products having a designation of origin label are produced in extensive systems which associate localised practices and biological diversity.
Despite the fact that customers are strongly motivated to buy PDO/PGI products, surveys (2; 3) indicate that most consumers only have a vague knowledge of the definition and characteristics of PDO/PGI (4; 5; 6). Furthermore, percentages of correct understanding vary between 3% for both PDO and PGI in the Italian study by (7) and 70% for PDO and 40% for PGI in the study by (6). So, it is crucial to improve awareness and knowledge about these products in order to benefit both consumers and producers.

2 METHODOLOGY

The partners of the project were: students (between 15 and 18 years old) and teachers from the Science Department of the High School Jaime de Sant-Ángel from Redovan (Alicante, Spain); staff from the Agro-Food Technology Department and Agro-Environmental Department of Miguel Hernández University of Elche (UMH) and staff from the Protected Designation of Origin Nísperos de Callosa d’ En Sarrià. They were all together involved in a coordinated project designed to enhance learning motivation on high school students but also as a perfect moment for the university and industry to approach society, and more precisely high school students. The objective of the project was to build awareness about how important origin and quality in food are and which are the tools that exist in Europe to identify them.

2.1 Preparatory work on IES Redovan

During this stage the working plan designed by UMH and IES Redovan teachers was presented to the students to introduce the activities to be carried out in the next sessions. Students were informed about the subject of this project (PDO and PGI agricultural products).

2.2 Initial questionnaire

Students received a first questionnaire with this structure and questions:

1. How many fruits with Protected Designation of Origin (DOP) or Protected Geographical Indication (IGP) are there in Alicante?
2. Which is the “Autonomous community” with more fruits with DOP or IGP are there in Alicante? And the province?
3. Could you indicate three fruits with DOP or IGP? And three vegetables?
4. Do you know any cheese with DOP or IGP? Which are they?
5. What does it mean that any fruit presents DOP or IGP?
6. Which products can present DOP or IGP?
7. Does the turron present DOP or IGP?
8. Are the products with DOP or IGP better than the rest (from a nutritional point of view)?
9. Which are the requirements to obtain the DOP or IGP certificate in any fruit?
10. What is the difference between DOP and IGP?
11. When is the harvest season of Granada Mollar de Elche?
12. When is the harvest season of Uva de mesa Embolsada del Vinalopó?
13. When is the harvest season of Cereza de la Montaña de Alicante?
14. When is the harvest season of Níspero de Callosa d’En Sarrià?
15. Is Breva de Albatera a fruit with DOP or IGP? When is the harvest season?
16. How do you realise a product presents DOP or IGP in a supermarket or shop?
17. In the map, how many products are fruits or vegetables with PDO or PGI?
The aim of this questionnaire was to evaluate the degree of knowledge among students about PDO and PGI products prior to the OSMOSIS project.

2.3 Participative Master-Lecture

A presentation about what are PDO and PGI was given to students at the High School. The presentation explained the key concepts regarding these legal figures; why they important for agriculture; how many protected agricultural products there are in Spain (meat, cheese, fruits, vegetables, olive oil, etc.); which fruits and vegetables are harvested in each season and why it is important to eat them in their season (Fig. 1).

![Participative master lecture at the High School.](image)

2.4 Visit to Protected Designation of Origin premises

Students and teachers visited the DOP Nísperos de Callosa d'En Sarrià. During the visit, technicians explained what the crop specialties are, when it is harvest, how it is harvest, which are the main benefits that this fruit brings when consumed, etc. Students and teachers could entry in a warehouse.
where the fruits are processed before selling. They could see the whole process involving the manufacturing process of Nísperos de Callosa d’En Sarrià (Fig. 2).

2.5 Consumer study

Another questionnaire was conducted among students and teachers. Students were separated in two groups. The first group attended the participative master lecture and that visited PDO premises. The second group did not. The questionnaire had a similar structure than the one that was used at the beginning of the process. The objective was to identify and quantify the degree of assimilation of the information students got during the process.

2.6 TSG video recording

Students had to record a short video about the traditional bread making process in their village and analyse the possibilities that this process has of getting the Traditional Specialities Guaranteed scheme. The video had to include interviews to the bakers.

3 RESULTS

Students from 4th degree of ESO (Obligatory Secondary School) from the Scientific Culture Course of Sant-Jaime High-School (Redovan, Alicante) and their teacher participated in an OSMOSIS project in collaboration with university and PDO fruits producers. Table 1 shows the link between high school disciplines and the activities carried out within this program.

Table 1. Main activities of the project and potential connection with disciplines of high school courses

<table>
<thead>
<tr>
<th>Activity</th>
<th>Chemistry</th>
<th>Biology</th>
<th>Geography</th>
<th>Math’s</th>
<th>Technology</th>
<th>Economy</th>
<th>Language</th>
<th>Social sciences</th>
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<tr>
<td>EU and Spanish regulations use</td>
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<td></td>
<td>x</td>
<td>x</td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Participative master lecture</td>
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<td>x</td>
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<td>x</td>
<td>x</td>
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<td>x</td>
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<td>x</td>
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<td>TSG video recording</td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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</table>
3.1 Initial questionnaire
Results of the initial questionnaire showed that students had no knowledge at all about what about PDO and PGI products prior to the OSMOSIS project as none of them answered correctly to it.

3.2 Consumer study
The results of the consumer study conducted among students and teachers were:

1 How many fruits with PDO and PGI and TSG do you know?
The first part of the questionnaire looked at the degree of knowledge that respondents declared to have about PDO, PGI and TSG. Fig. 3 shows that 45 % of respondents did not know any fruits with PDO and 34 % knew 3 or less. Fig. 4 tells us that 51 % of respondents know no fruits with PGI and 1 % know less than 3. Fig. 5 give us the same image regarding TSG with 50 % of respondents declaring they know fruits with TSG when the fact is that there are no fruits with this qualification. This result is key if we consider that Alicante province is the area of Spain with more fruits with PDO and PGI.

![Figure 3. How many fruits with PDO do you know?](image1)

![Figure 4. How many fruits with PGI do you know?](image2)
As PDO and PGI are legal figures related to origin, question 13 asked respondents if they look at product origin when they buy a product. Just 18% of respondents declared to do it always. (Fig 6).

The second part of the questionnaire aims to evaluate the differences in the degree of knowledge between two groups of students (those who attended the OSMOSIS Project and those that did not). Table 2 shows the differences in the percentage of rights answers between both groups. It can be seen how trained students answered correctly to the questionnaire and how the right answers in the non-trained groups does not even reach 50% in almost all the questions.
Table 2. Results of non-trained vs trained students’ knowledge about PDO, PGI and TSG schemes

<table>
<thead>
<tr>
<th>Questions(*)</th>
<th>Survey respondents success (%)</th>
<th>Trained students success (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>43</td>
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</tr>
<tr>
<td>2</td>
<td>14</td>
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</tr>
<tr>
<td>18</td>
<td>8</td>
<td>100</td>
</tr>
</tbody>
</table>

(*)1: Which is the Autonomous community with more fruits with DOP or IGP are there in Spain?; 2: Which is the province with more fruits with DOP or IGP are there in Spain?; 3: Which fruits are with DOP or IGP in next list?; 4: Which vegetables are with DOP or IGP in next list?; 5: Which cheeses are with DOP or IGP in next list?; 6: Which turrones are with DOP in next list?; 7: Which fruits are with IGP in next list?; 8: Are the products with DOP or IGP better than the rest (from a nutritional point of view)?; 9: When is the harvest season of Granada Mollar de Elche?; 10: When is the harvest season of Uva de Mesa Embolsada del Vinalopó?; 11: When is the harvest season of Cereza de la Montaña de Alicante?; 12: When is the harvest season of Níspero de Callosa d’En Sarrià?; 13: When is the harvest season of Breva Albatera?; 14: When is the harvest season of Alcachofa?; 15: When is the harvest season of Habas?; 16: Is Breva Albatera with DOP or IGP?; 17: How do you realise a product presents DOP or IGP in a supermarket or shop?; 18: How many products are with DOP or IGP?

3.3 TSG video recording

The preparation and recording of the video regarding the traditional bread making process in Redovan (Alicante) and analyse the possibilities that this process has of getting the Traditional Specialities Guaranteed allowed students to know how bread can be made and to contact a traditional job. It permitted students to recognize quality. It also helped bringing to them consciousness about how important is protecting local producers for building local community and society.

4 CONCLUSIONS

Students and teachers were involved in a collaborative project between High School, University and PDO and TGS producers. The objective of the project was to build awareness about how important origin and quality in food are and which are the tools that exist in Europe to identify them. It has been seen how education is crucial for this. At the beginning of the project, students had no idea about what are the legal figures and what they imply. It cannot be a real consciousness about the importance of origin and quality and how to protects our farmers and our producers without education. PDO staff should develop educational programmes to increase knowledge about quality food among students.

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