

COLOURED NOODLES

The present invention is concerned with coloured noodles and pastas.

5 Pastas and noodles, and especially fried/dried noodles are very appreciated by consumers. Trend is increasing for consumption of fried/dried noodles just as it is, as appetizer or as a ready to eat snack.

10 These type of noodles can be aromatized by incorporation of flavours into the dough, by dipping the noodles into a seasoning or by sprinkling flavour after the frying/drying step.

15 In the context of consumption of these products as snack or appetizer, it is important to develop and to provide to consumer pastas or noodles with attractive eye-appearance. Indeed coloured pastas products with coloured stripes or drawings would be an attractive feature of the product.

20 Nowadays, processes for preparing coloured noodles or pastas exist. They are principally based on the addition of dyes into the dough (CN 1220102, JP 10290675 and JP 10276694). Such processes are rather complicated and not well controlled. Further, they do not allow precise
25 drawings because of the colouring of the dough in the mass.

Recently snackable coloured noodles were launched by WAI WAI Company. In this case the coloration is achieved by spraying soya sauce before frying. However, the frying, or at least the heating, of soya sauce is not desirable
30 because of the mutagenic effects of the pyrolysis products of soya sauce. Indeed, pyrolysis of soya sauce induces the formation of heterocyclic amines.

Thus, there is a need for a process for producing coloured noodles/pastas using a simple and safe technology and which also allows to realize any kind of drawing on the
5 dough or on the pastas/noodles.

To this end, the invention is directed to a method for colouring pasta dough by contacting, at least one part of a pregelatinized pasta dough surface with an alkaline
10 compound capable to react with at least one colour-precursor compound present in the dough, at a temperature and during a time sufficient for developing the colour.

The invention is also directed to a process for
15 colouring pasta dough comprising the steps of :

- providing a pregelatinized pasta dough comprising at least one colour-presursor compound,
- contacting at least one part of the pasta dough surface with an alkaline compound and
- 20 - heating the pasta dough at a temperature and during a time sufficient to develop colour.

As "pasta" it should be understood a shaped dough prepared from at least semolina or flour and water. A
25 noodle is a pasta that is typically shaped in ribbon form, for example.

As "snackable" noodles, it should be understood fried or dried noodles that can be eaten as a snack or as an appetizer, for example. However, such dried or fried
30 noodles may also be rehydrated by hot water or steam.

Finally, the invention also concerns a coloured precooked pasta product in which at least one colour-precursor compound of the pasta dough has been reacted under high temperature with an added alkaline compound to develop colour. The colour-precursor compound of the pasta dough may be chosen in a group comprising : tocopherols, carotenoids, flavonoids and/or polyphenols, for example.

The pasta dough according to the invention may be entirely or partially coloured.

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Surprisingly, after the alkaline compound has been contacted with the pregelatinized dough surface and the piece of dough heated, colour appears on the zone where the alkaline compound has been applied.

The contact of the pregelatinized dough surface with an alkaline compound may be achieved by immersion or showering the dough with a solution containing the alkaline compound. This contact may be achieved by soaking, padding or spraying, for example. The alkaline compound may be in a solution whose pH ranges from 7.5 to 13. This alkaline compound may be sodium and/or potassium carbonate or sodium hydroxide, for example.

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The alkaline compound may also be in powder form and may be sprinkled on the wet surface of the pregelatinized dough after a steaming or boiling step, for example.

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The alkaline solution may also be applied on the dough surface by a pad or a pencil, for example. The alkline solution may comprise seasoning such as salt or monosodium glutamate, for example. The pregelatinized dough which is contacted with the alkaline compound may be steamed cooked or boiled, for example. It may have any shape, ribbon, sheet, spaghetti, tube, helix, nest of ribbon, for example.

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The pasta dough may be shaped in any form, thus it can be marked with the alkaline compound in order to develop after heating a logo, a trade mark or any simple drawing.

5 The alkaline compound may thus be applied on pasta sheets or on noodle nest before heating.

The alkaline compound once applied at the surface of the pregelatinized dough can slightly diffuse into the

10 dough and will react, under high temperature condition, with at least one colour-precursor compound present in the dough to develop colour. Such precursors may be flavonoids, carotenoids, polyphenols and/or tocopherols. These compounds are naturally present in cereals but do not

15 exhibit any colour because of their low concentration and/or their chemical or physical state. On the other hand, once they have been reacted with an alkaline compound and exposed to high temperature, a coloration appears on the pasta. Of course, the said colour-precursors can be present

20 in the raw material of the dough but they can also be added to it if this raw material is lacking in them, for example.

The reaction between precursors of the dough and alkaline compounds is achieved by high temperature. The

25 application of high temperature may be achieved by frying, hot-air, infra-red, for example, or by any means allowing a temperature sufficient to assure colour development. This temperature may be in the range of from 90 to 220 °C. The duration of the heating treatment is function of the

30 temperature and it may typically range from 30 sec to 7 minutes. It is clear that duration of the heating treatment is dependent of the temperature of this treatment, a

shorter time implying a higher temperature in order to develop colour and/or to adjust the intensity of this colour.

5 The pasta dough may be prepared by mixing and kneading at least flour or semolina with water, for example. The flour or the semolina that can be used may come from wheat, rice, maize, rye or oat, alone or mixed, for example. Of course, if the raw material used for making the dough is
10 lacking in colour-precursor compounds, the latter may be added into this dough in an amount sufficient to develop colour on heating ; for example in an amount corresponding to what is found in wheat.

15 The pasta dough may also comprise native or modified starch such as tapioca, potato, rice or maize starch for example. Spices, aromas, flavours and/or seasoning such as garlic, onion, monosodium glutamate, salt, basilic, for example may also be added into the dough either during
20 mixing and kneading or after laminating or shaping. All these dry ingredients can be mixed with a wet mix comprising at least water but it may also comprise salt, spices, seasoning, monosodium glutamate, sodium polyphosphate, sodium carbonate and potassium carbonate,
25 for example.

 This pasta dough may be made by any process known to the man skilled in the art, comprising the step of mixing dry and wet mixes, kneading the dough, laminating, slitting
30 or shaping the dough in the form of noodles, sheet, string, tube or spagetthi, for example.

Once the dough has been shaped in the desired shape, it can be steam cooked or boiled in order to gelatinize the starch of the dough.

5 The step of contacting the pregelatinized dough can be carried out after this cooking step by showering the shaped dough, noodles, nest of noodles, sheet, with an alkaline solution of sodium and potassium carbonate, for example. The showering step can be achieved by passing the shaped dough under a shower head allowing for the distribution of
10 four dashes of solution, for example. Thus, after the heating step, one will observe four coloured stripes on the shaped dough, for example.

The heating of the shaped dough once contacted with the alkaline compound may be achieved by frying in hot oil,
15 for example. Plant or animal oil can be used. The heating treatment may also be carried out by hot air drying. This heat treatment may be achieved at a temperature ranging from 90 to 220°C during 30 seconds to 7 minutes in a way to develop colour on the pasta dough zones that have been
20 contacted with the alkaline compound.

The heating treatment not only leads to the colouration of the pasta dough but also to a drying of it. Thus we can obtain coloured pasta or noodles exhibiting a moisture level ranging from about 2 to 10%. If the heating
25 treatment is achieved by frying, the coloured obtained noodles exhibit a fat content ranging from about 10 to 30%, for example.

We thus can obtain ready to eat snackable noodles with
30 good organoleptic properties and showing nice and attractive coloured stripes or drawings.

The example set out below allows a better understanding of the advantages of the invention.

EXAMPLE

5 Coloured snackable noodles

Dough formulation :

Dry mix :

Wheat flour 584 g

Tapioca starch 146 g

10 Garlic powder 2 g

Onion powder 2 g

Wet mix :

Water 248 g

Salt 3.7 g

15 Mono sodium glutamate 11 g

Sodium polyphosphosphate 0.9 g

Sodium carbonate 1 g

Potassium carbonate 0.6 g

20 Dry and wet mixes were mixed and kneaded during 20 minutes in a dough kneading machine. The dough was then laminated to 0.8 mm thickness by passing it through one or several pairs of rollers.

The sheeted dough was then slitted into stripes of 2-3 mm
25 wide and these strips were steamed at 100°C during 3 minutes in a steaming tunnel. Once cooked, the stripes were cut and folded in ripples or parallel sheets and then packed in the shape of nests or cakes of noodles.

30 The obtained cakes or nests of noodles were showered thanks to a shower head producing four dashes of the following alkaline solution :

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	Water	78 g
	Salt	15 g
	Monosodium glutamate	3.8 g
	Sodium carbonate	1.2 g
5	Potassium carbonate	0.6 g

Then, the nest of noodles were fried in hot palm oil during 98 secondes at 160°C.

10 We thus obtained ready to eat crispy snack noodles with four straight dark coloured lines, having a fat content of about 20 % and a moisture content of about 3 %.

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CLAIMS

1. Coloured precooked pasta product, in which at least one colour-precursor compound of the pasta dough has been reacted under high temperature with an added alkaline compound to develop colour.

2. Coloured pasta according to claim 1, characterized in that the colour-precursor compound of the pasta dough is chosen in a group comprising : tocopherols, carotenoids, flavonoids and/or polyphenols.

3. Coloured pasta according to claim 1, in which the pasta are shaped as a sheet, a ribbon, a helix, a tube, a nest of ribbon, a spaghetti.

4. Coloured pasta according to claim 1, which has been fried and has a fat content of from 10 to 30 % and a moisture content of from 2 to 10%.

5. Method for colouring pasta dough, which comprises contacting the pasta dough surface with an alkaline compound at a high temperature and during a time sufficient for developing the colour.

6. Method according to claim 5, in which the alkaline compound is an alkaline solution of sodium and/or potassium carbonate or sodium hydroxide.

7. Method according to claim 5, in which the alkaline compound is an alkaline solution which has a pH ranging from 7.5 to 13.

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8. Method according to claim 5, in which the temperature ranges from 90 to 220°C.

5 9. Method according to claim 5, in which the time ranges from 30 sec to 7 minutes.

10. Method according to claim 5, in which temperature is achieved by hot air or frying.

11. Process for colouring pasta dough comprising the steps of :

- providing a pregelatinized pasta dough comprising at least one colour-precursor compound,

15 - contacting at least one part of the pasta dough surface with an alkaline compound and

- heating the pasta dough at a temperature and during a time sufficient to develop colour.

20 12. Process according to claim 11, in which the provided pasta dough is steam cooked or boiled.

25 13. Process according to claim 11, in which the contacting of pasta dough with alkaline solution is achieved by immersing, soaking, showering, padding or spraying.

14. Process according to claim 11, in which the heating is achieved at a temperature ranging from 90 to 220°C and during a time fro 30 sec to 7 min.

30 15. Process according to claim 11, in which the heating treatment is achieved by frying or by hot-air drying.

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16. Process according to claim 11, in which the alkaline compound is an alkaline solution of sodium and/or potassium carbonate or sodium hydroxide.

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17. Process according to claim 11, in which the alkaline compound is an alkaline solution which has a pH ranging from 7.5 to 13.