QUALITY ASSURANCE MANUAL

RMF
RENÉ MOAWAD FOUNDATION

REPVBBLICA ITALIANA

Cooperazione Italiana allo Sviluppo
Ministero degli Affari Esteri

Name of the Project:
ROSS Emergency Program "Strengthening the role of rural women in agro-food processing in the Bekaa region" (L07-AD004)

Description:
The project aims at improving the quality of production and market access of agricultural cooperatives in agro-food sector in the Bekaa valley.

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Partners:
1) Union of Agricultural cooperatives in Deir El Ahmar and Neighboring Villages (14 cooperatives)
2) Union of Production and Artisanal cooperatives in Bekaa and Neighboring Villages (9 cooperatives)

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Part 1

Materials and finished products specifications

1.1.1 Apricot jam in glass jar

FPTS 01	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Apricot Jam in glass jars	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Apricot jam which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Apricot Fruit	
Sugar	
Lemon Juice	
Total JAM	

Physical characteristics	
Minimum fruit content	50 grams of fruit per 100 grams of jam produced
Vacuum	-150 till –300 mm of Hg
Head Space	The head space values should be between 1cm and 1.5 cm.
Consistency	The jam should have a good consistency, a good gel. Not too gelling and spread able. It should contain fruit pieces.
Net weight	Minimum As per label. Declaration.
Foreign Matter	No broken fruit pits, no pieces of leaves, no dead insects allowed.

Chemical characteristics	Value
pH	3.8-4.01
Acidity	NA
Minimum Brix	64 degrees at 20°c
Maximum Brix	68 degrees at 20°c

Sensorial attributes	
Color	Light orange
Taste	The end product should have a taste normal for the type of fruit ingredients taking into consideration any flavor imparted by optional ingredients. The final product should not be highly sweet indicating excessive cooking leading to caramel production in the final product.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks.
CAP/Closure	The cover should be clean and intact. The closure should not be too tight as to require strong effort to open. It shall be closed according to the technical requirements for a good seal.
Label	The label shall be clear and conspicuous and compliant with the labeling regulations o the country in which it is commercialized.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clean and readable letters.

Reference CODEX STAN 79-1981

1.1.2 Strawberry jam in glass jar

FPTS 02	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Strawberry Jam in glass jars	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Strawberry jam which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Strawberry Fruit	
Sugar	
Lemon Juice	
Total JAM	

Physical characteristics	
Minimum fruit content	50 grams of fruit per 100 grams of jam produced
Vacuum	-150 till –300 mm of Hg
Head Space	The head space values should be between 1cm and 1.5 cm.
Consistency	The jam should have a good consistency, a good gel. Not too gelling and spread able. It should contain fruit pieces.
Net weight	Minimum As per label. Declaration.
Foreign Matter	No broken fruit pits, no pieces of leaves, no dead insects allowed.

Chemical characteristics	Value
pH	3.6-3.9
Acidity	NA
Minimum Brix	64 degrees at 20°c
Maximum Brix	68 degrees at 20°c

Sensorial attributes	
Color	Reddish in color.
Taste	The end product should have a taste normal for the type of fruit ingredients taking into consideration any flavor imparted by optional ingredients. The final product should not be highly sweet indicating excessive cooking leading to caramel production in the final product.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks.
CAP/Closure	The cover should be clean and intact. The closure should not be too tight as to require strong effort to open. It shall be closed according to the technical requirements for a good seal.
Label	The label shall be clear and conspicuous and compliant with the labeling regulations o the country in which it is commercialized.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clean and readable letters.

Reference CODEX STAN 79-1981

1.1.3 Stuffed eggplant in oil:

FPTS 03	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Stuffed eggplant in oil	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the stuffed eggplant in oil which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Boiled and pressed eggplant	
Stuffing (walnuts, red pepper,)	
Vegetable oil	
Total Stuffed Eggplants	

Physical characteristics	
Vacuum	-100 till – 250.mm of Hg
Head Space	The head space values should not exceed the range of 1.5 -3cm. from the top of the jar.
Net weight	Minimum As per label.
Drained weight	The drained weight should be minimum 75% of the net weight
Inner stuffing weight	The inner stuffing should be minimum15% of the Net weight
Foreign Matter	No stones, no pieces of leaves, not dead insects

Chemical characteristics	Value
pH range	3.8 till 4.25
Aflatoxins	Less than 5ppb in walnuts.(It could vary depending on the country of sales).

Sensorial attributes	
Color	Light brown
Taste	Typical of pickled eggplant. Not too acidic.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks.
CAP/Closure	The cover should be clean and intact. The closure should not be too tight as to require strong effort to open. It shall be closed according to the technical requirements for a good seal.
Label	The label shall be clear and conspicuous and compliant with the labeling regulations o the country in which it is commercialized.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clean and readable letters.

Reference CODEX STAN 115-1981, Volume 5A-1994

1.1.4 Pickles in glass jar

FPTS 04	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Pickles in glass jar	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the pickles in general which can be used as a reference for production by the producers as well as the buyer. The specific characteristics for each type of pickle shall be determined accordingly.

Basic Formulation

Item	Kg
Vegetables (cucumber, cornichon…)	
Water	
Vinegar	
Salt	
Total Pickles	

Physical characteristics	
Vacuum	-150 till -250 mm of Hg
Head Space	The head space values should be between 1 and 2.5 cm.
Size homogeneity	The size of the vegetables used shall be medium sized , homogeneous conforming to the corresponding material specifications.
Net weight	Minimum as per label declaration.
Drained weight	Minimum 65% of the net weight. It could be less on some special items.
Foreign Matter	No stones, no pieces of leaves, no dead insects are allowed.

Chemical characteristics	Value
pH	3.5-3.8
Acidity	0.7-1.4%
Salinity	2-4%

Sensorial attributes	
Color	Light green
Taste	The end product should have a taste normal for the type of vegetable ingredient. The product should be free of any undesirable smell or taste.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks.
CAP/Closure	The cover should be clean and intact. The closure should not be too tight as to require strong effort to open. It shall be closed according to the technical requirements for a good seal.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clean and readable letters.

Reference CODEX STAN 115-1981, Volume 5A – 1994

1.1.5 Mulberry nectar:

FPTS 05	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Mulberry Nectar	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the juices and nectars which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Mulberry Fruit	
Sugar	
Total Nectar	

Physical characteristics	
Minimum fruit content	25% of Mulberry fruits.
Vacuum	-100 till - 250 mm of Hg.
Consistency	The nectar should be liquid, easily flow able without the presents of lumps.
Net volume	Minimum As per label declaration.
Foreign Matter	No dirt, fruit sprouts, pieces of leaves, dead insects are allowed.

Chemical characteristics	Value
pH	3.5-4
Acidity	0,6 - 0,7 % citric acid.
Brix Range	11 till 13 degrees at 20°c

Sensorial attributes	
Color	Dark red to purple
Taste	The end product should have a taste normal for the type of fruit ingredients taking into consideration any flavor imparted by optional ingredients. The final product should not be highly sweet.

Packaging	
Glass bottle	The external bottle should be clean and clear of any glass defects. The glass jar should not have any cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clean and readable letters.

1.1.6 Olive oil:

FPTS 05	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Olive Oil Extra Virgin	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the olive oil which can be used as a reference for production by the producers as well as the buyer.

Physical characteristics	
Net volume	Minimum As per label declaration.
Chemical characteristics	**Value**
Free Fatty Acid	≤ 0.8 g/100g of oil
Peroxide value	< 10 meq /kg oil
Sensorial attributes	
Color	Light yellow
Taste	Typical to olive oil without any signs of rancidity or off-flavors.
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

Reference CODEX STAN 33-1981 (Rev. 2-2003)

1.1.7 Labneh balls and kishk balls in oil:

FPTS 06	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Labneh balls and Kishk balls in oil	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of labneh balls and kishk balls in oil which can be used as a reference for production by the producers as well as the buyer.

Description:

1- The ball shaped Labneh produced from the fermentation of goat milk into yoghurt , and the straining of yoghurt to produce labneh with salt addition, and the pressing of labneh for further drying the final product.
2- The fresh Kishk balls are produced from the mass produced by mixing and grinding broken wheat with yoghurt, salt and drying them to a certain level, while keeping them still soft.

Physical characteristics	
Vacuum	25% of Mulberry fruits.
Head Space	The head space values should be between 1 and 1.5 cm.
Net weight	Minimum As per label declaration.
Drained weight	The drained weight should be minimum 55 % of the net weight. (To be confirmed)
Chemical characteristics	**Value**
Salt percentage	To be determined.
Acidity	Labneh balls:1.7-1.8 % lactic acid Kishk balls: 1.3- 1.4 % lactic acid.
Moisture content	Labneh Balls: max 21% Kishk Balls: Max 25%
Water activity	≤ 0.62
Microbial specifications	
Microbial criteria	Shall be free from micro-organisms capable of development under normal conditions of storage in amounts which represent a hazard to health, and shall not contain any substances originating from micro-organisms in amounts which may represent a hazard to health.
Fecal coli forms	>10 cfu
Sensorial attributes	
Color	Creamy white
Taste	Typical labneh and kishk balls. No off flavors, excessive bitterness or excessive acidity is acceptable.
Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks
CAP/Closure	The cover should be clean and intact. The closure should not be too tight as to require strong effort to open. It shall be closed according to the technical requirements for a good seal.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

Reference CODEX ALIMENTARIUS, Volume 13 ''Milk & Milk Products''

1.1.8 Orange Blossom water :

FPTS 07	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Orange Blossom Water	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Flower Water which can be used as a reference for production by the producers as well as the buyer.

Physical characteristics	
Net volume	Minimum As per label declaration.
Foreign Matter	No foreign matters allowed.
Chemical characteristics	**Value**
Conductivity	EMV values approaching zero indicating a distillation process.(To be determined)
Minimal natural essential oil content from flower	0.035%
Microbial specifications	
Total count	< 100 colonies /gram
Total coliforms	<10/100 ml
Sensorial attributes	
Color	Transparent
Limpidity	Presence of oil spots on the bottle and on the liquid surface is allowed
Taste	It should taste and smell like the natural orange blossom.
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.9 Rose water:

FPTS 08	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Rose Water	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Rose Water which can be used as a reference for production by the producers as well as the buyer. Produced from the distillation of rose petals in water,????

Physical characteristics	
Net volume	Minimum As per label declaration.
Foreign Matter	No foreign matter allowed.
Chemical characteristics	**Value**
Conductivity	To be determined
Minimum natural essential oil content from Rose	0.015%
Microbiological criteria	
Total Microbial count	< 100 C/g
Total coliforms	< 10/100ml
Sensorial attributes	
Color	Transparent
Limpidity	Presence of oil spots on the bottle and on the liquid surface is allowed
Taste	It should have the same taste and smell as the fresh rose
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.10 Apple vinegar in glass bottle:

FPTS 09	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Apple Vinegar in glass bottle	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Apple Vinegar which can be used as a reference for production by the producers as well as the buyer.

Vinegar produced from the acetous fermentation of Apple juice.

Physical characteristics	
Vacuum	NA
Net volume	Minimum As per label declaration.
Foreign Matter	No sprouts, no pieces of leaves, not dead insects.
Sedimentation	There shouldn't be any sedimentation in the bottle
Chemical characteristics	**Value**
pH	
Acidity	5 % calculated as acetic acid.
Residual alcohol	Not more than 0.5% v/v,
Sulfur dioxide	Not more than 70
Sensorial attributes	
Color	Light red brick
Taste	The end product should have the typical taste of apple
	vinegar.
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

Reference Codex Alimentarius – Volume 11 – 1994, CODEX STAN 162-1987

1.1.11 Grape vinegar in glass bottle:

FPTS 10	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Grape Vinegar in glass bottle	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Grape Vinegar which can be used as a reference for production by the producers as well as by the buyer. Vinegar produced from the acetous fermentation of Grape juice.

Physical characteristics	
Net volume	Minimum As per label declaration.
Foreign Matter	No sprouts, no pieces of leaves, not dead insects.
Sedimentation	There shouldn't be any sedimentation in the bottle
Chemical characteristics	**Value**
pH	NA
Acidity	Not less than 6 % calculated as acetic acid.
Residual alcohol	not more than 0.5% v/v,
Sensorial attributes	
Color	Light red brick
Taste	The end product should have a normal taste of grape vinegar; no off flavors.
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks.
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

Reference : Codex Alimentarius – Volume 11 – 1994, CODEX STAN 162-1987

1.1.12 Pomegranate molasses in glass bottle:

FPTS 11	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Pomegranate Molasses in glass bottle	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Pomegranate Molasses which can be used as a reference for production by the producers as well as the buyer.
Produced from the concentrate of acidic pomegranate, with possible addition of citric acid and salt .

Physical characteristics	
Consistency	Thick syrup slightly flowable, with a fine texture.
Net volume	Minimum As per label declaration.
Foreign Matter	No fruit parts, no pieces of leaves, not dead insects.
Chemical characteristics	**Value**
pH	1.4-2.5
Acidity	To be determined.
Range of Brix	Over 70 degrees Brix at 20°c
Sensorial attributes	
Color	Dark brown
Taste	The end product should have a taste normal for the type of fruit ingredients taking into consideration any flavor imparted by optional ingredients.
Packaging	
Glass bottle	The glass bottle shall be clean, wholesome and absent from any significant glass defects and without cracks
CAP/Closure	The cover should be clean and absent from any defect. It should be well sealed and easy to open.
Label	The label should comply with the labeling regulations of the country of destination
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.13 Pizza sauce in glass jars:

FPTS 12	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Pizza Sauce in glass jars	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Pizza Sauce which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Tomato	
Tomato Puree	
Corn	
Pepper	
Olive	
Mushroom	
Total Pizza Sauce	

Physical characteristics	
Vacuum	-150 till - 300 mm of Hg
Head Space	The head space values should be between 1 and 1.5 cm.
Consistency	The consistency should be a thick liquid, free flowing, with fine particles of herbs and vegetables.
Net weight	Minimum As per label declaration.

Chemical characteristics	Value
pH	<4.4
Salinity	NA
Brix	Minimum 5 Brix at 20°C

Sensorial attributes	
Color	Light red
Taste	The end product should have a taste normal for the type of vegetable ingredients taking into consideration any flavor imparted by optional ingredients. The final product should not be highly sweet indicating excessive cooking leading to caramel production in the final product.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks
CAP/Closure	The cover should be clean and clear of any bump or any defect, and should be easy to open.
Label	The label should be compliant with the labeling standards of the country.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.14 Tomato sauce in glass jars:

FPTS 13	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Tomato Sauce in glass jars	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Tomato Sauce which can be used as a reference for production by the producers as well as the buyer.

Physical characteristics	
Vacuum	-150 till -300mm of Hg
Head Space	The head space values should be between 1 and 1.5 cm.
Consistency	The tomato sauce should be viscous and should be easily spread on a hard surface. The accepted margin of viscosity values is between (To be determined and agreed with COOP).
Net weight	Minimum As per label declaration.
Brix	- Tomato sauce: 8-24% - Tomato puree: ≥ 24%
Chemical characteristics	**Value**
pH	4.2 till 4.4
Salinity	NA
Sensorial attributes	
Color	Light red
Taste	The end product should have a taste normal for tomato taking into consideration any flavor imparted by optional ingredients.
Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks
CAP/Closure	The cover should be clean and clear of any bump or any defect, and should be easy to open.
Label	The label should be compliant with the labeling standards of the country.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters

Reference: Codex Alimentarius – Volume 5 A – 1994 – CODEX STAN 57-1981

1.1.15 Cooked cut French beans in glass jars:

FPTS 14	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Cooked beans in glass jars	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Cooked Beans which can be used as a reference for production by the producers as well as the buyer.

Basic Formulation

Item	Kg
Tomato	
Oignon	
Green beans	
Total Cooked beans	

Physical characteristics	
Vacuum	-150 till - 300 mm of Hg
Head Space	The head space values should be between 1 and 1.5 cm.
Consistency	The cooked beans
Net weight	Minimum As per label.
Drained weight	Minimum 65% of the net weight.

Chemical characteristics	Value
pH	Max 4.35 at 20°c

Sensorial attributes	
Color	Light red
Taste	The end product should have a taste normal for the type of vegetable ingredients taking into consideration any flavor imparted by optional ingredients.

Microbial criteria	
	The product does not produce gas, change its acidity or pH or show any mold growth upon an incubation of 1 week at 30 °c.

Packaging	
Glass jar	The external jar should be clean and clear of any glass defects. The glass jar should not have any cracks
CAP/Closure	The cover should be clean and clear of any bump or any defect, and should be easy to open.
Label	The label should be compliant with the norms and standards of the labeling rules in the country of sales.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.16 Dried herbs in Plastic bag:

FPTS 16	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Dried Herbs and Vegetables in plastic bag	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Dried Herbs/vegetables which can be used as a reference for production by the producers as well as the buyer.

Description:

Physical characteristics	
Moisture evaluation	Maximum moisture content: - Dried baby Okra : Max 5% - Dried Mouloukieh leaves: Max 15%.
Size indication	-Okra: about 50 units per 10 grams.
Foreign bodies	Dirt, insects, sticks, and plant materials not belonging to the product in question are not allowed.
Net weight	Minimum As per label declaration.
Sensorial attributes	
Color	Dried vegetables: Similar to the fresh products as per reference sample of dried product approved.
Packaging	
Plastic Bag	The plastic bag shall be made from flexible neutral plastic materials such as Polyethylene, Polypropylene or Polyamide. The thickness shall not be lower than 60 microns and the seal shall be strong and hermetic.
Seal	The bag should be well sealed not to allow any air or moisture or dirt to penetrate to the product.
Label	The label should be compliant with the norms and regulations of the country of sales.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.1.17 Dried Kishk Plastic bag:

FPTS 17	Quality Assurance Manual	Date: 15/03/08
Issue1	Technical specifications	
Finished Product	Dried Goat Kishk in plastic bag	

Scope: Purpose of the specification is to provide the company with a detailed scientific description of the Dried Herbs/vegetables which can be used as a reference for production by the producers as well as the buyer.

Description: The product produced from the mixture of goat yoghurt (lactic fermentation) and broken dried wheat and salt at different proportions, and then the whole mixtures is well ground, dried sieved and preserved.

Physical characteristics	
Texture	- free flowing whitish powder with very fine brown particles; no caking.
Foreign bodies	Dirt, insects, sticks, and plant materials not belonging to the product in question are not allowed.
Net weight	Minimum As per label declaration.
Chemical characteristics	**Value**
Maximum Moisture content	Kishk: 10%
Acidity as lactic acid	Minimum 1.2%
Sensorial attributes	
Color	Off-white color with fine brown particles.
Microbial criteria	
Fecal coli forms	Zero tolerance
Faecal streptococcus	Zero tolerance
Staphylococcus Areus	Zero tolerance
Clostridium Perfringens	1 colony/gram.
Packaging	
Plastic Bag	The plastic bag shall be made from flexible neutral plastic materials such as Polyethylene, Polypropylene or Polyamide. The thickness shall not be lower than 60 microns and the seal shall be strong and hermetic.
Seal	The bag should be well sealed not to allow any air or moisture or dirt to penetrate to the product.
Label	The label should be compliant with the norms and regulations of the country of sales.
Outer carton	The outer carton should be made of corrugated carton of good quality, clean, and in good condition. Its dimensions shall be suitable for the number of units in contains. The information on the number of units and the type of product shall be indicated on the carton in clear and readable letters.

1.2.1 Whole Apricots:

RMS 01	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Whole Raw Apricots	

Scope: The specifications provides indicative characteristics of the Raw Material Whole apricot which shall be used fro the production of Apricot jam, which can be used as a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Variety	"Dahabi Asfar" , mixed with other varieties such as "Tiliani". and "Americani" if not sufficient quantities having a bitter stone.
Ripeness	The product used shall be sufficiently ripe with a golden yellowish color and a brix not less than 14 btc.at 20 °c. The apricot should be easy to split.
Acidity	pH range of 3.9-4.2

Allowed defects	Maximum Tolerance
Worms /filth	0%
Under ripe	3-5%
Spotted and bruised	<3%

1.2.2 Whole Strawberry:

RMS 02	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Whole Raw Strawberry	

Scope: The specifications provides indicative characteristics of the Raw Material Whole strawberries which shall be used fro the production of Strawberry jam, which can be used as a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Variety	Varieties giving reddish color with high brix and keeps pieces in the jam.(Coastal varieties: OSO, Motto, Douglas)
Ripeness	The product used shall be sufficiently ripe with a well established red color and a Brix not less than 9 Btc. at 20 °c.
Acidity	pH range of 3.3-3.8

Allowed defects	Maximum Tolerance
Worms /filth	0%
Under ripe	10 %
Spotted and bruised	<4%
Attached leaves	1.2%
malformations	0.4%

1.2.3 Sugar:

RMS 03	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Raw white Sugar	

Scope: The specifications provides indicative characteristics of the Raw Material Sugar which shall be used for the production of Jams, which can be used as a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Type	White sugar of commercial quality type A2.
Solubility	Soluble at cold temperatures.
Taste	Shall be sweet with not after taste.
Physical impurities	Must not be detected in a 10% sugar solution.
Soluble Solids indication test	9.5-9.9% soluble solids in a 10% solution.

1.2.4 Edible coarse Salt:

RMS 04	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Raw edible Coarse salt	

Scope: The specifications provide indicative characteristics of the Raw Material Salt which shall be used for the production of Pickles, which can be used as a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Type	White crystals sea salt
Solubility	Completely soluble at room temperatures.
Taste	Salty with not after taste.
Physical impurities	Must not exceed 1%.
Soluble Solids indication test	8-9% soluble solids in a 10% solution.

1.2.5 Grape Vinegar:

RMS 05	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Grape vinegar	

Scope: The specifications provide indicative characteristics of the Raw Material Grape vinegar which shall be used for the production of Pickles, which can be used as a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Type	Fermented grape juice vinegar
Acidity	6 till 10 % as acetic acid.
Appearance	Clear with low sedimentation.

1.2.6 Potable water:

RMS 06	Quality Assurance Manual	Date: 8/04/08
Issue1	Technical specifications	
Raw Material	Potable water	

Scope: The specifications provide indicative characteristics of the Raw Material potable water which shall be used for the production of all food products, and can constitute a reference for producers as well as buyers of the Jam.

General Characteristics	Recommended specs
Chemical quality	Complies with the Lebanese norms on potable water No. 161
Microbial quality	Complies with the Lebanese norms on potable water No. 161
Appearance	Clear, non turbid without any sedimentation.
Taste	Neutral

Part 2

Production Procedures

(The procedures should be determined by the coops production units and to be improved and optimized as much as possible before being recorded).

2.1- Apricot jam in glass jar (Tentative procedures)

P2PP 01	Quality Assurance Manual	Date: 15/03/08
Issue1	Production Procedures	
Production procedures	Apricot Jam in glass jars	

Scope: The procedure below applies to production of Apricot Jam to ensure that every batch of Apricot Jam is produced in the same method. (The final process will be agreed upon with the COOPS).

Raw Materials used:

- Whole Apricot fruits
- White sugar
- Lemon Juice.

Process Description: The jam production steps are the following:

- Dry sorting, removal of stems and leaves of the apricots.
- Washing of the Apricots.
- Removing the pits (stones) and dividing the fruit into halves.
- Mixing halved and pitted apricots with an equal amount of sugar.
- Cooking the mixture in a steam jacketed open vessel at a steam pressure of 2-2.5 bars until the concentration of the jam reaches 64 Brix. Measured at 20 °C.
- Put off the steam, let the jam simmer down for a few minutes and add the lemon. Juice.
- Rinse the empty jars with warm water before filling.
- Fill the jam hot at a temperature not less than 85 degrees c. in the clean glass jars.
- Close the jar immediately with a twist-off cap and turn it upside down to pasteurize the core of the cap. Keep it fro 5 minutes.
- Cool the jars in mild temperature clean water. For 15 minutes.
- Dry the filled jars.
- Put the produced jam jars in outer cartons.

Part 3

Testing Procedures

3.1- pH measurement:

P3TP 01	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	pH Measurement	

Scope: pH is a measure of the acidity or alkalinity of a solution.

Procedure: The pH is measured by a pH meter. 1- Sample preparation:

- The sample (depending on the type of product) shall be prepard in away that it can be measured. In other words the sample is liquefied and homogeneous .

2-pH measurement:

- The pH meter is calibrated using Buffer solutions 4, 7 and 10.
- The probe is washed well in distilled water before each measurement.
- The probe is inserted in the sample and the measurement is read. Time should be given for the reading to stabilize.
-The reading is recorded, and the probe is washed well with distilled water and immersed in buffer solution if not in use.

N.B: Measurement of pH in stuffed eggplant should be done inside of the eggplant dried of oil.

3.2- Brix-Total solids:

P3TP 02	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	Brix-Total solids	

Scope: Brix degrees is a measurement of the mass ratio of dissolved sugar to water in a liquid
Procedure:
- A very small sample of the product is obtained using a spatula or a pipette depending on whether it is a solid or a liquid.
- The sample should be a good representative of the product concentration.
-The sample lens of the digital or abbe refractometer is cleaned well with distilled water and dried with a fine cloth in order to remove any residues from previous samples.
- The sample to read is placed on the lens of a digital or abbe refractometer and well spread to reduce thickness and obtain optimized reading.
- The sample temperature before the reading should approach 20 °c.
- The reading on the machine is recorded.
- The refractometer is re-calibrated if the last reading dates three days earlier or any changes have been done to the instruments.

3.3- Net weight:

P3TP 03	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	Net weight/Drained weight.	

Scope: The net weight is the mass by the difference between the gross weight of the container and the weight of the container after emptying the product.

Equipment required:

- Balance with a minimum of 0.1 g precision and a capacity of max 3000g.
- Stainless steel sieves.

Procedure:

NET WEIGHT DETERMINATION:

- The filled product and container are cleaned well and weighed on a digital balance with a minimum of 0.1 g precision.
- The container is emptied cleaned and dried.
- The Net weight - Gross weight - weight of the empty and dry container

DRAINED WEIGHT DETERMINATION:

1. Empty the contents of a container upon the meshes of a circular pre-weighed screen (8- mesh screen)
2. The product is evenly distributed over the meshes of the sieve
3. Exactly 2 minutes after the product is placed on the screen the drained solids are weighed by one of the following procedures:

a) For Pickles: The screen containing the drained solids is placed directly on the balance and weighed; the weight of the draining screen is then subtracted.

b) For Grains/Beans: The screen containing the drained solids is shacked to remove any liquid or starch clinging to the mesh. Afterward, the screen containing the drained solids is placed directly on the balance and weighed; the weight of the draining screen is then subtracted.

3.4- Acidity determination:

P3TP 04	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	Acidity determination	

I- PRINCIPE :
Titrage de l'acidité avec une solution d'hydroxyde de sodium en présence de phénolphtaléine comme indicateur.

II- REACTIFS :
- Solution d'hydroxyde de sodium (0.1N)
- Solution de phénolphtaléine (ph.ph) à 1g pour 100ml dans l'éthanol à 95-96% (en volume)

III- MODE OPERATOIRE :
- Si le jus est trouble et pulpeux procéder à une filtration rapide à l'aide d'un entonnoir muni d'un papier filtre ou d'un coton hydrophile
- Prélever à l'aide de la pipette 10 ml du jus filtré et les introduire dans l'erlen. Ajouter quelques gouttes de ph.ph.
- Titrer avec la solution d'hydroxyde de sodium 0.1N jusqu'à l'obtention d'une coloration rose persistante pendant 30 sec.

IV- CALCUL – EXPRESSION DES RESULTATS :
- **Calcul de la normalité de NaOH**

n = m/M
C = n/V = m/M*V
m = C*M*V*100/96
Apres pesage de m de NaOH calculer la valeur exacte de la normalité.
N = (m/M*V)*96/100

- **Calcul de l'acidité**

L'acidité titrable est exprimée en milliéquivalents pour 100 g ou 100 ml de produit. Elle peut être également exprimée en grammes d'acides pour 100 g ou 100 ml de produit. L'acide peut être l'acide sulfurique (acidité sulfurique), acide citrique (acidité citrique), acide tartrique, malique ou acétique. Il faut dans ces cas tenir compte de la masse de l'acide et de sa normalité.

Acide citrique : MM= 192 triacide
Acide malique : MM= 134 diacide
Acide tartrique : MM= 150 diacide
Acide acétique : MM= 60 monoacide
Acide lactique : MM= 90 g/Mol

Calcul : C*V=C1*V1
C : normalité de NaOH
V : volume de NaOH versé
C1 : concentration recherchée
V1 : volume de jus prélevé

C1= C*V /V1

M.M*C1 dans 1000 ml
x dans 100 ml
x = % d'acide dans le produit

3.5- Acidity determination in oil:

P3TP 05	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	Acidity determination in oil	

I- DEFINITION :

• L'acidité fréquemment désignée par FFA (Free Fatty Acides), est une expression conventionnelle de la teneur en % d'acide gras libres. Selon la nature des matières grasses, elle pourra être exprimée en :
- Acide laurique (PM 200) pour les huiles de coprah, palmistes et similaires
- Acide palmitique (PM 256) pour les huiles de palme
- Acide oléique (PM 282) pour les autres huiles

Lorsque le résultat indiquera « acidité » non suivi du mode d'expression, il s'agira toujours, par convention, de l'acidité exprimée en acide oléique.

• L'indice d'acide d'un corps gras est le nombre de mg d'hydroxyde de potassium nécessaire pour neutraliser l'acidité libre d'1 g de ce corps gras.

II- PRINCIPE :

Après dissolution d'une quantité connue de corps gras dans un mélange d'éthanol et d'éther éthylique, titrage des acides gras présents à l'aide d'une solution d'hydroxyde de potassium

III- REACTIFS :

- Solution d'hydroxyde de potassium 0.1N dans l'éthanol. Le titre doit être connu et vérifié avant l'emploi
- Ethanol 95-96% en volume
- Ether éthylique
- Solution de phénolphtaléine (ph.ph) à 1g pour 100 ml dans l'éthanol à 95-96% (en volume)

IV- APPAREILLAGE :

Matériel courant de laboratoire :
- Erlen de 250 ml
- Balance analytique
- Eprouvette de 50 ml
- Burette

V- MODE OPERATOIRE :

- Peser à 0.01g près, dans l'erlen, 5 à 10 g d'huile.
- Préparer le mélange éther-alcool (25ml+25ml) en mesurant à l'aide de l'éprouvette. Ajouter quelques gouttes de ph.ph. Neutraliser à l'aide de quelques gouttes de la solution d'hydroxyde de potassium 0.1N.
- Verser ce mélange éther-alcool neutralisé dans l'erlen contenant la prise d'essai, dissoudre en agitant. Titrer avec la solution d'hydroxyde de potassium 0.1N jusqu'au virage de l'indicateur au rose clair et persistance de la coloration pendant au moins 10 sec.
- Effectuer deux déterminations sur un même échantillon. Noter les volumes versés.

N.B : Si avant ou pendant le titrage la solution est trouble, ajouter un volume équivalent du mélange éther-alcool neutralisé.

VI- CALCUL ET EXPRESSION DES RESULTATS :

- Calcul de la masse de KOH

$n = m/M$
$C = n/V = m/M*V$
$m = C*M*V*(\%\ de\ pureté)$

Apres pesage de m de KOH calculer la valeur exacte de la normalité.

$N = (m/M*V)*(\%\ de\ pureté)$

- Calcul de l'acidité

$nKOH = NKOH * Vversé * 10\text{-}3$
m ac. oléique = n KOH * 282 (M.M ac. oléique)
La masse pesée contient m d'acide oléique
100 g contient x

VII- INTERPRETATION DES RESULTATS :

Les acides gras libres proviennent d'une hydrolyse enzymatique ou chimique des triglycérides qui forment le corps gras. Une forte acidité est le signe d'une altération de la matière grasse. Dans les huiles raffinées, la teneur en acide gras libre (ou FFA) est <0.1%. Dans les huiles brutes, cette teneur est >1% (exprimée en

3.6- Determination of Peroxides :

P3TP 06	Quality Assurance Manual	Date: 15/03/08
Issue1	Testing Procedures	
	Peroxide determination	

I- REAGENTS:

- Acetic acid – chloroform solution: mix 3 vols. HOAc with 2 vols. CHCl3, USP.
- Potassium iodide soln, saturated: dissolve excess KI in freshly boiled H2O. Excess solid must remain. Store in dark. (Test daily by adding 0.5 to 30 ml HOAc-CHCl3); then add 2 drops 1% starch soln, (Mix ca 1g sol. Starch with enough H2O to make thin paste, add 100 ml boiling H2O, and boil ca 1 min while stirring). If solution turns blue, requiring > 1 drop 0.1N Na2S2O3 to discharge color, prepare fresh solution
- Sodium thiosulfate std. soln: 0.1 and 0.01N. Prepare and stdze as in 942.27. For 0.01N, dilute 0.1N with freshly boiled and cooled H2O.

II- DETERMINATION:

- Fats and oil: weight 5.00 ± 0.05 g sample into 250 ml g-s erlenmeyer. Add 30 ml HOAc-CHCl3, and swirl to dissolve. Add 0.5 saturated KI soln, from Moher pipet, let stand in dark for 5 min with occasional shaking, and add 30 ml H2O. Slowly titrate with 0.1N Na2S2O3 with vigorous shaking until yellow is almost gone. Add ca 0.5 ml 1% starch soln, and continue titration, shaking vigorously to release all I from CHCl3 layer, until blue just disappears. If < 0.5 ml 0.1N Na2S2O3 is used, repeat determination with 0.01N Na2S2O3. Conduct blank determination daily (must be ≤ 0.1 ml 0.1N Na2S2O3). Subtract from sample titration. Peroxide value (meq peroxide/kg sample) = S*N*1000/g sample.
Where S = ml Na2S2O3 (blank corrected) and N = normality Na2S2O3 soln.
- Margarine: melt sample by heating with constant stirring on hot plate at low heat, or heat in air oven at 60-70 oC. (Avoid excessive heat and long exposure > 40o). When completely melted, hold in worm place until aq. portion and most of solids have settled. Decant oil into clean beaker and filter thru Whatman No 4, or equivalent paper. Do not reheat unless necessary to obtain clear filtrate. Proceed as in Fats and oils.

3.7- Microbiological tests:

- ***Instructions :***

• Peser la quantité de poudre nécessaire.
• Ajouter la quantité nécessaire d'eau.
• Mettre sur la plaque chauffante avec un barreau magnétique pour agiter en même temps que le chauffage.
• Dès l'ébullition, mettre la solution dans l'autoclave selon les indications.
• Verser la solution dans les boites de pétrie sous la hotte à UV.
• En même que la préparation du milieu Agar il faut préparer un milieu liquide(Brosse) nécessaire à l'étape de l'enrichissement.
• Après la préparation des milieux de culture, prélever 1 g de l'échantillon et le mettre dans le tube contenant le milieu brosse.
• Incuber le tube pendant 1 hr à 37 oC. (ETAPE D'ENRICHISSEMENT).
• Apres incubation prélever 1 ml du milieu enrichi et le déposer sur le milieu solide.
• Etaler le liquide sur toute la surface de la boite de pétrie.
• Laisser la boite de pétrie en incubation selon les indications.

- ***Tableau récapitulatif :***

TEST	MILIEU DE CULTURE	INCUBATION
Levure et moisissure	Potato Dextrose Agar (PDA)	22 oC pdt 1 sem
Bactéries totales	Plate Count Agar (PCA)	30 oC pdt 48 hr
Coliformes	MacConckey Agar (MCA)	30 oC pdt 48 hr
Pseudomonas	Pseudomonas Agar (PA)	37 oC pdt 48 hr

- ***Remarques:***

• Il faut allumer le courant UV 15-30 min avant de travailler là-dessous.
• Il faut nettoyer la hotte avec l'alcool.
• Il faut toujours travailler à côté de la flamme.
• Il faut stériliser avec l'alcool tout produit qui va rentrer sous la hotte.
• E. coli est une colonie de couleur rose flagrante entre les colonies de coliformes de couleur beige.
• La présence de coliformes fécaux donne une idée sur l'hygiène lors de la production.
• Si on a obtenu des milliers de colonies sur le milieu de culture on peut refaire le test en diluant le milieu de culture dans l'étape d'enrichissement. Il faut prendre le facteur de dilution en considération dans le calcul lors du comptage des colonies.
• Si on dilue à plusieurs reprises, on fait le calcul en prenant en considération le facteur de dilution et en faisant la moyenne entre le nombre d'échantillons dilués.

Part 4

Forms

QA EVALUATION SHEET CANNED FRUITS AND VEGETABLES
PHYSICAL AND CHEMICAL TESTS CANNED FOOD

Product: _____ Date: _____

Product code /Prod. Exp: _____

Name of coop: _____

Parameters	Standard	S1	S2	S3	S4	S5
Physical and sensory						
External jar appearance						
Cover/ closure						
Vacuum						
Head space						
Product color & appearance						
Texture/ viscosity						
Taste						
Net weight (kg)						
Drained weight						
Chemical						
pH						
Acidity						
Brix/Total solids						
Remarks						

Signature

QA EVALUATION SHEET HERBS AND DRIED PRODUCTS
PHYSICAL AND SENSORY TESTING

Product: _____ Date: _____

Product code / Prod. Exp: _____

Name of coop: _____

Parameters	Standard	S1	S2	S3	S4
Physical and sensory					
Package evaluation					
Closure/seal					
Net weight/ number					
Color					
Product color & appearance					
Product tex-ture/viscosity					
Shape/size					
Foreign bodies					
Moisture content					
pH					
Water activity					
Remarks					

Signature

4.3- Juices and syrups:

QA EVALUATION SHEET JUICES AND SYRUPS
PHYSICAL AND CHEMICAL TESTING

Product: _____ Date: _____

Product code / Prod. Exp: _____

Name of coop: _____

Parameters	Standard	S1	S2	S3	S4
Physical and sensory					
External bottle appearance					
Closure					
Product color					
Product taste					
Product texture/ viscosity					
Presence of foreign matter					
Vacuum					
Net volume					
Chemical					
pH					
Brix/total solids B-TC at 20°C					
Acidity					
Remarks					

Signature