# The contribution of high-quality food production to endogenous rural development in Umbria, Central-Italy

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# THE CONTRIBUTION OF HIGH-QUALITY FOOD PRODUCTION TO ENDOGENOUS RURAL DEVELOPMENT IN UMBRIA, CENTRAL-ITALY

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**Abstract:**
*In this paper a wide range of local examples on high-quality food production is discussed. It is argued that high-quality food production is a main mechanism for endogenous development. It is although stressed that control over commercialization is strategic.*

**Keywords:**
ITALY, FOOD PRODUCTION, RURAL DEVELOPMENT, RURAL AREAS, QUALITY, FOODS, BEEF, SMALL FARMS, OLIVE OIL MARKETS, TRITICUM DICICCUM, MARKETING.

## Introduction

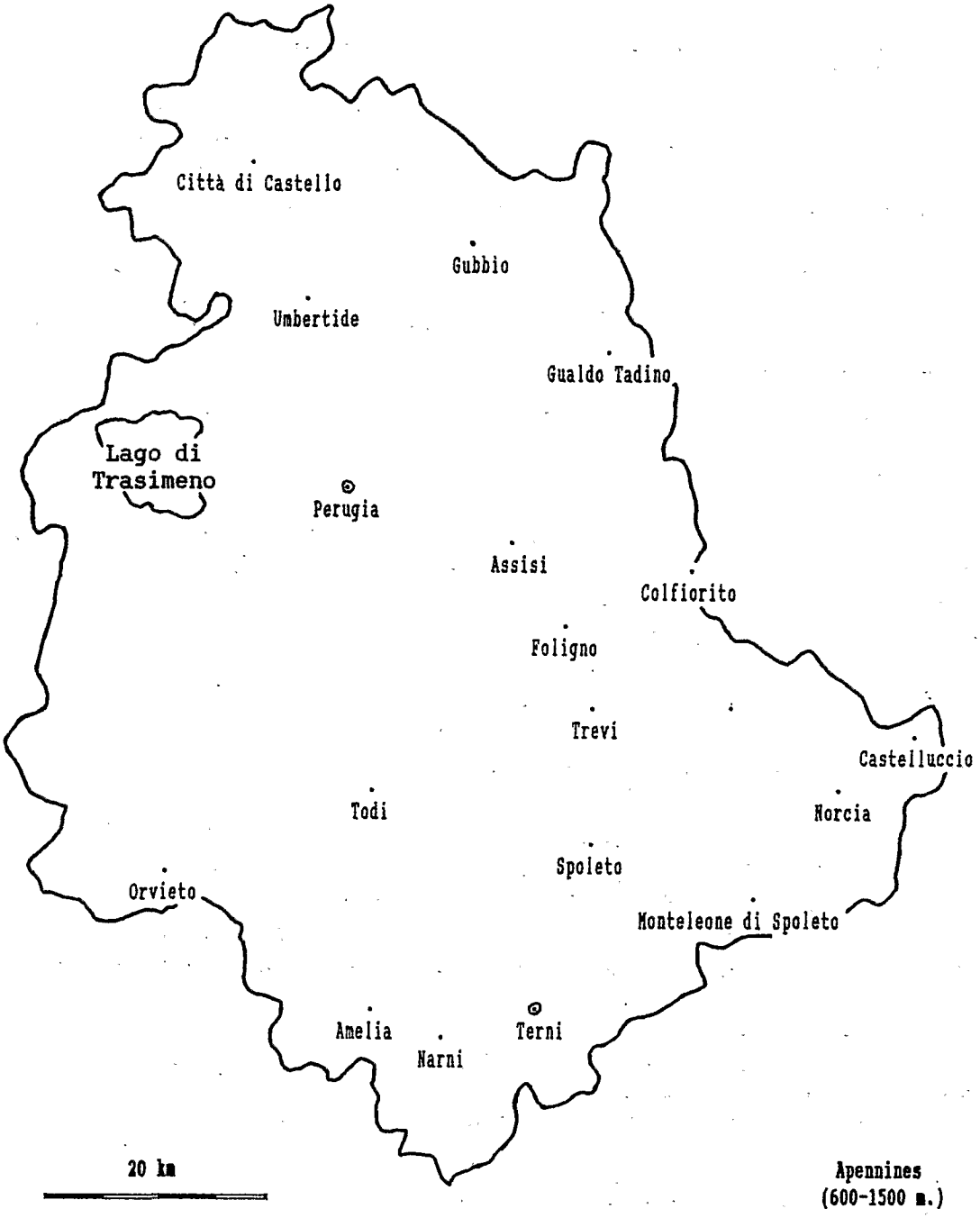
The production of high-quality foodstuffs[1] is the single most important objective pursued in Umbrian agriculture. Both geographical conditions and institutional limitations ensure that any farm strategy or agricultural policy aimed at bulk-production is doomed to fail. At the same time natural conditions favour the production of genuine, tasty and typical products. Umbria has a strong tradition in high-quality food production[2]. The great importance Italian consumers attach to delicacies enhances perspectives for increased local value-adding in agriculture, against a general trend towards industrialization and standardization.

The scope of this paper is twofold. In the first place it is meant as a theoretical contribution to the debate on the concept of endogenous rural development. The paper is structured according to these theoretical considerations.
On the other hand it offers a practical contribution to the question of how endogenous rural development can be propelled by specific research and intervention in the field of

[1] High-quality of course is a subjective term. Here it refers to those food products generally considered to be high-quality or typical by the local population.
[2] The level of food self-sufficiency among the rural population is still very high. This guarantees the maintainance of food quality. Moreover, people in Umbria cherish their typical local products, which gain ever wider reputation. The examples are plenty: lentils of Castelluccio, potatoes of Colfiorito, olive oil of Spoleto, celery of Trevi, white truffels of Gubbio, peas of Bettona, farro of Monteleone di Spoleto, Sagrantino-wine of Montefalco etc.

high-quality food production. Special attention will be given to the linkage between production and marketing.
The discourse is illustrated by examples taken from the following three production sectors: *beef, olive oil* and *farro*. At the end of the paper more extensive information on olive oil and farro is added.

Map of Umbria



*Endogenous versus exogenous*

In international discussions on endogenous rural development the following features have been highlighted (De Haan and Van der Ploeg 1993):

a) it is based on the use of local natural resources and local knowledge;
b) it is characterized internally by stability and sustainability over time;
c) it contributes to the emancipation of the farming population;
d) and finally, it stimulates the local economy.

The following two cases from Umbria show how endogenous development is logically linked to high-quality food production. The first case is that of a farro-growing farm in the Appenine mountains. The second case concerns a large-scale feedlot in the *Valle Umbra.*

1. The Cicchetti family has made a real business out of the production, processing, packaging and marketing of a local grain crop called farro. It is a variety of the cereal *Triticum Dicoccum*, which, because of its rustic nature, is grown without chemical inputs. It has particular cooking characteristics and a unique taste. In the sixties and seventies Mrs. Cicchetti set up a small-scale business in hand-processed grains to finance the household expenditures. Now this petty business has evolved into a home-industry with a range of labour-saving machines constructed by Mr. Cicchetti in order to meet growing demand. Today the farm sells three products: minestra (broken grains), flour and popped *farro.* All products are prepacked and provided with detailed information in the package cover about the production process and with recipes. All ten members of the extended family in some way or another give a hand in the business.
   It is most striking that every stage along-the-chain, including the selling to local groceries and delicatessen shops in nearby towns, is controlled and developed by the family itself; it generates and keeps its own value added. Emphasis on the uniqueness of the *farro di Monteleone di Spoleto* has contributed a lot to its commercial success.
   Lately nearby farmers have begun to grow farro for the Cicchetti's because demand is soring. Farro is now gaining a place among the many genuine food products for which the Valnerina (the part of the Apennines around the valley of the river Nera) is so famous.

In the Cicchetti case local resources and knowledge are valorized[3] to a maximum and there is some spin-off effect on the local economy. It is hard to imagine how rural development could be more endogenous.

2. Giovanni Allevatore is the titleholder of a family-farm where he rears 400 bullocks on 15 ha of land, situated in the Tiber valley, near Perugia. The beef-cattle, mostly part-Limousines, are imported from France through a local wholesale dealer at the price of Lir. 1,500,000 per head. The young bullocks

[3] We use the (incorrect) verb *to valorize here in the sense of the Italian valorizzare, which means to exploit the intrinsic value of a product or resource, to add value.*

have an initial weight of 275 kg and are ready for sale at 575 kg, incurring a final price of Lit. 2,200,000. Actually the margin is hardly enough to make up for feeding costs for although the land is intensively monocropped (corn for silage), a large part of the feed must be bought (compound feed, corn grain, barley). High expenditure on cattle and feed are the cause of the farm's liquidity problems.
But worse than the high costs and low gains is that their former customers (butchers) have lately turned elsewhere because they can earn more money by buying cheap imported beef. This leaves the family at the mercy of dealers. At present only 150 bulls are kept, in order to avoid the `dealers' squeeze' and because "there simply is no money to invest", as Allevatore himself says.
The strategy of large-scale `industrialized' beef production in this period of a low market does not work out for the farm and it may be forced to quit beef production.

At the same time medium and small-scale artisanal breeders in the area manage to continue. They enjoy reliable local selling-networks of butchers and consumers who highly appreciate their use of genuine farm-produced feedstuffs and the exquisite beef of the native Chianina cattle. Although farm-prices are hardly any better here, artisanal breeders at least enjoy the security of selling.
Moreover, quality-oriented farms, which are based on local resources, do not cause the drawbacks typical of intensive feedlots, such as reduction of regional upbreeding[4]; destabilization of the regional economy; reduction in value-adding by butchers[5] ; considerable increase in environmental costs[6] and the degradation of a precious genetic and (agri)cultural patrimony. In other words, large feedlots in Umbria are an example of exogenous rural development in its worst form.

The above two cases evidence a seemingly uncomplicated distinction between endogenous and exogenous farm practices. However, two theoretical questions in the defintion of endogenous rural development remain to be answered, especially where local high-quality foodstuffs are concerned:

1) *What is the linkage with the market?* In other words, can we speak of endogenous development when locally produced high-quality foodstuffs are sold in remote places?

[4] At least 800 well-dimensioned ranches in the Urbian hills and mountains make a living out of fatening the 40,000 bullocks now being imported each year.

[5] 'Modern' butchers tend to purchase hind quarters rather than entire bulls which require much work to process the *tagli difficil,* the less popular parts, into sophisticated ready products. Such butchers rely upon wholesaler dealers who buy from large feedlots in the region or abroad.

[6] Environmental costs are the result of intensive cropping and dumping of excessive dung; most of the feedlots in Umbria are placed right in the middle of the main water-catched area.

2) *Who takes the initiative for production and marketing?* Can we speak of endogenous development if it is initiated and/or controlled by people from outside?

An important element in the answer to both questions is the degree of `knowledge-sharing': to what extent does the knowledge of producers and consumers correspond, or, to put it another way, to what extent do in-betweens determine production methods and the definition of quality?

A high degree of knowledge-sharing seems to be a necessary condition for a reasonable control of the direct tiller/processor over the marketing and design of the production process and thus over farm continuity and farm income. It further favours a sustainable use of local resources because of consumers checking on the origin, genuineness, taste, tenability etc. of the product, all of them characteristics that do not go together with forced farming methods based on external inputs and short-term exploitation of local resources.

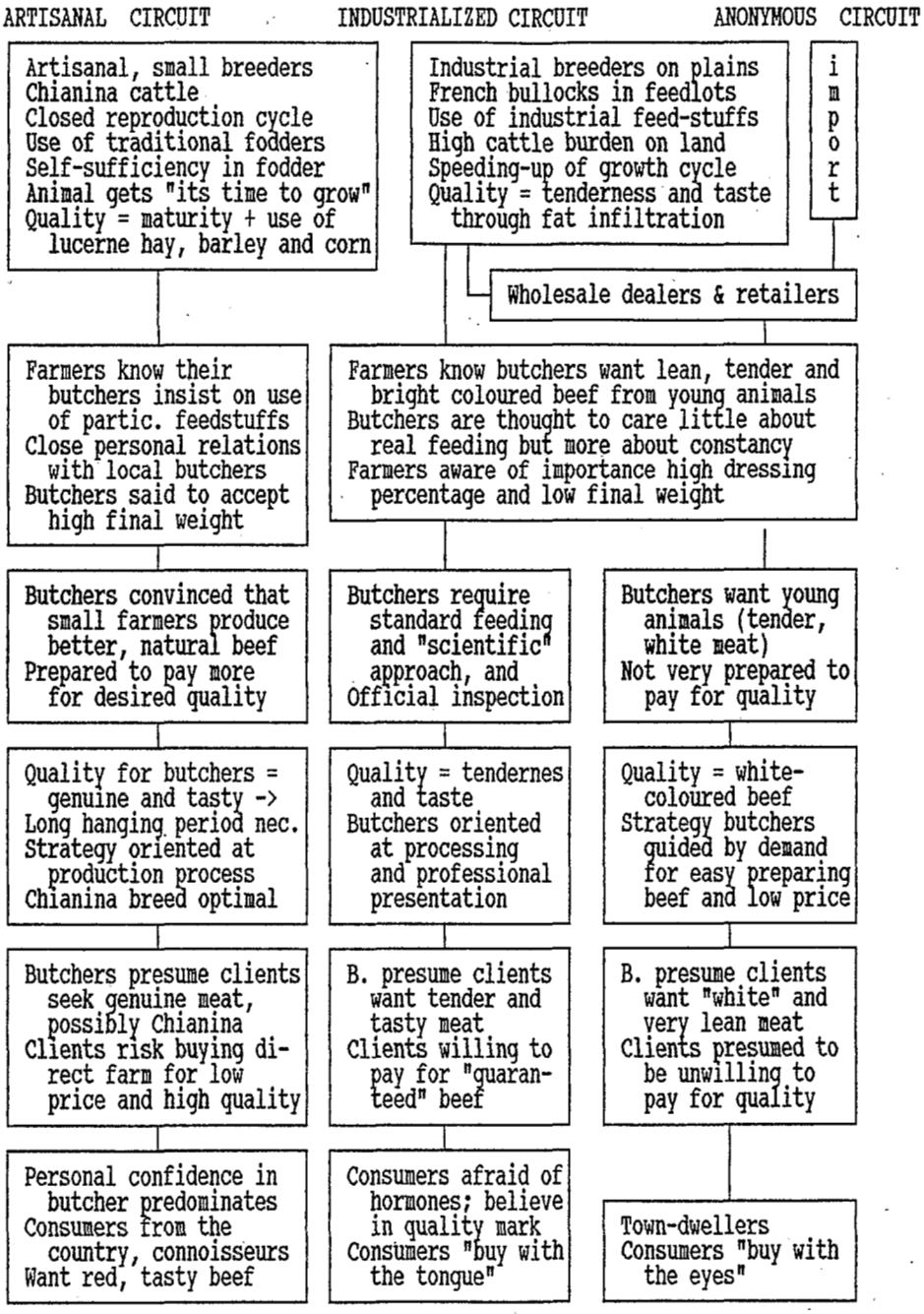
Thus knowledge, understood as an endogenous agricultural resource, gains a particular significance in the case of high-quality food-production.

As to question 1 - linkage with the market - it is evident that the larger the physical distance between direct producers and final consumers (of high-quality foodstuffs), the more difficult it is to create accurate knowledge among consumers about origin, production methods and quality characteristics. And the more difficult it will be for consumers to co-determine the definition of good quality and the design of the production process according to their wishes. In our research this has proved particularly true for a complex product like beef[7].

Figure 1 summarizes different linkages between production methods, distribution circuits, value-adding, and knowledge-sharing around beef.

[7] Beef has many intrinsic quality characteristics (colour, taste, tenderness, fiber, internal fat, visible fat, bactereological and chemical purity, tenability) and there are many factors that influence these (feed, breed, stabling, transport, conservation, hanging period). In addition there is a verbal confusion between the quality of the carcas (dressing percentage etc) and the quality of the meat itself. A second problem is that a large number of (forbidden) chemical growth-enhancers are used and their use is difficult to be verified.

*Figure 1. Production methods, distribution circuits and quality definitions of beef in Umbria*



The olive oil sector in Umbria also represents a clear example of the linkages between production and marketing of high-quality foodstuffs.
The knowledge of Umbrian consumers of olive production is rather extensive. Olive oil is an integral part of the local diet and Umbrian oil is strongly preferred for its good taste and other particularities. Many families, also non-farmers, own a small olive-yard, and if not, they buy their oil directly from a nearby farm. Farmers bring the olives to a local mill and make sure they always draw their own oil.
Since producers traditionally do not treat their olives with pesticides, consumers may not be aware of recent developments in production methods, such as an increased use of irrigation, chemical fertilizers and pesticides in intensive olive-yards. The new methods lead to higher production but also to lower oil quality (chemically verifiable). So local origin and traditional quality no longer necessarily coincide.
Because of such local differences in oil quality (also due to different micro-climates), an initiative was started to get the `*olio umbro'* with the best organoleptic and chemical properties (see end of paper). Certification is especially important for towndwellers, some of whom may not even know that the bottles in the grocery stores and supermarkets contain mainly cheap oil imported from Southern Italy, Greece or Spain and only a minimum part of Umbrian oil (just to add some green colour).
If olive oil production in Umbria should augment, as predicted, Umbrian oil may increasingly be sold outside the region (as happened in Tuscany). At that moment precise product information on the bottles will be paramount for continuing market success and for protection against false competition.

The second question - whether outsiders could ever generate endogenous development - concerns not only farmers but also the role that researchers and public administrators can play in such a process. As far as farmers are concerned the question is more than rhetoric; from the Umbrian experience, it appears that immigrants in particular are the ones who most often make the necessary link between craftmanship and enterpreneurship, between local quality production and market potential.
We would like to give here an example from the beef sector:

A year ago 50 breeders and 15 butchers in the area of Gubbio founded a consortium to promote locally-produced beef. People living in this mountain plain still attach much value to good beef and butchers used to buy local cattle fed in the traditional way: with lucerne, barley and corn grain. These breeders and butchers suffer from competition from butchers and supermarkets who sell cheap beef coming from industrial feedlots and from abroad (sometimes with the pretention to sell it as "*carne nostrale*", local meat!).
The idea to found a local consortium originated from two young farmers from Milan (with a university background) who set up ranches in the area some years ago. They

worked hard to convince local butchers and colleagues that the only way to guarantee their survival as high-quality beef producers was to set themselves apart, to establish a local hall-mark.
The public "mountain administration" (Comunità Montana), was prepared to support the project financially and logistically. The state-hospital of Gubbio showed itself willing to take beef exclusively from associated butchers and so was the Board of the local high-school.
Even though production regulations are not established yet, the mere existence of a consortium has already had some spin-off effect on the local economy. Activity at the local slaughterhouse suddenly augmented on account of non-adhering butchers eager to show their meat was local and due to adhering butchers who do not yet take all their beef from local breeders.
Regretably this promising initiative got into trouble when precise regulations on production methods and inspection were to be laid down. The reason for this is two-fold; on the one hand public administrators (of the Comunità Montana, municipalities and farmers organizations) interfered by securing themselves seats on the council. For reasons of personal gain they sought to control meetings, job assignments, subsidy flows, provision of beef to public institutions, inspection of single associates. On the other hand, the breeders and butchers themselves did not yet feel ready to collaborate on precise contractual terms. Some of them tried to get guarantees beforehand from the public administration on sanitary approvement, selling and so on.
Just as was the case with a former, more large-scale initiative[8] personal relationships (clientelism) and short-term interests again risk superseding formal conventions, however necessary and promising they may be.

The example is evidence that outside farmers can play a crucial role in triggering a process of potential endogenous development. At the same time it shows how other outsiders frustrate the same process. Therefore, at least in the case of local quality labels, decisive support must always come from the indigenous population; from within.
Less complex is the case of high-quality food production by single farmers practising agri-tourism[9] or biological agriculture. In Umbria these endogenous resources were exploited first of all by young people coming from the big towns (Rome and Milan) and abroad (Germany). In the seventies and eighties they bought land in the abandoned marginal areas, rebuilt the houses and set up farms. With time they professionalized and now sell their appreciated "pecorino" (sheep cheese) and biological products at local markets, fairs and to specialized shops in town.

[8] See added chapter on the marketingof beef, paragraph on hall-marks.

[9] Half of all agri-tourism farms have a restaurant where they use their own products; these restaurants are visited also by many non-quests, because of the good food. Such farms also often sell food products directly on the farm.

Even though, financially speaking, such outside investment in agriculture is irrational, they do take place. It takes place because people like the challenge of country-life, the satisfaction of making a good product, and last but not least they like genuine food.

In summary, outside intervention in agriculture and endogenous development do not exclude one another. Again, just as in the case of selling high-quality food products on remote markets, the point is that direct producers can keep some control of the production process by assuring that consumers are well-informed about origin, production methods and quality characteristics. The fact that outsiders organize a revival and transfer of local knowledge does not alter the point.
Today, quality, too, is often defined by intermediaries (merchants; industry) and not by producers and consumers. A high degree of common knowledge among producers and consumers can help to retrieve the lost contact. This process is favoured by the localization of markets of high quality foodstuffs.

*Intervention and the researcher's role*
Being convinced that outside intervention is compatible with endogenous development and is in fact often necessary, two practical questions can be put forward:

1) At what level, and to what degree can intervention trigger endogenous rural development?
2) What is the role of the researcher in this process?

*Figure 2. Levels of systemic integration and corresponding activities conditioning high-quality food production*

World-market prices
Bilateral trade agreements — WORLD
Gatt-negotiations
Economic conjuncture

Foreign trade policy
Prices/subsidies/quota
Sanitary regulations — EEC
Labelling regulations
Environmental regulations
Consumer rights

Subsidies
Defence of national agric. patrimonies
Environmental regulations — NATION
State agri-business
Farmers organizations
Decisions on agricultural services

Distribution subsidies to farmers
Extension service
Agricultural projects — REGION
Agricultural infrastructure
(slaughter-houses etc.)
Subsidies for cooperatives
Subsidies for quality hall-marks
Sponsorship of fairs and meetings

Local sanitary inspection
Agricultural cooperatives — AREA
Private services
Food purchasing policy public institutions
Policy producers & distributors associations
Promotion local agricultural products
Agricultural tradition

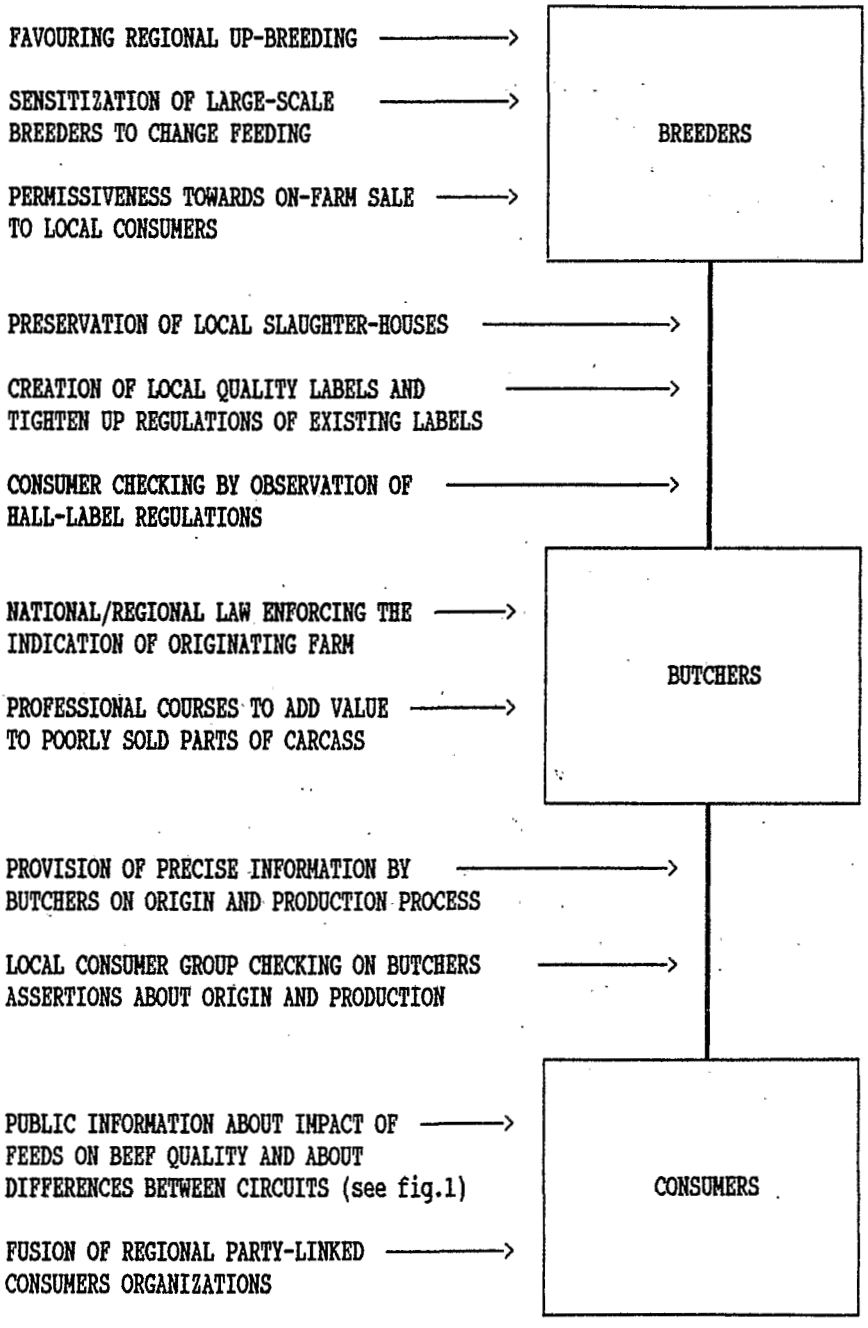
Production process; creativity
Purchasing
Marketing — FARM - FOOD STORE - CONSUMER
Commercial networking
Application for subsidies

The two questions need to be answered together; research could indicate which level of intervention is most relevant in a particular situation and identify the weak spots in the production chain, i.e. in the system of production, transport, processing, distribution, conservation, selling, promotion, legislation etc. Often several parallel production circuits (within the chain) can be distinguished, each having a different attitude towards food quality and as a consequence making a different contribution to the rural development process.
Research could help to locate the places and levels with the best chances of successful intervention. The choice of studying certain levels and activities rather than others depends on the characteristics of the product (for example the spatial extension of production and marketing).
There exists no blue-print for intervention, but it is important to take account of the nature of each level of system integration: national legislation for instance has a widespread and restrictive impact, whereas a local producers-consumers network generates a small-scale and creative effect. Notions of space, time and systemic integration are crucial here.

Figure 2 offers a provisional framework of some relevant activities at various system levels. It permits the researcher to order and visualize the data and to conceive of possible interventions and their impact.
To illustrate the point, Figure 3 presents some of the proposals suggested by us for the stimulation of high-quality beef production in Umbria (Van der Meulen and Ventura 1992). Each proposal can be easily fitted into Figure 2. To pick just an example:

Local slaughter-houses in Umbria, which are managed by the municipalities, at present (1993) risk being closed down because of EC sanitary regulations and money saving by the regional administration. But their existence is essential to the survival of local breeders-butchers networks, and to farmers selling meat directly to consumers. Both circuits point to the production of traditonal high-quality beef and constitute the basis for endogenous development initiatives in the sector. These breeders deliver their animals one by one and transportation costs would be excessive if they were forced to bring them all the way to the big slaughterhouse of Perugia and then have to take them back to the local butchers.

*Figure 3. Proposed interventions for the reinforcement of region-based beef production in Umbria*



The regional, national and EC administrations still recommend a concentration of slaughtering. This implicitly favours large-scale industrial production methods. They state that local slaughter-houses should close for financial and sanitary reasons, but as already mentioned feedlots have a strong negative effect on the local economy as well as on the hygiene and health of the beef[10]! No doubt a macro-economic calculation would turn out in favour of the maintainance of (some) local slaughterhouses in Umbria.

To screen the feasibility of interventions, a good knowledge of the instituitonal environment is required and, related to this, a clear understanding of the cultural aspects of social behaviour. At times a simple regulation at the regional level, for example the legally enforced specification of product origin by butchers (see Fig.3), might function very well, though indirectly, whereas direct involvement by the public administration in certification and production (cooperative stables; official inspection) can turn out to be disastrous (see Gubbio case presented earlier).

Turning back to the specific role of agricultural research in the promotion of high-quality food production, research methods deserve some mention. In many cases high-quality food production in Umbria already (or still) takes place and the potential market is there; the need is to make supply and demand physically meet. For this, crucial limitations and solutions may be found in other fields and at other levels than that of direct production or consumption (for example the case of the slaughter-house). Therefore it is necessary to go beyond the study of styles of farming[11] which in a first stage can identify those styles that merit support (because quality-oriented). Nor is it sufficient to map consumers demand for specific products by means of consumer-panel experiments or surveys. The whole chain of production-distribution-consumption as well as the institutional environment (TATE[12]) and cultural bottlenecks[13] must be examined if one seeks to make a concrete contribution to high-quality food production.

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[10] A greater use of pesticides, industrial feeds and chemical growth-enhancers augments the amount of toxic residuals and diminishes the tenability of the beef. Increased movement and transportation time of the merchandise reinforces the risks of bacterial contamination. Beef quality deteriorates still further (colour; tenderness ) because of the stress during mass-transportation and mass-slaughtering.

[11] See research of J.D. van Ploeg, D. Roep and R. de Bruin on diary farming in the Netherlands. The contribution of E. Pohlmann and D. Roep to the Chania-seminar of CERES is a good example of how a styles-of-farming approach can costitute the basis for action-research at the level of marketing, inter-farming organization, food legislation, cheese-making technology etc. , with the scope to help cheese-making farms in ta peaty national park to set up a DOC-cheese.

[12] Abbreviation of the Technical and Administrative Task Environment, a concept introduced by B. Benvenuti to examine the external institutional impact, in particular restriction and prestriction on farming practices.

*Some conclusions from the Umbrian experience*

Research carried out by the CESAR in Umbria shows that initiatives of the DOC kind, as undertaken by the regional and national administration, represent too weak a defence of local high-quality foodstuffs and of the underlying production process. The beef sector is a classical example of this. Even those consortia or quality labels or hall-marks giving a more precise definition of the product failed to translate their merits towards consumers (for example the 5R mark which promotes Chianina beef-cattle). The self-assignment of quality certificates and the ambiguous intervention of public administrators are the two main reasons for their failure.
On the other hand, actions undertaken by single producers, even when small-scale, have turned out to be much more successful. Direct and frequent contacts among producers, retailers and final consumers guarantee a good exchange of mutual ideas about quality and desirable production methods, leading to a coherent market circuit. At the same time consumers guarantee a quality-enforcing surveillance of production methods and distribution channels. Also successful for value-adding is processing, packaging and direct sale, in order to optimize the use of available family labour and to secure a strong market position.
Large bodies such as farmers unions and public institutions are not eager and not used to stimulating small-scale action at the single farmer or local level. But the well-diffused agricultural extension service could do a lot to this end. It could organize for instance the exchange of information and experience between quality-oriented farmers throughout Umbria, provide information on the legal possibilities for the defence of a local product against false competition, help with product labelling, design a publicity campaign towards local consumers etc. At higher levels of the public administration a consistent framework (legislation; subsidies) for the production and marketing of high-quality food products should be conceived of.
Scientific research can provide useful assistence to both extension service and regional administration by identifying the principal bottle-necks and making proposals for intervention.

To conclude we would like to point out some fundamental prerequisites for the success of any initiative aiming at the promotion of high-quality food products[14].

1) Keep the local market as the base. There are two reason for this: a) extra-regional markets are more capricious so a strong home basis is needed to

[13] In the case of Umbria a cultural bottleneck could be the relatively small impact of written information as compared to face-to- face contacts between producers, merchants, shop-keepers and consumers. Another cultural peculiarity is the great importance people attach to tasty and genuine food.

[14] Taken from H.S. van der Meulen and F. Ventura, "Feed, Breed and Beef; along-the-chian research on the sosial definitions of quality in Umbria, central Italy", forthcoming.

secure selling; b) credibility and attractiveness of the product for outsiders is guaranteed only if it is locally consumed and appreciated and not just invented for tourists.

2) Aim at top quality, instead of a medium quality and high production. This implies also internal discipline in restricting production when it risks outgrowing demand. The Parmigiano-Reggiano cheese is a classic example. The "quality-plus-bulk" option is only feasible in such cases as DOC-wine, where the EC assigns a market-opening certificate but rigorous inspection is lacking.

3) Adapt to the institutional environment. For central Italy this means keeping production and marketing small-scale, based on face-to-face contacts and personal trust. Later on multiple local initiatives can cooperate in order to divide overhead costs (inspection; publicity; export). The so-called "Integral Chain Control", as practised in the cooperative pork sector in the Netherlands (if viable at all) is doomed to fail in Umbria, for institutional and social reasons.

4) Delegate inspection. This is the only credible quality guarantee when the market of the quality product extends beyond the control of local consumers. So far the common practice has been auto-certification. A precondition is that the external inspector be both neutral and commercially interested in scrupulous inspection (having a name to lose on that behalf). University departments for in Italy instance, often seen as the maximum guarantee, can hardly be considered as such.

Delegation helps to keep inspection and certification costs within limits.

## General information on farro and olive oil

### Farro

*Production*

Farro is a cereal grown throughout the Mediterranean basin in the mountain areas. It is highly resistant to pests, drought, cold and poor soils. Its rustic nature makes it ideal for ecological agriculture. In practice, it will only accept well-matured manure; chemical fertilizers and rich soils have an adverse effect on production. This holds especially true for "*Triticum Dicoccum Durum*", the variety grown in the high plain of Monteleone di Spoleto, a small town in the Apennine mountains. We limit ourselves to this variety here.

Once farro was the main staple crop for the Roman "*Plus*" (troops). The words *"farina"* (flour) and *"sfarrare"* (to grind) date from these times. Then farro lost its place to higher yielding wheat varieties.

Until the Second World War the farro of Monteleone di Spoleto was still grown all over the Valnerina (Umbrian Appenines) and used as a fodder crop for sheep and cows, just as barley and rye. People often ate it in the form of "*minestra*" (vegetable soup). Only in periods of need (war-time) did farro completely substitute wheat.
As people left the mountains for Rome and as chemical fertilizing was introduced (in the fifties and sixties) farro growing was abandoned. Perhaps the suitability of the soil (people say it contains `iron') explains its survival in Moteleone di Spoleto. Other farro varieties grown in Umbria disappeared much earlier; some remnants have remained in Tuscany.

Farro yields reach an average of 1500 kg per ha. The crop requires no weeding or other caring. It is sown in October and harvested in August. The classical rotation in Monteleone di Spoleto is: 1st year farro, perhaps a 2nd year barley or again farro, followed by a lucerne/grass meadow in the 3rd, 4th and 5th year.
According to local farmers the most crucial condition for a good harvest is ploughing at the right moment: the soil must be neither too dry nor too moist. "Every piece of land has its own right moment to plough".

*Processing*
Traditionally women take care of the laborious processing of the harvested farro: threshing, re-threshing[15], breaking, several siftings and dusting. The art is to obtain broken grains with the right dimension. The remaining farro is processed into flour for baking.
Actually the two main farro producing farms in Monteleone di Spoleto have developed small machines with which they execute the several stages of processing. Thus processing has become the domain of the men. Packing, direct selling and administration remain the competence of the farm women.

*Markets*
Both the poverty-image of farro and the fact that processing requires a lot of work accounts for its near extinction. But nowadays the cereal is becoming revalued by consumers as a healthy delicacy and it makes a good price. This revival concerns not only the farro of Monteleone di Spoleto, but also the less precious farro grown in the Tuscany, and lately also elsewhere in Umbria.
The distribution circuits of Umbrian farro are on-farm sale, local food stores, local fairs, delicatessen shops in Umbria and shops in Rome and Milan. The Cicchetti family of Monteleone di Spoleto, a major farro producer, have obtained a strong position on all of these markets, or rather have created them. The commercial succes of their product

[15] Farro has two layers of chaff, as indicated by the name *Dicoccu*.

has two main reasons. The product is accompanied by precise information on origin, production and quality characterisics and recipes; and the vacuum packing makes it tenable and handy, both very important criteria for shop-keepers. Recently some farmers further away in the Apennines started growing farro for the Cicchetti business.
Other farro farmers in the plain of Monteleone di Spoleto (except for those who use it as fodder) operate only on the bulk-sale circuit to local food stores.
Elsewhere in Umbria farro production concerns exclusively ecological farmers, who introduced the crop from Tuscany. They sell the hand-threshed grain in small bags to delicatessen shops, but most of all at regional fairs and weekly markets. As said above, this farro is a different variety to that of Monteleone di Spoleto. It is not *durum.* Since the regional administration of Umbria set a subsidy on farro growing in order to stimulate ecological agriculture, many farmers introduced the crop, non-ecological farmers included! Now overproduction has ruined the market for common farro, bringing prices back to the level of other cereals. Farmers no longer manage to sell it and are again forced to use it as fodder.
The farro of Monteleone di Spoleto has not suffered in this way since it is a unique and finished product with specific (though limited) market outlets; its price has doubled in the last four years.

## Olive oil

*Olive production and oil quality*
Olive growing is probably the oldest agricultural activity in Umbria. It manifests itself either as a companion crop - traditionally with cereals but nowadays rather with meadow - or as an intensive plantation crop. The poor soils and steep slopes on which olive trees are grown in most cases do not permit any other agricultural use. Olive trees in Umbria constitute not only an essential element in the cultural landscape but also in the process of endogenous development based on high-quality food production.
Olive growing actually involves 25,000 farms and 70,000 hectares. The usual dimension of the olive-yards is 1 ha or 200 trees. A lot of non-farming families own small olive-yards. Part-time olive growing has a long tradition in Umbria. On the other hand there are specialized olive farms of more than 100 ha, which account for about 30 percent of total oil production. These big holdings once belonged to absentee land-owners from Rome, who sold the oil in the capital (so there is nothing new about recent initiatives to sell Umbrian olive oil as an expensive delicacy on extra-regional markets!).
Production now covers an estimated 70 percent of regional consumption. Most of the oil is sold on-farm to local consumers.

The interplay of natural conditions and age-old farming practices explains the high quality of Umbrian olive oil. The occasional severe winters allow a process of natural

selection, leaving only resistant, low-yielding varieties like the *moraiolo* and *frantoiano.* These cultivars produce an exquisite oil. Moreover, the cold autumns slow down ripening and allow for the so-called brucatura, the picking by hand of half-mature olives. Special pruning techniques keep the olives within reach of the pickers. The combination of premature picking and instant processing are essential in preserving the potential high quality of the oil[16].
These practices contrast sharply with those in the other Mediterranean areas, where farmers wait for the ripe olives to drop from the high trees.
The best olive oil of Umbria comes from the west slopes of the Appenines, from the densely planted strip between Assisi and Spoleto (250 to 500 metres a.s.l.). The soil is stoney and the micro-climate is perfect (coverage against the cold *tramontana* winds and attacks of the *Dacus Oleae*).

85 percent of Umbrian olive oil is classified as *extra-vergine,* i.e. deriving from the first pressing and containing less than one percent of free acids. Its typical taste is the result of low acidity, specific polyphenol content, fruity aromats and slightly prickling substances. The high quality fetches prices between 7 and 10 ECU per liter (December 1992).

Traditionally the olive tree is submitted to few interventions, only the pruning of the offshoot and the removal of dead wood from the trunk. Pruning is not a time-bound activity and is done in the slack winter months. This explains the important place of olive growing in part-time farming.
The only time-bound activity is harvest, which has to be completed within a period of 20 days, between 10 November and Christmas. Usually family members and neighbourers are mobilized; they are paid half the harvested quantity (about 7 liters of oil per day). On the large plantations fixed and seasonal labourers are employed.
People hardly use chemical substances, only copper sulphate, if they treat at all.

*Recent changes in olive production*
The production level of olive oil in Umbria has remained more or less stable for many years, but with strong cyclical variations due to incidental frosts (about every 15 years) which decimate the number of trees.
In the early eighties a decline in olive growing took place, because of high labour costs and low prices. The devastating frost of 1985, however, preluded a historic reconstruction of the sector: since that year 30,000 hectares (3,700,000 trees) have

[16] Experiments have shown that half of the final oil quantity depends on the moment of harvesting, 20 percent on storage conditions and 30 percent on pressing techniques. The moment of harvesting inn particular determines the flavour and taste of the oil; the earlies the better. Storage must be as brief as possible in order to limit fermentation. The best pressing techniquie is cold stone milling, which causes least oxydation (Informatore Agrario, 1990, 46:24).

been replanted with the aid of national and EC subsidies[17]. These trees are now beginning to produce.

There are two aspects to the restructuring of existing plantations: People have concentrated formerly dispersed trees onto smaller parcels, liberating land for other use, with production still meant for auto-consumption and traditional agricultural practices, or they have set up intensive plantations (*oliveti specializzati),* destined for market production. So far some 1,000 ha have been planted with the use of subsidies and another 1,000 ha without. Planting density, just as on the small plots, has increased from the traditional 10 x 10 metres to 6 x 6 or even 6 x 3. Pruning changed from the traditional three-bough shape to the modern mono-crown type. Plant height does not exceed 3,5 metres in order to facilitate pruning and picking. In some cases drip-irrigation is used to shorten the period of non-production (after planting) from 7-10 to 3-4 years. The propensity to use chemical fertilizing and treatments is clearly greater in the case of intensive plantations[18]. Increasingly new varieties, more appropriate to changed agricultural practices are used. Mechanical harvesting in particular is meant to be part of the new production methods. The high labour costs of harvesting is the major obstacle for big olive growers.

Intensive olive production requires new knowledge and practical skill. Pruning for example is completely different. Many new plantations have not entered into production yet and farmers are still learning and experimenting. Only a few of them have reached the level of complete mastery of the various operations. Another difference with traditional olive growing is the cost structure: physical inputs per hectare are higher (chemicals; machines; water) whereas outside labour requirements are lower.
The promotion of new production methods implies two major risks:

1) traditional knowledge might become discredited even before the new technology has proved itself valid; a technology which anyway can only be introduced in selected places;
2) oil quality, organoleptic characteristics as well as genuineness, will probably diminish.

*Processing*
The processing of olives into oil takes place in the 300 mills (*frantoi)* scattered throughout the region. Many of them, the smallest ones, are located on the farm. Here

[17] EEC regulation 1654/86 and regulations 590/81 and 198/85 of the Regione dell' Umbria.

[18] The location of the intensive plantations (humid plains) and the use of irrigation encourage major attacks by the *Tignola fly and the Dacus Oleae.*

the practice of discontinuous milling (removing the pulp by hand) and the use of cold stone-wheel pressing are predominant. The milling capacity is about 200 litres a day. The cooperative and industrial mills have much higher capacities, about 10,000 litres a day. Here modern milling techniques are used.
Recently, some big mills have returned to stone-milling because of the better quality obtained. Another sign of increased quality orientedness is that the famous *Consorzio Olivicoltori di Spoleto, a major bottler of local oil, has started paying producers according to the milling technique used (about 10 percent more or less).*
As a rule a big grower brings his olives to a large mill. He withdraws the oil only if he has the means to bottle and sell it himself. Small producers bring their olives to the small mill and withdraw all the oil, to be consumed in the family and to be sold on the farm. Traditionally some 10 percent of the oil is left to the mill as a payment for the costs, but increasingly growers pay cash, because of the better price they fetch on the farm.

*Marketing*
Roughly speaking four distribution circuits can be distinguished. The first and largest market is that of direct sale; 70 percent of all olive oil produced in Umbria passes directly from growers to final consumers, mostly local people. Part of the transfer is in payments to the pickers. Interested consumers put in their orders in advance each year and always go to the same producers to make sure of obtaining the appreciated oil.
The existence of hundreds of small olive mills permits growers to obtain their oil without great transportation costs and without the danger of their oil being mixed up with that of other growers.
Direct sale has all the advantages of the short circuit (see Figure 1) where consumers know exactly what they are buying and where commercial quality marks are superfluous.

The second important distribution circuit is a peculiar one. Part of Umbrian olive oil (20 percent) is used by the food industry (Farchioni, Monini, Venturi) to mark up the cheap *extra-virgin* oil from southern Italy, Spain and Greece. The marking up essentially serves to fool consumers; it provides the appreciated greenish colour to the oil. Since bottling plants are located in places like Spoleto and Trevi people may really believe it is the local high-quality product but costing only half the normal price. Bottles with ever more quality-inspiring etiquettes are used to pick a grain from the delicatessen market.
The moment that a DOC-certification for Umbrian olive oil starts to function (like the COREOL one), the industrial circuit will have to change strategy. In fact, the first bottles of pure *olio extra-vergine umbro of Farchioni are entering the supermarkets, for only Lit.8,500 (=5 ECU).*

In recent years a third market has taken shape. The increasing general demand for *extra-vergine olive oil together with a gradual increase in regional production creates the possibility of market extension for the best of Umbrian oil, especially outside the region. This development asks for an intra-regional differentiation on the basis of general quality criteria.*

Quality control is actually taken care of by two associations, the ASSOIL[19] and the COREOL[20]. Both are born out of EC funding[21]. The first works on the production side and the second promotes the sale of Umbrian oil. On the request of single growers the COREOL takes oil samples for chemical analysis and tasting. If the oil meets the quality criteria as laid down in the regulations (see Figure 4) the COREOL provides the certificate *olio tipico umbro.* Bottles and tins are marked with stickers. The COREOL sets a minimum price for bottled or tinned oil (9 ECU per liter in 1992).

At this moment the COREOL is still superfluous, because it hardly manages to obtain the good oil from the circuit of on-farm sale (in bottles as well as bulk), as shown by Figure 5 (only 20 percent of the oil produced by its members). The certificated oil actually is sold in some delicatessen shops in Umbria and Rome, but producers say they have problems to sell it at the established price, which is 10 percent above 'the' market price. In the near future the COREOL DOC-mark may gain relevance, but probably the selection criteria will have to be tightened, and from that moment it will make more sense to establish intra-regional DOC zones, each one with its own oil characteristics.

[19] The Associazone Olivicoltori coordinates technical assistance to olive growers, such as guided pest control against Dacus Oleae (a fly causing acidity and bad taste of the oil). It further offers to producers and millers on the relationship between oil quality and conditions of picking, transport, storage and milling.

[20] The COREOL (Consorzio Regionale di Olio Extra-Vergine di Tipico Umbro ) consists of single producer members and some quality-oriented cooperative mills. Lately growers' unions also have stpped in.

[21] By the Mediterranean Integrated Plans and by EEC regulation nr. 1921/91 and following.

*Figure 4. Selection criteria applied by the qualtiy hall-mark "olio tipico umbro" of the CO.RE.OL. (1992)*

| | |
|---|---|
| Colour: | green-yellow |
| Flavour: | fruity, fresh |
| Taste: | fruity, slightly bitter, slightly sharp, leaving behind the taste of fresh fruit |
| Free acids: | lower than 0.5 gram % |
| Peroxides: | less than 12 per kg |
| Rifraction index | lower than 1.4674 |
| Spectofotometry: | K 268 lower than 0.20 |
| of U.V. | K 232/K268 = 6 + 12 |
| | K lower than 0.01 (degree of oxidation) |
| Polyphenols: | higher than 150 and lower than 300 milligrams/kg |

Composition in percent of fatty acids:

| | |
|---|---|
| C16:0 | between 10.0 and 14.0 |
| C16:1 | between 0.5 and 1.0 |
| C18:0 | between 1.6 and 3.0 |
| C18:1 | between 77.0 and 82.0 |
| C18:2 | lower than 9.0 |
| C18:3 | lower than 0.8 |
| C20:0 | lower than 0.8 |
| C22:0 | lower than 0.8 |

Compositional rates between fatty acids:

| | |
|---|---|
| C18:1/C16:0 | between 5.5 and 9.0 |
| C18:1/C16:1 | between 81.0 and 138.0 |
| C18:3/C16:1 | between 0.8 and 1.1 |

Allowed scores on second quality-check (bottled oil):

| | |
|---|---|
| Free acids: | 0.7 gram % instead of 0.5 gram % |
| Peroxides: | 20 instead of 12 per kg |
| Polyfenols: | at least 100 mg/kg instead of 150 mg/kg |

Most critical parameters for admission (in practice):

Polyphenols
K
Peroxides
C18:1 (oleic oil)

A fourth and very promising distribution circuit is that of big farmers who have started to bottle and sell under their own name, after the example of the wine sector. Besides bottled olive oil they usually also produce spiced oils, sauces based on olive pulp and other olive derivates. Selling occurs on the farm, at fairs and through delicatessen shops in tourist places.
This circuit unites the advantages of direct sale with maximum value-added on the farm, creating employment in areas where once people abandoned agriculture.

*Figure 5. Olive oil production by COREOL members and the quantities analyzed resp. admitted by the consortium (x 1,000 kg)*