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## Product Specification

### Leaf Spinach

Date: 4<sup>th</sup> August 2008

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**PACK SIZE** 1 x 10kg

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

**GENERAL** The product shall be prepared from fresh sound raw material that is free from all toxic residues and taints. The final product shall comply with all current U.K. and E.C. Food Legislation.

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

**PROCESSING** Spinach leaves are delivered to the factory, cleaned, inspected, washed, blanched, cooled and frozen (-18°C or below) into IQF leaves and stored in bulk pallets at -23°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 cold store at -23°C, until despatched at -18°C.

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

Processing: - Raw material  
Final Product  
Peroxidase  
Temperature

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

**DEFECT TOLERANCES** Product shall be checked at least hourly against the following tolerances for defects: -

**Per 1000g**

Clumps (>50g) Nil  
Clumps (30-50g) 3  
Foreign Matter Nil

**Per 500g**

Stalk 20% w/w  
Fragments (<10mm) 15% w/w  
E.V.M. 4  
Yellow Leaves 3  
Discoloured Leaves 4  
Flowerbuds (>25mm) 3  
Crown 3  
Root Pieces 1

**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 either greater than 30g but less than 50g, Clumps weighing more than 50g are not permitted. Clumps shall be defrosted after weighing, and examined for further defects.

**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.

**Stalk**

This includes any unattached stalk.

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**Fragments**

These are pieces of spinach measuring less than 10mm.

**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.

**Discoloured Leaves**

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

**Flowerbuds**

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

**Crown**

These are tough parts of the spinach plant still attached to the leaves.

**Root Pieces**

These are parts of the root structure of the spinach plant.

**ORGANOLEPSIS** (Carried out on a cooked 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
T V C @ 30°C	$5 \times 10^5$	$1.5 \times 10^6$
Total Coliforms	$1 \times 10^3$	$1 \times 10^4$
E. coli	<10/g	$1 \times 10^2$
Yeasts & Moulds	$1 \times 10^3$	$5 \times 10^3$
Staph aureus	10/g	$1 \times 10^2$
Salmonella	Absent in 25g	Absent in 25g
Listeria sp.	Absent / 25g	$1 \times 10^2$

**ANALYTICAL**

Peroxidase	Negative
Nitrate	≤2000ppm
Nitrite	<20ppm
Dry Matter	6.5% minimum

**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 hourly using 3.5mm ferrous and 3.5mm non-ferrous & 4.5mm stainless steel test pieces.

**CODING**

Best Before End shall be twenty four months following the month of packing e.g. if packed in May 2008 then **BEST BEFORE END MAY 2010**.

Production / Traceability Code Four figure International date code (Year number, Day number) plus factory identification code and shift code e.g. product packed 1 January 2008 = **8001**.

**CARTON LINERS**

Dark blue food grade polythene liner of a **minimum** thickness of 45µm.

**CARTONS**

Corrugated fibreboard of glued construction, no metal staples to be used. Shall be sealed using dark 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	26	McCance & Widdowson 5 <sup>th</sup> Edition
Energy - kJ	111	McCance & Widdowson 5 <sup>th</sup> Edition
Moisture	89.5g	McCance & Widdowson 5 <sup>th</sup> Edition
Carbohydrate	0.9g	McCance & Widdowson 5 <sup>th</sup> Edition
- as sugars	0.6g	McCance & Widdowson 5 <sup>th</sup> Edition
- as polyols	0.0g	McCance & Widdowson 5 <sup>th</sup> Edition
- as starch	0.3g	McCance & Widdowson 5 <sup>th</sup> Edition
Fat	0.8g	McCance & Widdowson 5 <sup>th</sup> Edition
- as saturates	0.2g	McCance & Widdowson 5 <sup>th</sup> Edition
- as mono unsaturates	0.1g	McCance & Widdowson 5 <sup>th</sup> Edition
- as poly unsaturates	0.4g	McCance & Widdowson 5 <sup>th</sup> Edition
Protein	3.9g	McCance & Widdowson 5 <sup>th</sup> Edition
Fibre	2.1g	McCance & Widdowson 5 <sup>th</sup> Edition
Sodium	19mg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin A	589µg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin B6	0.17mg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin B12	0µg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin C	20mg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin D	0.0µg	McCance & Widdowson 5 <sup>th</sup> Edition
Vitamin E	1.71mg	McCance & Widdowson 5 <sup>th</sup> Edition
Thiamin	0.07mg	McCance & Widdowson 5 <sup>th</sup> Edition
Riboflavin	0.09mg	McCance & Widdowson 5 <sup>th</sup> Edition
Niacin	1.2mg	McCance & Widdowson 5 <sup>th</sup> Edition
Folic Acid	150µg	McCance & Widdowson 5 <sup>th</sup> Edition
Biotin	0.1µg	McCance & Widdowson 5 <sup>th</sup> Edition
Pantothenic Acid	0.27mg	McCance & Widdowson 5 <sup>th</sup> Edition
Calcium	160mg	McCance & Widdowson 5 <sup>th</sup> Edition
Phosphorus	77mg	McCance & Widdowson 5 <sup>th</sup> Edition
Iron	2.2mg	McCance & Widdowson 5 <sup>th</sup> Edition
Magnesium	49mg	McCance & Widdowson 5 <sup>th</sup> Edition
Zinc	0.8mg	McCance & Widdowson 5 <sup>th</sup> Edition
Iodine	2µg	McCance & Widdowson 5 <sup>th</sup> Edition
Potassium	740mg	McCance & Widdowson 5 <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: Alan Gosling Job Title: Technical Consultant

Signature:  Date: 4<sup>th</sup> August 2008

**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: Alan Gosling Job Title: Technical Consultant

Signature:  Date: 4<sup>th</sup> August 2008

Where any answer is YES, see details below.

Product or Material	Details of Genetic Modification

I confirm I have made any necessary enquiries and obtained relevant written assurances from suppliers to verify the accuracy of the details provided above. I confirm the above data supplied is correct and can be used without reservation to advise customers.

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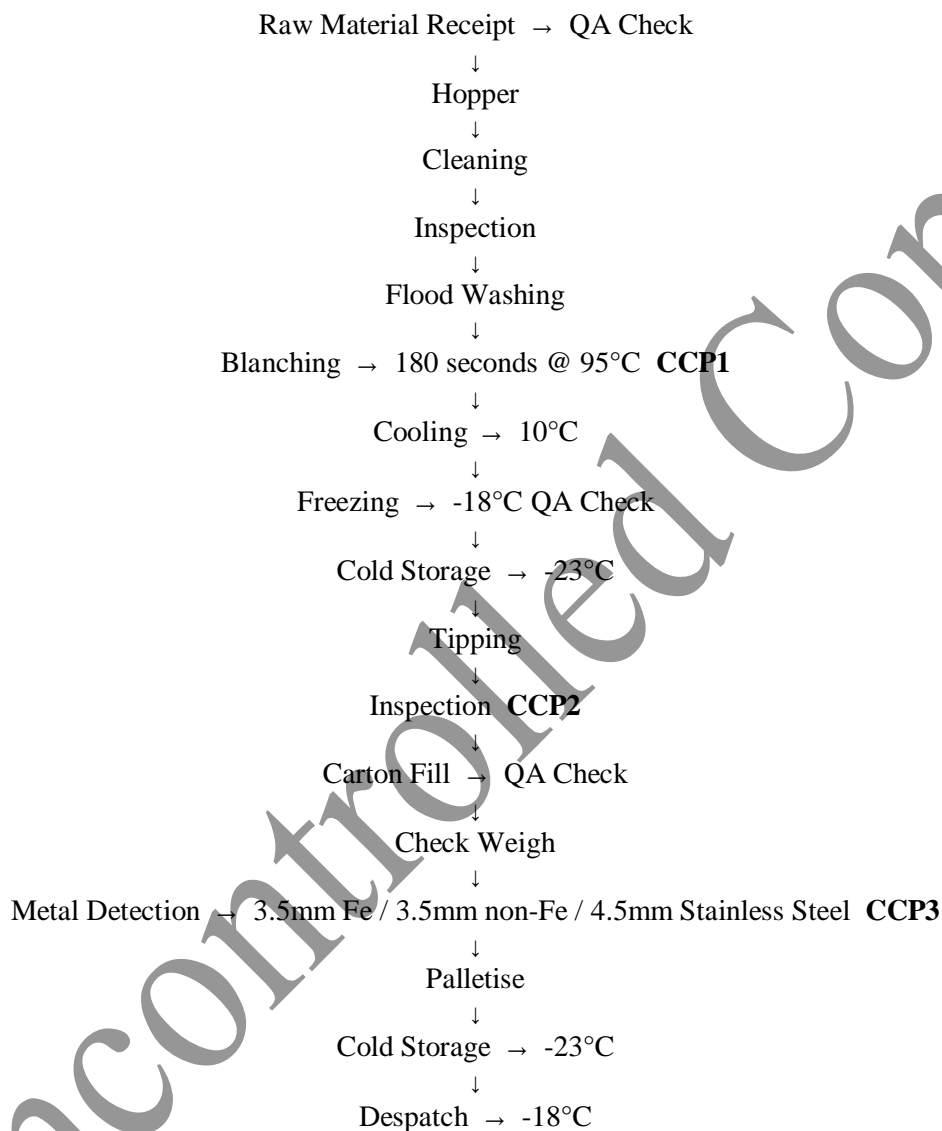
**FOOD INTOLERANCE**

<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/Crustations/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/Celariac	NO	
Lupins	NO	
*Including any product derived from slaughtered animals, e.g. gelatine, rennet		
**Including wheat, corn, barley, rye, oats, etc.		
Is the material suitable for:		
Vegetarians?	Y / N	
Vegans?	Y / N	
Kosher?	Y / N	
Halal?	Y / N	
Organic?	Y / N	

**FOOD ADDITIVES**

<b>E. Number</b>	<b>Name</b>	<b>In Which Ingredient</b>	<b>Function in Ingredient</b>	<b>Function in Final Product</b>	<b>% In Final Product</b>
None					

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**PROCESS INFORMATION****PROCESS FLOW CHART****LEAF SPINACH****CRITICAL CONTROL POINTS:**

to include time / temperature / frequency / target and sensitivity of all process steps.

CCP Number	Process Step	Controls in place
CCP1	Effective blanching to minimise microbiological loading. Half hourly checks.	Continuous chart recoding of temperature and guaiacol test for adequate blanching.
CCP2	Inspection of the product. Continuous control	To remove foreign material via manual inspection
CCP3	Metal detector efficiency. Hourly checks.	Testing of detector using certified test pieces of 3.5mm Ferrous and non-Ferrous, 4.5mm stainless steel.

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**COSHH Data For Frozen Vegetables**

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 frozen 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: Alan Gosling

Job Title: Technical Consultant

Signature:



Date: 4<sup>th</sup> August 2008

Signed on behalf of the Customer:-

Name:

Job Title:

Signature:

Date:

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