

GENETICALLY MODIFIED ORGANISMS (GMOs) AND SPECIFIC QUALITY PRODUCTS (PDO, PGI, ETC.), WITH SPECIAL REFERENCE TO EUROPE AND THE MEDITERRANEAN BASIN

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Evidently, most of the following considerations result from my involvement during the past 40 years with:

- the study of biodiversity and the conservation and use of natural rural resources;
- the understanding of the systems of designation of origin (PDO) and of geographical indications (PGI) and other specific products of agricultural origin, such as organic foodstuffs.

The increase of the value of quality products results from the interaction between territory, autochthonous resources and local production systems, together with man's input. Before any attempt to evaluate the role of genetically modified organisms (GMOs), we must evidently underline the importance of the traditional understanding we have of the quality of agricultural products. In the western world and in particular in the Mediterranean basin, linking a specific product to a territory and its region's name, dates back to the origin of commercial exchanges. Since then, the notion of "designation of origin" has become more confused, above all, with the development of guilds in Northern Europe.

Their local collective or generic trademarks have quickly been confused with a kind of "designation of single geographical origin": Bruges' laces, Brussels' tapestries, Delftware, etc. This approach evidently has little to do with the true PDOs and PGIs of the rural world. The protection through PDO and PGI legislations has become a necessity for typical quality products of rural origin. Since the changes in socio-economic conditions, the dis-

ABSTRACT

Transgenic crops have proven to be tremendously popular with farmers of the New World, mainly due to short term financial and commercial gains. The recent scientific indications of the possible effect of transgenic crop characters are far from evident; this should instigate us to be even more cautious than we are actually through two-tier clear labelling and other similar precautions. Without proof of safety, the wise course is to proceed even more slowly and carefully, particularly in the delicate sector of the European and Mediterranean traditional and typical quality food products. Agricultural biotechnology is evidently a most lucrative export-oriented field (particularly on the other side of the Atlantic), but genetically modified plants and genetically engineered hormones for animal feeding, even if the possible health hazards are set aside, might not be the 21st century panacea we are told it will be; certainly not if we want to preserve our quality products sector linked to our traditions of production and consumption.

RÉSUMÉ

Les cultures transgéniques ont été très en vogue auprès des agriculteurs du Nouveau Monde, grâce à leur gain financier et commercial à court terme. Les récentes indications scientifiques sur l'effet possible des caractères cultureux génétiques (par exemple le pollen du maïs) sur les populations des insectes sauvages, nous mèneraient à être encore plus prudents et à utiliser l'étiquetage à deux niveaux et d'autres précautions similaires. Sans avoir quand même de sécurité, la décision la plus sage consiste à procéder encore plus doucement et attentivement qu'on ne le fasse à présent, notamment dans un secteur délicat comme la qualité traditionnelle de produits alimentaires.

La biotechnologie agricole est, évidemment, un domaine très lucratif orienté à l'exportation vers l'autre rive de l'Atlantique, mais les plantes génétiquement modifiées et les hormones obtenus par ingénierie génétique pour l'alimentation du bétail pourraient ne pas être la panacée: certainement pas si nous voulons préserver nos produits de qualité liés à nos traditions de production et de consommation.

appearance of the guilds' local influence, the substitution of topical collective trademarks with commercial trademarks (particularly the so called global ones), as well as the improvement in transportation conditions since the beginning of the XIXth century, the following specific arrangements and regulations have arisen, e.g.:

- the Convention of Paris, 20 May 1883;
- the Agreement of Madrid, 14 April 1891;
- the Arrangement of Lisbon, 31 October 1958; and
- the 2081/92 and 2082/92 EU regulations in 1992.

DEFINITION OF SPECIFICITY

The history of the designation of origin is in itself without any doubt, the cause of the current difficulties and usurpation tendencies of historical product names. In ancient times, the geographic designation

was *de facto* a certificate of origin and quality in the way in which we intend it nowadays. This old Greek-Latin tradition is strengthened by the actual need to protect the consumer and the need for clarity in modern commercial thinking. It can immediately be noticed that countries with a more Anglo-Saxon and even Germanic tradition have undergone a different evolution from those of Mediterranean Europe.

This evolution has resulted even more differently in the New World.

In my opinion, today, two different aims enhance the system of designation of origin: the first, is naturally to protect those producers that have obtained a product of great fame from disloyal competition and the second, to protect the consumers against false indications, through simulation and fraud. At this point, we can only observe the considerable divergence existing between countries.

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TRADITION, USURPATION AND PLAGIARISM

The designation of origin for agricultural products is a much more ancient tradition than any commercial trademark! The notion itself means localisation of a product and has clear connotations of intrinsic quality; connecting to the principle that these products have always been associated to specific agro-ecological regions, particular genetic material and well-defined elaboration methods. In most cases they have thus gained a clear recognition, both regionally and universally. Nowadays, the temptation for industry to plagiarise and usurp traditional product names, as if they were brands, is increasingly present. The illicit appropriation of a designation of origin is however, not a phenomenon born in the twentieth century. Nevertheless, we have to underline that the usurpation of names of great fame in production sectors as far as wine, cheeses, fresh and preserved foods, olives, fresh and dry fruits, honey, etc., has meaningfully increased since the early 1950s, even amongst the most honest agro-industrial groups and businessmen of the world; to the degree that it tends to become for some, an acknowledged commercial policy! In many cases, there is clearly a will to misinform the less knowledgeable consumer and a tendency to perpetuate the purchaser's confusion using words that make an indirect and false reference to the true original product. Contrary to what *marketing* professionals and *slogan* creators say in favour of commercial range products and global trade marks, the protection of the designation of origin of agricultural products is of great importance; it favours the consumers as well as the honest professionals. It is all a matter of *honest, loyal and constant* commercial thinking. We need however, to admit that it requires long involvement and it cannot be successfully achieved without some funding and a lot of moral support.

BIOTECHNOLOGIES AND TYPICAL QUALITY PRODUCTS

Quality must thus be seen, in our context, as an intrinsic characteristic of a product that is the result of the interaction between environment (pedoclimatic, pluviometric etc., characteristics), local genetic resources and human factors; it links to localisation and specific production characteristics. Without contesting the importance of biotechnologies for increasing yields, thus increased food supplies, we must underline that for its survival European and Mediterranean agriculture, after having helped to set free their part of the world from its nutritional needs, must now point to quality and the respect of tradition. Considering therefore that in this region, at least 75% of the population mistrusts the direct and indirect implication of *genetically modified* foods, it is to this reality that our modern agriculture has to adjust and to know how to adapt honestly to this very reasonable market demand. In part the EU/EC and other relevant national and international directives already provide for a

cautious approach, obliging the marketing agents to declare on the label of products destined to human consumption the presence of genetically modified organisms. The position taken earlier this year by the British Medical Association in a strongly worded report over genetically engineered foods underlining that *foods harbouring outsider/new genes, should be labelled as such so that consumers can choose freely to avoid them until they are one day proven to be safe*, sustains a more than cautious approach. It is common sense that gene-altered crops should be processed separately from conventionally produced crops so that any health side-effects that may eventually occur, can be traced to the origin that could have caused them. Even more so when we speak of top quality specific products; be it PDO, PGI or organic products! It is evidently an honest commercial practice, to inform the consumers of this radical change from traditional and standard accepted practices. We could, *on passant*, refer here to the obligation imposed by the relevant USA authorities to fully label the composition of the contents of all imported foods and beverages. The same product transferred to another environmental production situation loses its specificity. There is thus, as already indicated previously, a strict relationship between environment, the use of resources and overall human action and the final product. This relationship has already created landscapes, modelled many of the production systems, defined social behaviours and local culture and traditions and weaved relationships between individuals; so why throw all that over-board? Many uphold and sustain that in the food sector we want the modern agro-industrial system to replace traditions, modifying human reality along with its social behaviour. In this case, it is imperative to understand where exactly does useful innovation start and where stagnation ends? Nowadays, an industrial agricultural product (such as greenhouse tomatoes, strawberries or peppers) excludes, *de facto*, the old local varieties which were environmentally more adaptable. This offsets rather unexpected product-qualities and a lot of standardisation of the agricultural products. It means a mass-production approach with the disappearance of varieties and germoplasm fit for the local realities, diminishing the possibility to use specific interesting local genes in subsequent livestock or crop improvement schemes. One of the priorities to maintain this variability can be the need to restore seasonality linked to nature, respecting production cycles and timing. Without wanting to be branded conservative, it can be asserted that for example, it cannot be expected to obtain any truly tasty tomatoes in winter when nature has selected tomatoes to be consumed during summertime. The commercial approach of right through the year availability of deciduous products is at the origin of this abnormality. It is thus to be feared that the tendency will be more and more for agro-industrial interests to sustain that transgenic products must replace

traditional cultivars, leading to the predominance of multinational interests, the modification of human behaviour, ecosystem alterations, product standardisation, more energy inputs in production, increased *anthropic* pressure on the territory, increased use of herbicides (which was not possible before because of the presence of plants that did not resist to their use), probable destruction of valid integrated biological means and methods used in agriculture (e.g. the gene derived from *Bacillus thuringiensis* that produces the B+ toxin killing corn borers). If the use of transgenics would become extensive, there would be easy development of some resistance against fungal, viral and bacterial pathogens towards which, a type of monogenic resistance, predictably surmountable by the plants' pathogens in a few cultivation cycles has been introduced. *In contrario* PDO, PGI and specific products are environmentally integrated and dependent on local culture and uses favouring the preservation of traditional and typical production systems and methodologies and sustaining the maintenance of mostly local genetic variability. Evidently, plant and animal breeding and selection has, since the dawn of civilisation, developed genetic material that we take for granted. These modifications and evolution was though done through *rather slow and well controlled intra-species processes*. *In contrario*, genetic engineering (with the original excuse of meeting health, upcoming diet needs and low production costs), moved into *ad hoc* and rapidly evolving inter-species genetic manipulations, without giving too much thought at the effects that these radical genetic modifications might have on the people who eat these GMO based products and even less at the long-term negative social and cultural influence of such GMOs on our food and beverage habits. We must fully acknowledge the necessity of using biotechnological advances as a possible instrument to satisfy the world population's growing nutritional needs but we must, on the one hand, clearly demand truly independent studies and proper regulation in this intricate affair and on the other hand distinctly separate the food security claims of the industry from the pretension of those who propagate that genetic engineering can create transgenic materials able to substitute quality products such as IGOs, PDOs and other specific products. We can evidently not underestimate the huge interests involved for the multinational chemical and biotechnology companies in the production of standardised foods for human consumption. These companies choose meaningfully to call themselves nowadays *life science companies*. Nevertheless, these interests should not replace those more legitimate of the consumers, at least in Europe and the Mediterranean region, that increasingly expect quality goods to be produced through rather traditional ways, means and approaches; these *local and constant* production practices are most certainly not a synonym of obsolescence!

ENVIRONMENT, SALUBRITY AND GENETIC VARIABILITY

Today, many scientists fear that if genes are inserted in plants, conferring them the capacity to produce their own protection against pathogens or the capacity to produce pharmaceutical products destined for human use, this consequently could mean soil micro-organisms and useful insects could be exposed to these less than natural chemical products with unpredictable consequences. Others think that a gene that confers resistance to insects or to hydric shortage stress, could be propagated to other species by means of casual crossings, becoming itself over-resistant. Others still stand by the point that it is vital to reduce ecological risks that derive from the introduction of genetically modified plants and micro-organisms in the environment. It is natural to try and avoid confrontation in environmental conservation debates and disputes on food biotechnology salubrity and there is a prudent tendency to by-pass confronting the ethical aspects connected to the development of transgenic agricultural products. Indeed, the now historic quarrel on the control of genetic resources and the presumption that biotechnological means will be *the next century's petrol and steel*, overwhelms the importance that many of us give to the problems posed by these developments in the sector of traditional quality foods and agricultural products. The principle of clearly labelling the GM foods received a meaningful support from the President of the Rockefeller Foundation at a speech to the Board of Directors of a major international biotechnology company. We could recall here the phenomenon reported in the press earlier this year, that while all around the United States farmers are sowing millions of acres of a genetically altered corn that protects itself from pests by producing a toxin in its tissues, Cornell University researchers found that this increasingly popular transgenic plant, thought to be harmless to nonpest insects, produces a wind-borne pollen that can kill monarch butterflies – a species that claims the American corn belt as the heart of its breeding range. This study provided the first evidence that pollen from a transgenic plant can be harmful to nonpest species. As such, the study is likely to become part of the growing debate about whether genetically engineered crops may have unforeseen effects on the environment. As an afterthought one can also question if the success of these genetically engineered crops might not to be short-lived if natural selection of pests helps them to quickly adapt to these resistances. Acknowledging the differences of opinion and the insufficient information availability over genetically engineered foods, the Clinton administration recognised for the first time in late July this year that *there is an urgent need to conduct long-term studies on the safety of altered farm products*. Genetically engineered/modified crops and foods have thus created an uproar in Europe while the reactions were very much subdued in the USA. There

are though clearly simmering movements and concerns beneath the surface that can erupt at anytime following new research findings and occurrences. A meaningful growing paradigm in the USA which should not be underestimated is the booming demand in recent years for organic, natural and geographically well defined products. In the dairy and beef sectors in particular the consumers understand that these products come from animals that are not treated with hormones, are fed with not natural feedstuffs and are even excluding synthetic fertilisers or pesticides, not to mention GMOs.

CONCLUSIONS

Fundamentally, typical quality products of plant and animal origin reflect the local agricultural systems' evolution through history. In the Mediterranean region they have been particularly influenced by the environmental diversity and specificity; coastlines, alpine zones, hills, drylands and wetlands, microfauna and flora and the practical agricultural traditions. There are commonly three basic components: the genetic biodiversity, the specificity of the territory and the prevailing management practices; in the case of transformed products, also the technology involved. Evidently, this approach seems too restrictive to our modern time food industries but then it should be recalled that these products have been forged by the ways and rhythms of seasonal life for centuries, by religious and family habits and feasts, and above all, by traditional cooking. Besides, history shows that the products that have reached us through the ages are only those that have been able to evolve and adapt to prevailing technical and socio-economic problems. These are *de facto* the bio-products that come to us through ages of tradition and testing. Unfortunately, the actual commercialisation of these products is at times difficult if not precarious. They are sometimes made to give the impression of belonging to an obsolete culture, in opposition with the messages of modernity advertised for the competing agro-industrial products. The mass media slogans have tried to accustom the average consumer – these past decades – to the dominant product values of standardisation, consistency of taste throughout the whole year, and the refusal of the classical and typical, strong and varying tastes. Industrial economic weight gives the possibility to use at its best, scientific progress, to influence research policies and to apply some very effective commercial and marketing pressure. The birth of the term biotechnologies and that of transgenic products completely inserts itself in a new reality, strongly industrialised and standardised, totally opposed to production methods that depend mainly on the use of local resources, respect territoriality and sustain the environment. In a recent European survey, 78% of the persons questioned consider that GMOs profit above all the multinational companies that developed them. At the same time to the question *what you consider as the ma-*

for stake for Europe's agriculture of the year 2000 nearly 30% of the answers place the conservation of the environment and rural landscapes first, followed by the need of producing *quality foods with a local connotation* (25%); only 1% of the answers place the production of *healthy food* to feed the world in first position. One must note the differentiation made here between quality food (an overall global concept) and healthy food (a much more restricted *quasi-medical* notion). At EC regulatory level a recently adopted regulation (No. 1804/1999 of 19 July 1999) state clearly that GMOs and products derived there-from are not compatible with organic/biological production methods. Typical quality products benefit from their famous names and heritage and the enlightened consumers search for their authenticity. Even if these consumers were a minority their loyalty to traditional products frightens the mass food producing industries; these products can be the locomotive that pulls the less informed consumers back to true intrinsic quality. These typical products interest thus the agro-industrial sector who tries and tries again to imitate them, confusing and modifying production processes to the limits of falsification. In the Euro-Mediterranean region the line of defence of these products against any form of *genetically modified or/and engineered inputs*, might be the last means we have of conserving our rural and gastronomic heritage. ●

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