

I wish to express my gratitude to all the people of PARC who fruitfully helped me to understand the socio-economical situation of the Palestinian Occupied Territories: really, I have learnt a lot.

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STRATEGIES FOR QUALITY PROGRESS IN OLIVES, OLIVE OIL, ALMONDS AND DATES PRODUCTION IN THE PALESTINIAN OCCUPIED TERRITORIES (WEST-BANK)

1. Introduction, methodology

This quality mission has been commissioned by Oxfam Wereldswinkel (Belgium) and CTM Altrmercato (Italy), two Fair Trade Organisations that have been importing, for around ten years, several agricultural products from Palestinian farmers, through the intermediation of the Palestinian Agricultural Relief Committees (PARC).



Figure 1: logos and products imported from Palestine by CTM Altrmercato and Oxfam WW

The objective of the mission was to understand as well as document the working procedures (at field level, post-harvest and processing) of the food chains concerning almonds, dates and olives-olive oil.

In particular, the survey focussed on olive oil, that at present does not completely fulfill the quality parameters as expected by the buyer (Oxfam WW). Therefore, a thorough analysis of the constraints along the olive oil food chain has been carried out, resulting in specific advices of good practice to produce high quality extra virgin olive oil, that are provided in this report.

The feasibility to grow the above mentioned crops in compliance with the standards of organic agriculture has been also assessed, together with the Arab Agronomist Association - AAA, the “technical arm” of PARC, that is currently designing a project of conversion to OA in several areas of the West Bank.

The mission lasted 16 (+1) days: the detailed itinerary is in Annex I.

In my journey through the Palestinian Occupied Territories I have been always accompanied by PARC members, sometimes from people of the quality department of the Al Reef Co. (the company that is legally responsible for the marketing issues, on behalf of PARC), sometimes from people of the Palestinian Farmers Union – PFU,

organization under the umbrella of PARC, and in charge to keep the contacts with the farmers, to arrange their production and to carry out the first quality assessment. PFU has at least one office in each Palestinian district.

I have visited several production sites of olives and olive mills throughout the West Bank (olives harvest and processing of it were occurring during the mission time); then I have visited the PARC pack-house, where the oil is temporarily stored and bottled. I have also visited the most important almonds production area, where shelling is carried out as well (Jenin area); then, I have visited the dates production area, in the Jordan Valley, as well as the pack-house where dates are processed and packaged.

During these visits I have always met the farmers and discuss with them about quality issues, and how to improve it according to what the European market requires in terms of hygiene, sanitation and organoleptic characteristics.

2. Almonds

2.1 Field production.

The almond growers of the Jenin district are distributed in nine villages. The farmers of the villages Zboobah, Aneen, Al-Kfeer and Taibeh are already organised in co-operatives; other groups of farmers are now creating co-operatives under the boost of PFU-PARC.

The average farm size is around 5 dunums¹. Farmers usually grow olive and almond trees, but they are realising that olive is not profitable as in the past, and the present price of almonds, both in local and international market, is good. Furthermore, almonds have an interesting price in the local market, especially when the fruits are sold as green-unripened, allowing the farmer to get income earlier.



Figure 2: young almond trees in Zboobah (Jenin)

¹ 1 dunum = 1,000 m²

As a result, farmers have been planting new almond trees, over the last 3-4 years, especially after the PARC initiative to sell to the farmers good-quality seedlings of the improved cultivar *Um El-Fahm*, at the 20% of the nursery price (original price of one seedlings: 1 USD): this resulted in a significant increase of the area grown with almond trees in the Jenin district; it is therefore expected a yield of around 10 tonns of fruits on 2004, and 15-18 tonns after 4-5 years, when all the trees will be fruitful. After interviewing the farmers, it resulted that they would be prepared to plant even more almond trees, provided that some financial support is made available, at least to buy the seedlings.



Figure 3: lines of almonds in Zboobah (Jenin)

The yield in nut is around 45-50% of the total weight of the fruit, because of the genetic characteristics of the cultivar *Um El-Fahm*.

The usual agricultural practices adopted by the farmers are rather simple: fertilisation is carried out every 2-3 years, mostly by the sole application of animal manure; plant protection is carried out sometimes by chemicals, especially against the most harmful pest, i.e. *Eurytoma amygdali*, the so-called "almond wasp". Soil is ploughed two to three times per year. Pruning is made once per year, with the aim to maintain the "cup" shape of the canopy. Irrigation is not applied. Mature fruits are hand-picked between July and August.



Figure 4: larvae of *Eurytoma amygdali*, the most harmful pest for almonds in Jenin

It has to be underlined that the Jenin farmers sell the almonds only to PARC (through the Al-Reef Co., the PARC market agency). They prefer this since PARC pays a higher price than the local buyers and, above all, quickly, whereas the local buyers take several months before paying the whole agreed amount.

In general, all the farmers complain about the system of closures, that is progressively built up by the Israeli government: such system, they say, impedes with growing intensity the circulation of the agricultural products throughout the West Bank, being an obstacle for the quality of it as well.



Figure 5: group of almond growers in Zboobah (Jenin), to the right the PARC agronomist

2.2 Shelling.

Almonds shelling is carried out by women associations/co-operatives of the villages of Zboobah and Aneen.

Farmers remove the leathery exocarp (hull) from the fruits and make a first selection on the field, discarding the fruits damaged by pests/diseases.

The PARC supervisor buys the hulled almonds from the farmers after screening it, then shares it out to the women families, each of them composed by 15-20 people.

The hulled almonds are placed on the ground, upon plastic sheets, and left to dry for 4-6 days under the sun: meanwhile the women remove all the foreign matter.

After that, the almonds are gently shelled by hand, by making use of the bottom of one glass.

The resulting nuts (also known as “almond meats”) are then separated in 5 classes, by the women who have been specifically trained for this. While handling the shelled nuts, the women always wear latex gloves and pay utmost attention to keep the product away from domestic animals, insects, birds, etc.



Figure 6: group of women in charge of shelling the almonds, in Zboobah (Jenin). To the right, the men in charge from PARC to organise and supervise the shelling operations, also almonds grower.

Selection classes are:

Class 1: nuts without any defects (export quality); class 2: nuts with shape not appropriate for export, but acceptable in the local market; class 3, 4, 5: nuts with several defects (broken, diseases, pests, etc.).

The class 1 nuts are placed in open air for around 3 hours, under direct sunlight. Then, nuts are moved inside the houses in airy places, for 3-4 days.

At the end of the process, the PARC supervisor makes a sensory check to assess the actual moisture of the seeds.

When ready, nuts are placed in 15 kg double polypropylene bags and transferred to Al Ram-Ramallah, at the PARC pack house, where products are carefully checked again by trained workers, before to be weighed and packed in the ultimate packaging, represented by 25 kg jute bags for export.

On the carton containing the jute bag, two labels are stuck with the following information: name of exporter, name of importer, name of product, net weight, production and expiry dates, one letter (A, B, C, D) identifying the group of producers by the name of the village (see Table 1):

Letter on the label	A	B	C	D
Name of production village	Zboobah	Aneen	Al-Kfeer	Taibeh

Table 1

Prior to withdraw the shelled almonds by the women co-operatives, the local supervisor takes preliminary samples of the product that are carefully examined by the PARC quality supervisor. Once defined the suitable amount of product, the women cooperatives are paid accordingly.

The actual work capacity of the women teams comes to around 1 tonn of in-shell almonds per one day.

The class 2 nuts are marketed locally through PARC.

2.3 Potential and constraints of organic production of almonds.

2.3.1 Agricultural production.

PARC aims at growing almonds through the method of organic agriculture. At present, one agronomist is assisting the Jenin farmers in order to set up all the suitable agronomical techniques to start the conversion process and accomplish the organic certification of the products (in compliance with the EC Reg. 2092/91).

Some farmers have already started to make their own compost, based on animal manure and crop residues. In order to improve the quality of it, it would be useful to include the husks in the composting biomass: this would also help to properly recycle such olive oil by-product, which is abundant in the area, and likely to cause pollution if badly managed.



Figure 7: the recycle of husk may be environmentally risky. Turn it into organic compost could be a sustainable solution.

Given the local agricultural conditions, the almond crop may be easily grown according to the organic standards, however the control of the almond wasp (*Eurytoma amygdali*, Figure 4) is at present rather problematic in the visited area, without the use of agro-chemicals forbidden in organic agriculture (sometimes, even the chemical pesticides fail). This harmful hymenoptera fulfills almost the whole life cycle inside the nut, making it quite difficult to prevent irreversible damages to the fruit.

To my knowledge, there are not available methods of controlling such a pest in organic farming. Therefore, specific investigation as well as on-farm field experiments are needed on how to control the wasp under organic standards (e.g. by use traps to monitor the presence of the adults in combination with timely application of biopesticides, etc.). The hand removal of the infested almonds (from soil and trees) is being already carried out, but this does not suffice to keep the pest population under the threshold damage.

After reviewing various scientific work on the subject, the University of Thessaloniki (Department of Agriculture, Laboratory of Applied Zoology and Parasitology, 540 06 Thessaloniki, Greece) shows to be the most prolific research body on almond wasp. Thus, it is recommended to include an experimental study of biological control of *E. amygdali* in the AAA's project on organic agriculture, and linking it with the University of Thessaloniki.

2.3.2 Processing.

There are not particular limitations to process the almonds under organic standards. Similarly to field production, the whole process has to be controlled by an authorised Control body.

Handling, shelling, packaging and storage of organic almonds must be always separated from the conventional ones, in time or in space, and all the required precautionary measures have to be undertaken and recorded in written form (Plan of Precautionary Measures).

2.4 Recommendations and remarks.

The only noteworthy weak point of the observed product line of almonds is the storage of the shelled nuts in the Al-Reef Co. store, in Al-Ram, waiting to be exported: at present, almonds are stored in bags at room temperature. However, the best way to store shelled nuts is cold storage, at 6-10 °C: under such conditions, nuts may preserve its original quality characteristics (flavour and colour) over 8 to 10 months; on the contrary, when storage temperature exceeds the above mentioned range, the product decay is rather fast, due to the easy fats oxidation being the nut without its shell².

To avoid this problem it is therefore highly recommended to export the almonds straightaway after the shelling. To this purpose, the PARC quality supervisor ensures that, given the PARC internal organisation, all the almonds are ready to be exported within the end of November at latest, provided that the purchasing order is

² Personal communication by Mr. Stefano Tironi, general manager of La Dolciaria Bergamasca (LDB), processor of almonds on behalf of CTM

done within March/April of the same year. By doing so, the original quality of the almonds arriving in Europe will be preserved.

As general remark, it is worth to say that the Israeli closures are jeopardizing product quality, by slowing or even impeding the circulation of the goods.

3. Dates

3.1 Field production.

The dates marketed by PARC (Medjoul variety) come from the Palm Tree Farmers Association - PTFA, the 33 members of which live in the Jordan Valley, in the villages of Jiftlik, Marig Nageh, Marig Gazal and in the municipality of Jericho.

In general, the cultivation of the palm tree is highly labour demanding: farmers and their relatives are busy with it almost every day of the year.

The agricultural practices needed by the crop are: daily drip irrigation, fertilisation, pruning, harvest of the pollen by hand, cold storage of the pollen, pollination by hand after one month (when the female flowers are fully mature), flowers thinning, bunch hanging, putting nets around the bunch, daily harvest from half September to half November, care of the ripen dates, post-harvest sorting, transport to the PARC pack-house in Jericho.



Figure 8: agricultural area of the Jiftlik village, nearby the Jordan Valley

Irrigation is crucial to sustain the palm tree growth and dates production.

At present, PTFA farmers are suffering the strong competition for water by the Israeli settlers, who are pumping a plenty of good water (fresh water) in the bottom

of the Valley to grow highly water-demanding crops as seedless grape, mango, palm tree, citrus, banana as well as vegetable crops.

Usually, Palestinian villagers in the area are not allowed to dig new wells, so they have to rely mainly on already existing wells or watering systems implemented by the International Cooperation. As a result, water quality is also lacking. In Jiftlik, for instance, the village I have visited, the Israeli water policy resulted in groundwater salinisation, forcing the PTFA farmers to water the palm orchards with salty water: it goes without saying that such practice is likely to jeopardize the soil over the following years.



Figure 9: Jiftlik rural area, the landscape is rather dry

Fertilisation is currently based on chemical fertilisers, however one of the farmers told that several times he successfully replaced the chemicals with animal manure: in fact, in that area animal manure is easily available, due to the presence of plentiful livestock, as sheep, cattle and chicken.



Figure 10: PTFA palm orchard in Jiftlik



Figure 11: PTFA palm orchard in Jiftlik

In general, the farmers are glad about dates prices and would be prepared to increase production, by planting new palms, as they are actually doing. They have been properly trained by the PARC quality staff to deliver to the pack-house products already in line with the quality requirements for export.

The farmers complain with the neighbouring Israeli settlements due to the competition for water, as stated above, being water a very scarce resource in the Jordan Valley.

3.2 Processing.

Processing of dates is carried out in the PARC pack-house in Jericho, under the straight supervision of the PARC quality supervisor.

The processing consists of washing the dates coming from the field (Figures 12 and 13); drying the dates up to reach a moisture content of around 35-40% (Figures 14 and 15); first sorting and grading (Figure 16); disinfection by fumigation (Figure 17), second sorting (Figure 18), packaging (Figure 19), cold storage (Figure 20).

After being washed with running drinkable water, dates are partly dried under the sun, then are placed in an airy plastic tunnel for 2 to 6 days, depending from the season, to complete the drying process. The quality supervisor checks the fruit moisture by high accurate instruments.

A women team makes a first sorting and grading, separating the dates in 4 classes: class 1: dates of export quality; class 2: dates for local market; class 3: dates not yet properly dried (they go back to the drier); class 4: dates not suitable for market.

All the workers wear latex gloves to handle the dates.

The class 1 dates are placed in plastic boxes with holes; the boxes are stacked to form a 1 m³ block, that is covered by a nylon film. Inside the block, phosphine is dissolved for 24 hours. After this time, the nylon film is removed to allow ventilation of the product, for several hours.

Later, another women team makes a second careful sorting and the final packaging. The product is finally placed in cold store, at 2-6 °C, waiting to be exported. On the final carton, a label with the same characteristics that have been described for almonds is stuck. The key for letters interpretation is in Table 2.

Letter on the label	J	MN	MG	JR
Name of production village	Jiftlik	Marig Nageh	Marig Gazal	Jericho

Table 2



Figure 12: dates just arrived from the field



Figure 13: washing



Figure 14: first drying under sunlight



Figure 15: ultimate drying under plastic tunnel



Figure 16: first sorting and grading



Figure 17: fumigation with aluminium phosphide (Phosphine)



Figure 18: first sorting



Figure 19: packaging



Figure 20: cold storage

3.3 Potential and constraints of organic production of dates.

3.3.1 Agricultural production.

Likewise the almonds, PARC aims to grow organic dates.

After interviewing the farmers, organic farming seems to be quite suitable for the palm trees in the Jordan Valley, especially because there are not particular problems with pests and diseases affecting the crop.

Chemical fertilisation could be replaced without difficulty by compost, which could be prepared by animal manure plus the abundant crop residues from palms cultivation.



Figure 21: Medjoul dates from Palm Tree Farmers Association

3.3.2 Processing

There are not particular limitations to process the dates under organic standards. The same considerations that have been made for the processing of almonds are valid for dates.

3.4 Recommendations and remarks.

The kind of carton container used for dates sold to CTM should be replaced by a new one, hand-made, in order to provide the dates with added value. Thus, under the boost of PARC, the women clubs are manufacturing samples of containers, made up of straw, palm leaves, palm bunches, etc. The samples will be sent to CTM for approval.

4. Olives and olive oil.

4.1 Field production.

Olive tree was under cultivation in Palestine long before the time of earliest recorded history, originating in the eastern Mediterranean area.

Olive trees are well acclimatized to low rainfall, drought and hot summers prevailing in the region, making them the most important cultivated trees. The tree may live for many hundreds of years, if the top die a new tree often develops from the roots.



Figure 22: Palestinian age-old olive tree

Olives are definitely the major crop in the rainfed areas covering almost the half of the plant total production in the West Bank. Their production provides income for thousands of farmer families. As a whole, olive cultivation, picking, pressing and marketing involves more than 100,000 people and is an important economic base in the West Bank.



Figure 23: Terraced olive trees, in the environs of Qalqelia

According to the farmers interviewed in the villages around Tulkarem, Qalqelia and Nablus, the most cultivated varieties of olive are basically two: the Sorri and the Nabali. The latter represents about the 75-80% of the total planted trees.

Traditional farming knowledge in conjunction with the Israeli policy of closures, that severely affects the economics of Palestinian farmers, make the olive agricultural practices mainly relying on endogenous resources.

Fertilisation for the 90% is based on animal manuring. Irrigation is rarely practised. Pests and diseases are hardly harmful, thus the use of chemical pesticides is very rare: the most used pesticides are copper and sulphur, characterised by very low toxicity for humans (they are permitted in organic farming).

Soil tillage is carried out two-three times per year, by using animals or tractors. Herbicides to control weeds are sometimes used as well, when mechanisation is not available since too expensive.

It seems that the practice of pruning is not well developed: most of the interviewed farmers do not know how this practice sensibly affects yield and fruit size, controls the phenomenon of alternate bearing as well as the overall balance of the tree. Due to that (and perhaps because this operation is highly time-consuming too), they prune the trees every two-three years, when they do it.

Harvest is usually carried out from half of October until end of November³ by hand-picking, using plastic sheets to avoid contacts between soil and the olives.

Olives are carried to the mill in polypropylene or jute bags of around 50 kg.

³ The Palestinian Ministry of Agriculture fixes the date before which harvest is not allowed: this date varies from south to north of the West Bank.

The main complains from the interviewed farmers were about:

- the phenomenon of “alternate bearing”, that causes yield fluctuations of 80-90% between year to year;
- Israeli closures and land confiscation policy, that depresses domestic as well as export market of the olive oil;
- disturbance and threats by Israeli settlers (often by weapons) while the farmers are working in their fields, mainly during harvest time. In some cases, farmers were even shot while picking olives (I saw one group of Israeli pacifists picking olives together with Palestinian farmers, in the vicinity of one settlement, in order to protect the farmers from attacks of settlers).

4.2 Processing.

4.2.1 Story of the product and possible developments.

The larger part of the olive oil produced by PARC has been exported so far under the EU category “virgin”, namely its fatty acids acidity (FFA) ranges between 1 and 2%.

However, the quality target to be achieved is “extra virgin” olive oil, the FFA of which must be lower than 0,8%, according to the EU Regulation 1989/03, that came into force on November 1st, 2003.

Furthermore, the quality of the “virgin” oil that has been exported so far, has been almost exclusively evaluated on the base of chemical parameters.

Here, the concept of the organoleptic characteristics is introduced, since – to be considered “extra virgin” or “virgin” – the oil must be scored accordingly, through the official Panel test, that is compulsory for the olive oil to be marketed in Europe (see Annex II).

In addition, excellent organoleptic characteristics of the olive oil make it more appealing in the European market place, where competition for olive oils is rather strong, even among oils marketed under the “Fair Trade” label.

4.2.2 Visit to olive mills.

Seven olive mills have been visited during the mission, in the surroundings of Tulkarem, Nablus and Qalqelia. In some cases the mills were at work, so it was easier to discuss with the operators about quality and ways to attain it, when looking at the phases of processing.

The farmers pay the service by kind, leaving to the mill’s owner a percentage of their oil, that ranges between 1/12 to 1/14 of the total oil obtained.

In most of the cases, the mill technology is good and up to date (all specialised Italian machineries as Perialisi and Rapanelli, construction year: second half of nineties, 2000, 2001).

Usually, the mills work by appointment: the farmer books for a fixed date and picks up the olives accordingly. Although that however, in many cases the olives have to

wait several hours in the polypropylene bags before being pressed (some mills reported up to 12 hours). Sometimes, farmers take a long time to collect the minimum amount of olives that can be accepted by the mill: in this case olives wait in bags in the farms for some days.

The mills do not work continuously: it may happen that farmers do not deliver the olives for several reasons, thus forcing the mill to suspend the job for one day or more, for instance.

Generally, the cleanliness of the mills is unsatisfactory: the floor is impregnated by dirty greasy material; the walls and the external parts of the machineries are often also dirty. The dirty layer causes a typical bad smell in the whole room, immediately perceptible when one enters the room. Only in a couple of mills, cleanliness was almost acceptable.

During the meetings with mills operators several issues have been discussed, on how to optimise the various processing phases: at the meetings, farmers were often present as well.

Annex III presents, per each phase, the good recommended practice for processing olives against the observed drawbacks. It is an attempt to make aware farmers and mill operators of their most common operational mistakes.

The good practice aims at obtaining high quality extra-virgin olive oil, in compliance with the European regulations.

The major part of the oils (freshly pressed oil) that I have tasted in the visited mills presented defects of smell and flavour, probably due to the critical conditions of hygiene and cleanliness; however, in the two mills that I found clean the oil was acceptable.

Unfortunately, I could not test the analytical parameters of the oils that I have tasted, as acidity (FFA) and number of peroxides, in order to correlate the mill management with the organoleptic and chemical parameters.

4.3 Potential and constraints of organic production of olives and olive oil.

4.3.1 Field production.

Given the very good adaptation of the olive species to the Palestinian agroecological conditions and the actual cropping system, the organic production of olives seems very feasible.

One group of olive growers, namely one co-operative of farmers in the area of Queera, has already started the conversion period since April 2003, under the control of an authorised Control body from Egypt, since at present there are not accredited Palestinian Control bodies for organic agriculture.

The AAA-PARC agronomists give full technical assistance to the farmers and the first Palestinian organic oil should therefore be available on winter 2005.

The project of AAA is to support the birth, possibly within 2005, of one independent Palestinian Control body, and to subsequently subscribe a working agreement with

one European Certification body in order to start marketing Palestinian organic products. Four AAA agronomists have already started to undertake training sessions in the subject of control and certification of organic agriculture, in Egypt. However, AAA is in the need of external funding to support such a project.

4.3.2 Processing

There are not particular limitations to make olive oil under organic standards. The same considerations that have been made for the processing of almonds and dates are valid for olives/olive oil.

4.4 Recommendations and remarks.

About olives production, I would recommend to address with more attention the phenomenon of alternate bearing.

Olive trees have been notorious for their tendency to alternate a heavy crop with a light crop. The physiological basis for this condition is that excessive flowering and fruiting literally exhaust the tree. A heavy production (like year 2002 in the West Bank) removes much of the various carbohydrate materials, organic nitrogenous substances, and other essential nutrients so that adequate stored-food reserves are not available for production of a crop the following year. Maturing the heavy crop may so weaken the tree that it does not even bloom the following spring.

Thus, the best method for preventing alternate bearing is to prevent excessively large development. Because the olive has an erratic bearing behaviour, it is difficult to predict excessive fruitset, which cannot be determined until about the middle of June.

Therefore, the most effective way to prevent an excessively heavy crop is to thin out some of the young fruits after they have emerged: dense fruit on branches have to be hand-thinned by removing 5-6 fruits from each branch, leaving 3-5 fruits/30 cm on the branch.

Secondly, alternate bearing may be overcome also by pruning: however, pruning should be delayed until late June of the "on" year. Pruning is not as efficient as fruit thinning, however, because the latter method removes leaves as well as fruits.

Thirdly, excessive application of nitrogen in winter or early spring may cause a heavy fruitset and intensify the alternate bearing pattern.

The good processing practice to improve oil quality, namely to attain extra virgin olive oil, is presented in Annex III.

To address the highlighted drawbacks in processing, I do recommend the following:

- 1) To respect the good practice indications of Annex III, by adapting it to the current production system.

In particular, the most critical aspect to be addressed is the oil conservation system.

At present, each farmer, individually, brings his olives to the mill and takes back home his own oil, that is stored in unsuitable plastic containers and without particular care. Likewise, the mills do not have a suitable place with suitable tanks for long term storage.

PARC withdraws the olive oil just when there is the need to sell it, i.e. a few weeks before the bottling, because the oil tanks in the Al Ram-Ramallah packhouse have low storage capacity. When the purchase happens at the beginning of the oil season, say from November to February, this system is still acceptable from the quality standpoint; however, when the order occurs later (e.g. on summer), the oil, that has been inadequately stored under very unsuitable climatic conditions in the farms, comes to bottling already compromised. Absolutely not in line with the high quality requirements.

What to do? The key to solve this serious bottleneck is to provide the “pilot mill” (see below) with suitable stainless steel tanks (see Annex III for description), with a storing capacity that is proportionate to the expected oil quantity to be marketed. All the oil pressed in the mill will remain in the storage room until it is transported to the PARC pack-house for ultimate bottling. The less movement of the oil, the best oil quality.

Of course, to manage such a new system, PARC has to drive it firmly, and carefully control each step from A to Z. Then, specific training of the quality staff is necessary on the issue of proper olive oil storage;

- 2) To start the improved processing system by selecting one group of farmers and one mill, both open to innovation and ready to fully co-operate with the PARC quality team.

By the way, the co-operative of eighty (organic, under conversion) olive growers of Qeera, managed by Mr. Wiesam Ziade, seemed to be willing to start such innovative process. The co-operative had already identified one mill, and negotiated with it a cheap price for the service; in addition, the mill works their olives as a whole, by fixed appointment; from the next year they will begin to harvest by plastic boxes instead of bags, etc. My opinion is that PARC should invest in such a pilot project, and later, when duly tested, the “high quality project” should be extended to other groups of farmers and mills;

- 3) To enhance the awareness of the PARC quality team and the selected mills operators about the organoleptic characteristics of the olive oil. This important (quality) objective could be well attained by let the main actors to

participate to an one-week course on olive oil sensory analysis, based on the same methodologies of the EU Panel Test;

A short demonstration of sensory analysis has been arranged with the quality team of PARC at the end of the mission, to highlight the most evident organoleptic defects of some oil samples. The participation was very enthusiastic;

- 4) To train-on-the-job the operator of the mill that will be selected for the pilot project: one Italian experienced mill operator could join for some days the Palestinian colleague and work side-by-side with him;
- 5) To write down a detailed and specific HACCP Plan for the pilot mill: this will help to standardize the quality procedures to be implemented and will offer an additional quality guarantee for the European buyers.

5. Minor products

Some minor quality issues have also been investigated on other products.

5.1 Cous-cous.

The quality problem of cous-cous, related to the use of rancid olive oil in product preparation, has been removed, since now the women do not use the oil anymore to mix the wheat flour.

On the final carton of cous-cous, a label with the same characteristics that have been described for almonds and dates is stucked. The link between the letter on the label and the production village is presented in Table 3.

Letter on the label	M	ZN	QN	L	AR	A	Sh
Name of production village/ women club	Al-Morooge	Al-Zaitoon	Al-Aqsa	Beit Lahia	Shiek Radwan	Al-Amal	Al-Shaib

Table 3

5.2 Sesame oil and Tahina

Tahina is what is left after separation of oil from the sesame seed, namely a sort of by-product of sesame oil extraction. The sesame is grown in the Jenin area, so it is 100% of Palestine origin: the sesame is considered by PARC an interesting new crop for farmers, since it has good prices and allows to diversify. The potential oil yield would be quite good (25-35%), but the actual yields are low due to the traditional system of extraction, characterised by low efficiency. For this reason, there would be the need to buy one mill, specifically manufactured for sesame seeds (Italian technology).

About Tahina, PARC cannot pack it, as requested by CTM, since they do not have the appropriate technology. They instead could send the Tahina in iron cans by 20 kg each. In addition, they are not prepared to buy the bottles, since the only manufacturers of it are the Israeli companies.

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