

- 1 -

WET SOUP CONCENTRATES

TECHNICAL FIELD

The present invention relates to marketable products capable of being
5 conveniently converted to a hot ready to serve form.

BACKGROUND

There is an increasing emphasis on convenience in the preparation of foods. This
is also the case with soup products.

10 Dry powder type soups are known. These frequently require either (i) mixing
with cold water and thereafter heating or (ii) mixing with hot water. Care is required
particularly with option (ii) to ensure some degree of consistency without lumps in the
resultant product.

We perceive a premium attaching to packaged wet soup forms where at least some
15 (and preferably most) of the content has been in line puree or broth derived. Such a wet
soup type product has the prospect of being marketed as originating from natural
components with a minimum of unnecessary or out of line processing steps.

Such a packaged wet concentrate product that we envisage (and this excludes
instant dry powder soup product forms) desirably will not require a final heating step on a
20 stove top in a microwave or the like. We envisage such a product as benefiting from an
ability to be out of package diluted with boiling water or the like to a hot ready to serve
form.

The present invention accordingly recognises the desirability of providing and has
as an object the provision of a liquid including concentrate of a soup, which can
25 preferably be removed from a container for dilution with hot water to an instant hot
“ready to serve” form.

BRIEF DESCRIPTION OF THE INVENTION

The present invention in one aspect involves **a wet soup in a container capable**
30 **of reconstitution with hot water to provide an instant soup.** Examples include 70-100
g wet soup sachets (e.g. foil sachets) capable of being reconstituted with added boiling
water in a mug to form a ready to eat or serve hot soup.

As used herein the term “and/or” means “and” or “or” or where appropriate both.

- 2 -

As used herein the term “(s)” following a noun means as is appropriate the singular or plural or both forms of that noun.

As used herein the term “ready to serve” or “ready to eat” means a soup ready to consume.

5 As used herein the term “in line” in respect of a food stuff and/or food stuff flavouring derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats, fish and shellfish means a procedure akin to that of a normal start to finish cooking procedure, i.e. without being processed to a dry powder form. For example (optionally with the addition of at least water), in the case of
10 vegetables and fruits, it can involve the preparation of a puree that is never totally dried and, in the case of meats, fish and shellfish, can include the preparation of a broth that is never totally dried which yet which, in each case, with optional water content reduction and/or free water absorption and/or other viscosity and/or perceived viscosity treatment, can nonetheless be filled into an appropriate container in a suitable temperature range
15 (ideally cold or cool filled if any viscosity and/or perceived viscosity increasing agent(s) may give rise to undue thickening within the container if hot filled), be sealed therein and still later be diluted with boiling water to some targeted viscosity or perceived viscosity.

In another aspect the invention is a **soup concentrate product** comprising or including

20 a sealed container,
 a liquid including soup concentrate adapted to be diluted by boiling or near boiling water to a ready to serve soup form, the concentrate being within the container,

wherein said concentrate is capable of being expressed, poured or otherwise removed from the container once opened,

25 **and wherein** the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in excess to that of the liquid including concentrate thereby to achieve a soup, to a target volume less than 400 mls at a temperature of at least 55°C.

Preferably the concentrate is or includes a puree and/or broth.

30 Preferably the concentrate has been cold or cool (e.g. at ambient temperature(s)) filled into the container prior to sealing.

Preferably the sealed container of concentrate has been retorted after sealing of the container.

- 3 -

Preferably the container bears instructions to dilute the content of the container with boiling (or near boiling water) to provide such a soup.

Preferably the concentrate has a texturiser and/or thickener at least one of (i) a suitable starch and/or starch derivative and (ii) a suitable fruit and/or vegetable fibre.

5 Preferably the concentrate includes (added) water.

Preferably the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water or near boiling water to achieve a target soup volume substantially lump free within the range of from 200 to 350 mls at a temperature of at least 55°C.

10 Preferably the concentrate has a starch and/or starch derivative inclusion and the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in excess to that of the liquid including concentrate thereby to achieve a substantially lump free soup to a target volume less than 400 mls at a temperature of at least 55°C.

15 Preferably the concentrate is of a weight of from 70g to 100g (more preferably from 80g to 90g) (most preferably about 85g).

Preferably the dilution ratio of water to concentrate is in a range of 1.5:1 and above. Preferably the dilution ratio of water to concentrate range is not above 5:1.

Preferably the dilution ratio of water to concentrate is at least 1.9:1.

20 Preferably the dilution ratio of water to concentrate is in the range of 1.9:1 to 2.5:1.

Preferably the target volume with the use of boiling water the temperature will be at least 60°C (more preferably from 60 to 65°C).

25 In another aspect the invention is a **retorted soup product** comprising or including

a sealed container,

a water and pomace, pomace fibre or pomace fibre derivative including concentrate adapted to be diluted by boiling or near boiling water, the concentrate being within the container,

30 **wherein** said concentrate is capable of being expressed, poured or otherwise removed from the container once opened,

and wherein the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in

- 4 -

excess to that of the liquid including concentrate thereby to achieve a substantially lump free soup to a target volume less than 400 mls at a temperature of at least 55°C.

In still another aspect the invention is a **retorted soup product** comprising or including

- 5 a sealed container,
 a water and citrus fibre including soup concentrate adapted to be diluted by boiling or near boiling water, the concentrate being within the container,

wherein said concentrate is capable of being expressed, poured or otherwise removed from the container once opened,

- 10 **and wherein** the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in excess to that of the liquid including concentrate thereby to achieve a soup to a target volume less than 400 mls at a temperature of at least 55°C,

- and wherein** the container bears instructions to dilute the content of the container
15 with boiling (or near boiling water) to provide such a soup.

In another aspect the invention is a **packaged wet form food and retorted concentrate** where the concentrate itself is capable of dilution with boiling water, or near boiling water, to the form of a ready to serve soup, said concentrate comprising or including

- 20 a food stuff and/or food stuff flavouring derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats fish and shellfish, water (whether added and/or inherently in any ingredient),
 a viscosity and/or perceived viscosity increasing ingredient or ingredients,
 optionally a bulking and/or texturising ingredient or ingredients,
25 optionally a flavouring agent or flavouring agents,
 optionally an emulsifier or emulsifiers,
 optionally a preservative or preservatives,
 optionally a colouring agent or agents,
 optionally a stabiliser or stabilisers, and
30 optionally a pH adjustment agent or agents.

In yet another aspect the invention is a **packaged and retorted wet form food concentrate** where the concentrate itself is capable of dilution with boiling water, or near

- 5 -

boiling water to the form of a ready to serve soup, said concentrate comprising or including

5 a food stuff and/or food stuff flavouring *in line* derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats, fish and shellfish,

water (whether added and/or inherently in any ingredient),
a viscosity and/or perceived viscosity increasing ingredient or ingredients,
optionally a bulking and/or texturising ingredient or ingredients,
optionally a flavouring agent or flavouring agents,
10 optionally an emulsifier or emulsifiers,
optionally a preservative or preservatives,
optionally a colouring agent or agents,

In another aspect the invention is a **packaged and retorted wet form food concentrate** where the concentrate itself is capable of dilution with boiling water, or near
15 boiling water to the form of a ready to serve soup, said concentrate comprising or including

a food stuff and/or food stuff flavouring *in line* derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats, fish and shellfish,

20 water (whether added and/or inherently in any ingredient),
a viscosity and/or perceived viscosity increasing ingredient or ingredients,
optionally a bulking and/or texturising ingredient or ingredients,
optionally a flavouring agent or flavouring agents,
optionally an emulsifier or emulsifiers,
25 optionally a preservative or preservatives,
optionally a colouring agent or agents,
optionally a stabiliser or stabilisers, and
optionally a pH adjustment agent or agents.

Preferably the dilution ration of water to concentrate is in the range 1.5:1 to 5:1
30 and most preferably 1.9:1 to 2.5:1.

Preferably the concentrate has been retorted.

Preferably in said packaged wet form food concentrate said food stuff and/or food stuff flavouring is distinct from the viscosity and/or perceived viscosity increasing

- 6 -

ingredient or ingredients although in some forms, particularly those based upon a tomato puree, the same ingredient can give rise to satisfying both requirements.

Preferably said concentrate is of a soup and the mass of the concentrate in the package is less than 100 gms (most preferably about 85 gms).

5 In some forms of the present invention the packaged wet form food concentrate may not be retorted in which case preferably it is in a substantially sterile form owing to the inclusion of a preservative or preservatives and/or appropriate pH adjustment agent or agents.

10 Preferably whatever form of the concentrate preferably it includes a viscosity at the time of packaging that enables the filling of the package and the subsequent sealing thereof, the opening and expression from the package of the concentrate at an ambient temperature (such as between 10 to 30°C inclusive) and/or the dilution of the concentrate with hot water to a soup consistency where the viscosity in that diluted form is that desirable for a soup of that kind.

15 Viscosity and/or perceived viscosity increasing agent(s) are selected preferably from the following:

Starches:

Native

Physically modified

20 Chemically modified

From origins Wheat, Potato, Corn, Waxy Maize, Tapioca

Gums, etc.:

Locust Bean Gum

Pectins (inc. different types)

25 MCC

CMC

Guar

Other:

Citrus Fibre

30 Pea Flour

Pumpkin Powder

Other dried fibres (cereal, vegetable, fruit)

Fat mimetic

Wet vegetable purees

Some of these options can also act as bulking and/or texturising and/or free water absorption agents.

5 In some forms of the present invention the viscosity and/or perceived viscosity increasing ingredient or ingredients can include an ingredient adapted to absorb water of the concentrate thereby bestowing a perceived viscosity increasing effect. Examples of such an agent is a dry citrus fibre (for example, any one or more of lemons and/or oranges) or fibres such as those of the tomato.

10 In other forms however the agent can be one that modifies the physical form of the concentrate by a gel or other forming characteristic that directly or indirectly has an effect on viscosity and/or perceived viscosity.

Such gel providing agents can include appropriate starches capable of being used in a procedure which does not generate excessive gel or thickening prior to filling of the container and its sealing and/or post such filling and sealing and prior to expression or
15 pouring or otherwise being removed from the container.

It should be appreciated that it is envisaged desirable to allow the container to be emptied prior to mixing with the hot water although, in some less preferred forms, if desired, the container can have provision for receiving the dilution volume in total or in part prior to the expression, pouring or other removal from the container of the fully or
20 partly diluted product.

Preferably the parameters of viscosity are any of those hereinafter described.

We envisage a desirability of being able to express or otherwise remove the concentrate for a soup from a container (such as a retortable container such as a retort pouch pack) to immediately be diluted in a cup, bowl, jug with boiling, or near boiling
25 water, to provide, with a minimum of lump development, a final ready to serve product.

Because we perceive an advantage in requiring no further heating apart from the sensible heat captured in the water to provide the dilution, the sensible heat to be transferred to the mass of the concentrate preferably must deliver the diluted product to a consumable temperature.

30 An ideal temperature we envisage for such a ready to eat soup is in the range of at least 55°C and, most preferably from 60 to 65°C. We envisage that with boiling water and a water including concentrate (and taking into account the likely heat loss into a cup

or other such container at ambient temperatures) the ratio of boiling water or near boiling water to concentrate on a weight for weight basis must be at least 1.9:1.

We have also determined that a desirable serving size, if to provide a soup, is in the range of 250 to 300 ml and for dilution to an optimal serving temperature, we
5 envisage a preferred mass of the concentrate to be of the order of about 85 g.

In still another aspect the present invention is **a process for in line producing a concentrate in a container** capable of dilution with boiling or near boiling water to a hot ready to serve soup, said process comprising or including the steps of

preparing a dilutable wet concentrate puree and/or broth of an ingredient or
10 ingredients selected at least from

- (i) the group consisting of vegetables, fruits, fungi, mammalian and poultry meats, fish and shellfish, and
optionally also (ii) one or more viscosity and/or perceived viscosity increasing agent, and

15 *filling and sealing* a quantity of the dilutable wet concentrate into a suitable container, (and optionally retorting the container sealed concentrate), the process being further characterised by any one or more of:

- (i) the mass of the concentrate in the container is from 70 to 100 gms (preferably about 85 gms),
- 20 (ii) the concentrate is cold or cool filled into the container prior to its sealing,
- (iii) the concentrate without the heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in excess to that of the liquid including concentrate thereby to achieve a soup, to a target volume less than 400 ml's at a temperature of at
25 least 55°C,
- (iv) the dilution instructed on the pack provides at least a ready to serve soup of a temperature and viscosity appropriate for such a soup, and/or
- (v) the sealed concentrate has been retorted.

In a further aspect the present invention consists in **a product** made by a process
30 as aforesaid.

In still a further aspect the present invention consists in **the use of a product and/or concentrate** of any form in accordance with the present invention, such use involving dilution with boiling or near boiling water.

Ideally such use is with boiling water but having regard to the heat sink that a container such as cup, bowl, jug or the like may provide the temperature can be below boiling provided however the hot water is initially at boiling or at a temperature preferably within 10 and most preferably a few degrees of boiling.

5

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred forms of the present invention will now described with reference to the accompanying drawings in which

Figure 1 is a generic flow diagram of the process of the present invention, and

10

Figure 2 is an example of that process for a chicken and vegetable soup.

DETAILED DESCRIPTION OF THE INVENTION

In the preferred form of the present invention the container is preferably a retort pouch type pack rather than other container forms. Nevertheless it is still within the scope of the present invention to include containers which can be a can or the like.

15

A suitable retortable pouch pack is that known as the Greenseas Pouch albeit preferably with modification to shape to aid product removal after opening (e.g. by cutting, tearing, etc.).

The concentrate of the present invention is to be readily reconstituted to the correct dilution and serving temperature by the addition of an instructed volume of boiling water (e.g. on the package, by means of instruction to empty into a cup and fill the cup with stirring with boiling water).

20

The pack size will be in the range 70 g to 100 g (about 85 g) which can be made to a (preferably 200 to 350 ml (e.g. 300 ml)) serving with boiling water to reach a desired temperature at least 55°C and preferably around 65°C.

25

Tomato based concentrates we have found to provide suitable viscosity characteristics for this type of product. Tomato paste lends itself to this application well as it readily dilutes with hot or cold water without any tendency to form lumps. It is also very temperature stable.

30

Another content suitable for providing such viscosity and textural characteristics is the use of fruit (e.g. Tomato) and vegetable fibres. Such products are used currently in drink and food formulations. Their properties include some independence to temperature and acidity. These fibres are available as commercial preparations or directly from food-

- 10 -

grade waste. Such content alone or in conjunction with conventional thickeners, such as starches and gums (or any other suitable means), can provide the textural and mouthfeel characteristics some products require.

Any product developed to meet aims for products of our invention, because of the large amount of water to be added by the consumer, requires as little as possible water addition during manufacture. One way of controlling free water in a recipe whilst conferring textural advantages is the addition of citrus fibre.

With respect therefore to the annexed drawing (Figure 1) the following considerations of the process are to be kept in mind.

10

Area Notes:

1. INGREDIENTS:

(A) GENERAL

Colour/Flavour Delivery

15 Effect on Viscosity

Requirements for Preparation before the kettle stage.

(B) FUNCTIONAL INGREDIENTS:

Presence of starch as a post process thickener only

20 Citrus fibre as a water retentive agent

Some flavouring ingredients are also functional (e.g. tomato paste)

Need to slurry starch, slurry other dries if water availability allows

Higher starch levels cause problems with reconstitution

Functional ingredients can be limited in use by their organoleptic character

25

2. AT THE KETTLE:

Which ingredients need cooking? (micro / enzymic / flavour)

Which ingredients are fragile and need to be added last / reduced mixing speed?

How well will the ingredients integrate? (fat / lumping / sink / float)

30 How thick will the mix be after each addition? (try to thicken late)

Do we have water available to slurry/wash out skips/thin mix for pumping?

What effect does heat have on functional / other ingredients?

What is the final viscosity (can we pump it? - At any given temperature)

- 11 -

What limits are there on hold time (change in viscosity/micro stability/flavour/colour)

Temperature maintenance during transfer?

Need to keep kettle temps below 60°C if starch is used – else thickens too much.

5 3. **AT THE FILLER:**

Need to keep filler temps below 60°C if starch is used – else thickens too much

Particle suspension

Product separation / thickening

Maximum hold times (as at kettle)

10 Limitations imposed by packaging format?

Headspace

Weight control

Temperature maintenance during filling

Must work within viscosity limits of factory preparation / transfer capability.

15

4. **THERMAL PROCESSING:**

Initial Temperature

Initial Viscosity

Final Viscosity

20 Protection of product quality

Attainment of commercial sterility (depends acidity/initial loading of ingredients)

5. **RECONSTITUTION / CONSUMPTION:**

Higher starch levels cause problems with reconstitution

25 Ease of reconstitution with boiling water

Homogeneity of mix achieved (no lumps)

Adequate final temperature is achieved by a minimum 1:1.9 ratio of product:boiling water

Flavour / Texture / Colour etc.

Ease of Removal from pouch – often the limiting factor for final product thickness.

30 Figure 2 shows a preferred flow diagram for a chicken and vegetable soup.

The contents of Figures 1 and 2 are here included by way of reference.

- 12 -

Example 1**Tomato Soup**

Ingredients: Concentrated Tomatoes (85%) (contains 394g of tomatoes per 100g), sugar, onions, salt, herbs (including Basil), butter, acidity regulator (Sodium Bicarbonate), black pepper, spice.

The instructions [as also for the other examples] to be included on the container is preferably to

1. Squeeze contents of sachet gently into 300ml mug.
2. Add boiling water, filling mug half way and stir for 10-15 seconds.
3. Fill to the top with further boiling water, stir again and enjoy.

Nutrition Information		
Servings per package: 1		
Serving size: 300g* (i.e. when diluted with boiling water to 300 ml)		
	AVG Quantity Per Serving	AVG Quantity Per 100g
Energy	360kj	120kj
Protein	2.5g	0.8g
Fat, Total	1.1g	0.4g
- Saturated	0.6g	0.2g
Carbohydrate	14.5g	4.8g
- Sugars	12.4g	4.1g
Dietary Fibre	3.0g	1.0g
Sodium	1110mg	370mg
Lycopene	23.9mg	8.0mg

Example 2**15 Creamy Corn and Chicken**

Ingredients: Corn (69%), water, chicken (7%), red pepper, chicken flavour (contains wheat, milk, flavour enhancer (621)), Tapioca Thickener (1442), sugar, salt, parsley.

Nutrition Information		
Servings per package: 1		
Serving size: 300g* (i.e. when diluted with boiling water to 300 ml)		
	AVG Quantity Per Serving	AVG Quantity Per 100g
Energy	3750kj	125kj
Protein	4.2g	1.4g
Fat, Total	1.5g	0.5g
- Saturated	0.5g	0.2g
Carbohydrate	12.9g	4.3g
- Sugars	2.3g	0.8g
Dietary Fibre	2.8g	0.9g
Sodium	1130mg	375mg

Example 3**Spicy Thai Noodle Soup**

- 5 Ingredients: Water, vegetables (onions, carrots, peas, red pepper, potatoes), wheat pasta (24%), herbs (lemongrass, Coriander, parsley), red chillies, chicken flavours (contain milk, sesame oil, flavour enhancers (621, 627, 631)), dietary fibre (citrus fibre), yeast extract, salt, sugar, natural onion flavour, white pepper, colours (160, 101), soy oil, traces of egg & barley.

Nutrition Information		
Servings per package: 1		
Serving size: 300g* (i.e. when diluted with boiling water to 300 ml)		
	AVG Quantity Per Serving	AVG Quantity Per 100g
Energy	360kj	120kj
Protein	2.5g	0.8g
Fat, Total	1.1g	0.4g
- Saturated	0.6g	0.2g
Carbohydrate	14.5g	4.8g
- Sugars	12.4g	4.1g
Dietary Fibre	3.0g	1.0g
Sodium	1110mg	370mg
Lycopene	23.9mg	8.0mg

10 **Example 4****Minestrone**

- 15 Ingredients: Concentrated tomatoes, wheat pasta, carrots, potatoes, green beans, sugar, salt herbs, yeast extract, spinach, white wine vinegar, cheese, acidity regulator (sodium bicarbonate), traces of fish, egg & barley.

Nutrition Information		
Servings per package: 1		
Serving size: 300g* (i.e. when diluted with boiling water to 300 ml)		
	AVG Quantity Per Serving	AVG Quantity Per 100g
Energy	405kj	130kj
Protein	4.0g	1.3g
Fat, Total	0.6g	0.2g
- Saturated	0.2g	0.1g
Carbohydrate	16.7g	5.6g
- Sugars	9.4g	3.1g
Dietary Fibre	3.2g	1.1g
Sodium	885mg	295mg
Lycopene	22.0mg	7.3mg

CLAIMS:

1. **A soup concentrate product** comprising or including
 a sealed container,
 a liquid including soup concentrate adapted to be diluted by boiling or near boiling
5 water to a ready to serve soup form, the concentrate being within the container,
 wherein said concentrate is capable of being expressed, poured or otherwise
 removed from the container once opened,
 and wherein the concentrate without heating and at an ambient temperature
 within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in
10 excess to that of the liquid including concentrate thereby to achieve a soup, to a target
 volume less than 400 mls at a temperature of at least 55°C.
2. A product of claim 1 wherein the concentrate is or includes a puree and/or broth.
3. A product of claim 1 or 2 wherein the concentrate has been cold or cool (e.g. at
 ambient temperature(s)) filled into the container prior to sealing.
- 15 4. A product of any one of the preceding claims that has been retorted after sealing
 of the container.
5. A product of any one of the preceding claims wherein the container bears
 instructions to dilute the content of the container with boiling (or near boiling water) to
 provide such a soup.
- 20 6. A product of any one of the preceding claims the concentrate has a texturiser
 and/or thickener at least one of (i) a suitable starch and/or starch derivative and (ii) a
 suitable fruit and/or vegetable fibre.
7. A product of any one of the preceding claims wherein the concentrate includes
 water.
- 25 8. A product of any one of the preceding claims wherein the concentrate without
 heating and at an ambient temperature within the range 10 to 30°C can, if desired, be
 diluted with boiling water or near boiling water to achieve a target soup volume
 substantially lump free within the range of from 200 to 350 mls at a temperature of at
 least 55°C.
- 30 9. A product of any one of the preceding claims wherein the concentrate has a starch
 and/or starch derivative inclusion and the concentrate without heating and at an ambient
 temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a
 volume in excess to that of the liquid including concentrate thereby to achieve a

- 15 -

- substantially lump free soup to a target volume less than 400 mls at a temperature of at least 55°C.
10. A product of any one of the preceding claims wherein the concentrate is of a weight of from 70g to 100g.
- 5 11. A product of claim 10 wherein that weight is from 80g to 90g.
12. A product of claim 11 wherein that weight is about 85g.
13. A product of any one of the preceding claims wherein the dilution ratio of water to concentrate is in a range of 1.5:1 and above.
14. A product of claim 13 wherein the dilution ratio of water to concentrate range is
10 not above 5:1.
15. A product of claim 14 wherein the dilution ratio of water to concentrate is at least 1.9:1.
16. A product of any one of the preceding claims wherein the dilution ratio of water to concentrate is in the range of 1.9:1 to 2.5:1.
- 15 17. A product or concentrate of any one of the preceding claims wherein at the target volume with the use of boiling water the temperature will be at least 60°C.
18. A product or concentrate of claim 31 wherein the temperature will be from 60 to 65°C.
19. **A retorted soup product** comprising or including
20 a sealed container,
a water and pomace, pomace fibre or pomace fibre derivative including concentrate adapted to be diluted by boiling or near boiling water, the concentrate being within the container,
wherein said concentrate is capable of being expressed, poured or otherwise
25 removed from the container once opened,
and wherein the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in excess to that of the liquid including concentrate thereby to achieve a substantially lump free soup to a target volume less than 400 mls at a temperature of at least 55°C.
- 30 20. **A retorted soup product** comprising or including
a sealed container,
a water and citrus fibre including soup concentrate adapted to be diluted by boiling or near boiling water, the concentrate being within the container,

wherein said concentrate is capable of being expressed, poured or otherwise removed from the container once opened,

and wherein the concentrate without heating and at an ambient temperature within the range 10 to 30°C can, if desired, be diluted with boiling water in a volume in
5 excess to that of the liquid including concentrate thereby to achieve a soup to a target volume less than 400 mls at a temperature of at least 55°C,

and wherein the container bears instructions to dilute the content of the container with boiling (or near boiling water) to provide such a soup.

21. **A packaged wet form food and retorted concentrate** where the concentrate
10 itself is capable of dilution with boiling water, or near boiling water, to the form of a ready to serve soup, said concentrate comprising or including

a food stuff and/or food stuff flavouring derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats fish and shellfish,
water (whether added and/or inherently in any ingredient),
15 a viscosity and/or perceived viscosity increasing ingredient or ingredients,
optionally a bulking and/or texturising ingredient or ingredients,
optionally a flavouring agent or flavouring agents,
optionally an emulsifier or emulsifiers,
optionally a preservative or preservatives,
20 optionally a colouring agent or agents,
optionally a stabiliser or stabilisers, and
optionally a pH adjustment agent or agents.

22. **A packaged and retorted wet form food concentrate** where the concentrate
itself is capable of dilution with boiling water, or near boiling water to the form of a ready
25 to serve soup, said concentrate comprising or including

a food stuff and/or food stuff flavouring *in line* derived from one or more of the group consisting of vegetables, fruits, fungi, mammalian and poultry meats, fish and shellfish,
water (whether added and/or inherently in any ingredient),
30 a viscosity and/or perceived viscosity increasing ingredient or ingredients,
optionally a bulking and/or texturising ingredient or ingredients,
optionally a flavouring agent or flavouring agents,
optionally an emulsifier or emulsifiers,

- 17 -

optionally a preservative or preservatives,
optionally a colouring agent or agents,
optionally a stabiliser or stabilisers, and
optionally a pH adjustment agent or agents.

- 5 23. A product or concentrate of claim 21 or 22 wherein the dilution ratio of water to concentrate on a weight basis is to be at least 1.5:1.
24. A product or concentrate of claim 23 wherein said ratio is at least 1.9:1.
25. A product or concentrate of claim 23 or 24 wherein said dilution ratio is below 5:1.
- 10 26. A product or concentrate of claim 25 wherein the dilution ratio is from 1.5:1 to 2.5:1.
27. A product or concentrate of any one of claims 21 to 26 wherein target diluted volume is from 200 to 350 mls.
28. A product or concentrate of claim 23 wherein said target volume is from 250-300 mls.
- 15 29. A product or concentrate of any one of claims 21 to 28 wherein the concentrate is of a weight from 70 g to 100 g.
30. A product or concentrate of claim 29 wherein the concentrate is of a weight from 80 g to 90 g.
31. A product or concentrate of claim 30 wherein said weight is about 85 g.
- 20 32. A product or concentrate of any one claims 21 to 31 wherein the concentrate has been cool or cold filled into the container prior to the sealing thereof.
33. A product of any one of claims 21 to 32 wherein the sealed container has been retorted.
34. A product or concentrate any one of the preceding claims wherein a suitable starch or starch derivative is present.
- 25 35. A product of any one of claims 21 to 34 wherein a suitable fruit and/or vegetable fibre is present.
36. A product or concentrate of claim 35 wherein the fibre present is at least one of (a) a dry citrus fibre (b) that of the tomato and/or (c) vegetable fibre.
- 30 37. A product of any one of claims 1 to 36 wherein viscosity and/or perceived viscosity increasing agent(s) selected from one or more the following are present:
- Native starch or starches,
- Physically modified starch or starches,

- 18 -

- Chemically modified starch or starches,
 Starch or starches originating from Wheat, Potato, Corn, Waxy Maize and/or
 Tapioca,
 Locust Bean Gum,
 5 Pectins (inc. different types),
 MCC,
 CMC,
 Guar Gum,
 Citrus Fibre,
 10 Pea Flour,
 Pumpkin Powder,
 Dried fibres (cereal, vegetable and/or fruit),
 Fat mimetic,
 Apple pomace, and
 15 Wet vegetable purees.
38. **A process for in line producing a concentrate in a container** capable of dilution
 with boiling or near boiling water to a hot ready to serve soup form, said process
 comprising or including the steps of
- preparing* a dilutable wet concentrate puree and/or broth of an ingredient or
 20 ingredients selected at least from
- (i) the group consisting of vegetables, fruits, fungi, mammalian and poultry
 meats, fish and shellfish, and
 optionally also (ii) one or more viscosity and/or perceived viscosity
 increasing agent, and
 - 25 *filling and sealing* a quantity of the dilutable wet concentrate into a suitable
 container, (and optionally retorting the container sealed concentrate), the process being
 further characterised by any one or more of:
 - (ii) the mass of the concentrate in the container is from 70 to 100 gms
 (preferably about 85 gms),
 - 30 (iii) the concentrate is cold or cool filled into the container prior to its sealing,
 - (iv) the concentrate without the heating and at an ambient temperature within
 the range 10 to 30°C can, if desired, be diluted with boiling water in a
 volume in excess to that of the liquid including concentrate thereby to

- 19 -

achieve a soup to a target volume less than 400 mls at a temperature of at least 55°C,

(v) the dilution instructed on the pack provides at least a ready to serve soup of a temperature and viscosity appropriate for such a soup, and/or

5 (vi) the sealed concentrate has been retorted.

39. **A product** made by a process of claim 38.

40. A product of claim 39 wherein the dilution instructed is not outside the range of from 1.5:1 to 5:1.

41. A product of claim 39 wherein the dilution instructed corresponds to within the
10 range from about 1.9:1 to about 2.5:1.

42. **The use of a product** of any one of claims 1 to 37, 39, 40 or 41, such use involving dilution with boiling or near boiling water.