



Head Office: The Old Grammar School, 3-7 Market Square, Amersham, Bucks. HP7 ODF  
Tel: (44) 1494 434600 Email: [foodnettechnical@foodnet.ltd.uk](mailto:foodnettechnical@foodnet.ltd.uk)

Technical Specification		
<b>Product:</b> Spinach Leaf IQF	<b>Last Update:</b> 31/01/2020	<b>Product Code:</b> SPI005

**PACK SIZE** 1 x 10kg;

**ORIGIN:** Turkey / China / France / Belgium

**GENERAL** The product shall be prepared from fresh sound raw material that is free from all toxic residues and taints and shall comply with all current UK/EU Food Legislation. The product is intended to be used as ingredient that is further processed and heat-treated before final consumption.

**INGREDIENTS** Spinach 100% Declare as: Spinach  
(*Spinacia oleracea*)

**PROCESSING** Spinach leaves are delivered to the factory, cleaned, inspected, washed, cut (40x40mm), blanched, cooled and individually quick frozen (-18°C or below) and stored in bulk pallets at -18°C or below until required for re-packing.

**PACKING** During packing, the spinach is inspected before weighing and filling into blue poly lined cartons. The cartons are Best Before and Production date coded, check weighed and metal detected, palletised and stretch wrapped before being returned to store at -23°C to await despatch to the UK at -18°C.

**QUALITY CONTROL** Checks are carried out on the following: -

Processing: -	Raw material Final Product Temperature
Packing: -	Metal detection Check weighing Final product physical defect levels Organolepsis Case quantity Case sealing Case coding and print quality

Doc Ref: PRO-SPE	Issue date: 31.01.2020	Issue No: 3	Prepared by: G. Oberto	Authorised by: Rhys Owen
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## **DEFECT TOLERANCES**

<b><u>Per 500g</u></b>	<b><u>Maximum</u></b>	
Clumps	10%w/w	
Foreign Matter	Nil	
EVM	2	
Yellow Leaves	5 %w/w	
Blemished/Rotten Leaves	0.8 %w/w Root Pieces	1
Spinach Flower buds	3	
Stalks	20% w/w	
Dry Matter	6.5% Min	
Nitrates	<2000 ppm	

## **DEFINITIONS OF DEFECTS**

### **Clumps**

A clump is an agglomeration of leaves welded together that cannot be readily separated without causing damage to the leaves. Clumps shall weigh greater than 30g.

### **Foreign Material**

This includes any material not derived from the spinach plant, or defined as EVM, Examples of foreign matter include insects, pieces of insect, wood, glass, stones, sand, metal, snails, slugs etc. unacceptable.

### **Extraneous Vegetable Matter (EVM)**

This includes any harmless vegetable matter other than spinach leaves that is not derived from the spinach plant.

### **Yellow Leaves**

These are spinach leaves that have a distinct yellow colouration.

### **Blemished / Rotten Leaves**

These are leaves, or parts of leaves, that have a brown colouration caused by rain damage, frost or disease.

### **Flower buds**

These are noticeable flower buds from the spinach plant measuring greater than 25mm.

### **Stalks**

These are pieces of stalk completely devoid of leaf.

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*The below minimum numbers of samples should be inspected and average result to be out-of-spec.*

Quantity Delivered (Kg)	Minimum samples to be taken (1Kg of product per each item)		
	10Kg Boxes	20Kg Bags	25Kg Bags
<1000	4	2	2
<2000	8	5	4
<5000	10	7	5
<10000	15	10	8
≤27000	20	15	12

**ORGANOLEPSIS** (Carried out on a thawed sample.)

**COLOUR** Characteristic green almost completely uniform throughout the sample.

**FLAVOUR** Characteristic spinach flavour. Shall be slightly sweet.

**TEXTURE** Tender, firm but not hard, with no stringiness.



Average sample

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#### **MICROBIOLOGICAL**

Organism	Target	Maximum
<i>TVC @ 30°C</i>	$1 \times 10^5$	$1 \times 10^6$
<i>Total Coliforms</i>	$1 \times 10^2$	$3 \times 10^3$
<i>E. coli</i>	Nil	$1 \times 10^2$
<i>Listeria mono</i>	Absent in 25g	$1 \times 10^2$
<i>Salmonella</i>	Absent in 25g	Absent in 25g

#### **ANALYTICAL**

Peroxidase Negative.  
Nitrates  $\leq 2000\text{ppm}$

#### **WEIGHT CONTROL**

The product shall be packed to minimum weight.

#### **METAL DETECTION**

All cartons shall be passed through a metal detector. The system shall be tested at least every 2 hours using ferrous, non-ferrous and stainless-steel test pieces.

#### **BEST BEFORE DATE**

The product shall be twenty-four months following the month of packing. Minimum BB date on delivery: 6 months.

#### **TRACEABILITY INFO**

Production date or Lot number printed on the label as well as customer order number and/or delivery date.

#### **STORAGE CONDITIONS**

Keep frozen at  $-18^{\circ}\text{C}$  at all times.

#### **CARTON LINERS**

Blue food grade polythene liner of a minimum thickness of  $30\mu\text{m}$ .

#### **CARTONS**

Corrugated fibreboard of glued construction, no metal staples to be used. Shall be sealed using blue adhesive tape.

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## **NUTRITIONAL INFORMATION**

This data conforms to the requirements of EC Council Directive 90/496/EEC

100g of uncooked spinach typically contains: -

Parameter	Value / 100g	Methodology
Energy - kcal	21	McCance & Widdowson 6 <sup>th</sup> Edition
Energy - kJ	90	McCance & Widdowson 6 <sup>th</sup> Edition
Moisture	91.6g	McCance & Widdowson 6 <sup>th</sup> Edition
Carbohydrate	0.5g	McCance & Widdowson 6 <sup>th</sup> Edition
- as sugars	0.3g	McCance & Widdowson 6 <sup>th</sup> Edition
- as polyols	0.0g	McCance & Widdowson 6 <sup>th</sup> Edition
- as starch	0.2g	McCance & Widdowson 6 <sup>th</sup> Edition
Fat	0.8g	McCance & Widdowson 6 <sup>th</sup> Edition
- as saturates	0.1g	McCance & Widdowson 6 <sup>th</sup> Edition
- as mono unsaturates	0.1g	McCance & Widdowson 6 <sup>th</sup> Edition
- as poly unsaturates	0.5g	McCance & Widdowson 6 <sup>th</sup> Edition
Protein	3.1g	McCance & Widdowson 6 <sup>th</sup> Edition
Fibre	2.1g	McCance & Widdowson 6 <sup>th</sup> Edition
Sodium	16mg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin A	1101µg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin B <sub>6</sub>	0.9mg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin B <sub>12</sub>	0µg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin C	6mg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin D	0.0µg	McCance & Widdowson 6 <sup>th</sup> Edition
Vitamin E	1.71mg	McCance & Widdowson 6 <sup>th</sup> Edition
Thiamin	0.06mg	McCance & Widdowson 6 <sup>th</sup> Edition
Riboflavin	0.05mg	McCance & Widdowson 6 <sup>th</sup> Edition
Niacin	0.9mg	McCance & Widdowson 6 <sup>th</sup> Edition
Folic Acid	52µg	McCance & Widdowson 6 <sup>th</sup> Edition
Biotin	0.1µg	McCance & Widdowson 6 <sup>th</sup> Edition
Pantothenic Acid	0.21mg	McCance & Widdowson 6 <sup>th</sup> Edition
Calcium	150mg	McCance & Widdowson 6 <sup>th</sup> Edition
Phosphorus	48mg	McCance & Widdowson 6 <sup>th</sup> Edition
Iron	1.7mg	McCance & Widdowson 6 <sup>th</sup> Edition
Magnesium	31mg	McCance & Widdowson 6 <sup>th</sup> Edition
Zinc	0.6mg	McCance & Widdowson 6 <sup>th</sup> Edition
Iodine	2µg	McCance & Widdowson 6 <sup>th</sup> Edition
Potassium	340mg	McCance & Widdowson 6 <sup>th</sup> Edition

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### **GMO DECLARATION**

Does the product, or any of its ingredients contain any genetically modified material (whether viable or not)? YES / NO

Is the product or any of its ingredients not substantially equivalent as a consequence of the use of genetic modification? YES / NO

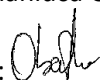
Is the product or any of its ingredients produced from, but not containing any genetically modified material? YES / NO

Have genetically modified organisms been used as processing aids or additives used in connection with the production of the food or any of its ingredients? YES / NO

Have genetically modified organisms been used to produce processing aids or additives but where such genetically modified organisms are not present in the processing aid as used in connection with the production of the food or any of its ingredients? YES / NO

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 


Date: 31<sup>st</sup> January 2020

### **IRRADIATION POLICY**

I confirm that the product supplied by Foodnet Limited under this specification has not undergone any irradiation treatment or process. I further confirm that no ingredient or processing aid used in conjunction with this product has undergone irradiation treatment.

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 

Date: 31<sup>st</sup> January 2020

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## **FOOD INTOLERANCE**

<b>Food Intolerance Data</b>					
Does the material supplied contain any of the following? (NO) Absent, (YES) Present					
<b>Allergen</b>		<b>NO / YES</b>	<b>Reason for presence if YES</b>		
Milk & Milk Derivatives		NO			
Egg & Egg Derivatives		NO			
Animal Products (*)		NO			
Fish/Shellfish/Crustaceans/Molluscs		NO			
Cereals (**)		NO			
Gluten		NO			
Yeast/Yeast Extract		NO			
Soya/Soya Derivatives		NO			
Fruit & Fruit Derivatives		NO			
Beef & Beef Products		NO			
Pork & Pork Products		NO			
Lamb & Lamb Products		NO			
Poultry & Poultry Products		NO			
Legumes		NO			
Peanuts		NO			
Sulphite >10ppm		NO			
MSG		NO			
BHA / BHT		NO			
Benzoates		NO			
Glutamates		NO			
Azo & Coal Tar Dyes		NO			
Added Colour		NO			
Added Flavour		NO			
Preservatives		NO			
Antioxidants		NO			
Added Salt		NO			
Nuts/Nut Oils		NO			
Caffeine		NO			
Sesame Products		NO			
Garlic		NO			
Poppy Seeds		NO			
Mustard		NO			
Celery/Celery		NO			
Lupins		NO			
*Including any product derived from slaughtered animals, e.g. gelatine, rennet					
**Including wheat, corn, barley, rye, oats, etc.					
<b><u>Please be aware the manufacturing sites we supply this item from may handle allergens in production. Procedures are in place to prevent cross-contamination.</u></b>					
<b>Is this product Suitable for:</b>					
<b>Vegans</b>	Yes (Not certified)	<b>Vegetarians</b>	Yes	<b>Organic</b>	No
<b>Halal</b>	Yes (Not certified)	<b>Kosher</b>	Yes (Not certified)		

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### **FOOD ADDITIVES**

E. Number	Name	In Which Ingredient	Function in Ingredient	Function in Final Product	% In Final Product

### **COSHH Data**

Treat as you would any frozen material i.e. if engaged in prolonged handling of the vegetables wear gloves.

Care should be used when lifting full cases of vegetables.

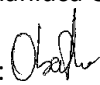
There are no other perceived COSHH implications regarding the use of frozen vegetables.

THE CONTENTS OF THIS SPECIFICATION ARE CONFIDENTIAL TO FOODNET LTD AND THE CUSTOMER, AND MAY NOT BE DISCLOSED TO ANY OTHER PARTY.

Signed on behalf of Foodnet Ltd:

Name: Gianluca Oberto

Job Title: Technical Manager

Signature: 

Date: 31<sup>st</sup> January 2020

Signed on behalf of the Customer:

Name:

Job Title:

Signature:

Date:

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## **PROCESS INFORMATION**

### **PROCESS FLOW CHART\***

\*Note: this is a generic flow chart which does not refer to any specific production site.

#### **LEAF SPINACH**

Raw Material Receipt → QA Check



Hopper



Cleaning



Inspection



Flood Washing



Cutting → 40x40mm



Blanching



Cooling → 10°C



Freezing → -18°C QA Check



Cold Storage → -18°C



Tipping



Inspection



Carton Fill → QA Check



Check Weigh



Metal Detection → QA Check



Palletise



Cold Storage → -18°C



Despatch → -18°C

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### Issues & Amendments

Issue N°	Amend. N°	Date	Amendments	Compiled by
1	1	01/02/2016	New entry	G. Oberto
2	1	01/05/2017	Defect tolerances – minimum ref samples; Reviewed BB and Traceability info. Added Storage Conditions. Reviewed Food Intolerance table, Flow Chart and Amendment table.	G. Oberto
3	1	31/01/2020	3 Year update – general revision	G. Oberto

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