

**Cooking aid of the coarse-grained type**

The subject of the present invention is a cooking aid
of the coarse-grained type, a process for its
5 preparation and a plant for carrying out the process.

US-A-4060645 (Risler et al.) describes a dehydrated
product in the form of grains instantly soluble in
water which have a continuous porous structure and a
10 smooth surface which can be obtained by extruding, in a
vessel where a subatmospheric pressure exists, a food
material comprising fruit, vegetable and seed extracts,
starches, gums or alginates, meat, fish or yeast
extracts, and/or protein hydrolysates, for example.

15 US-A-4946693 (Risler et al.) describes a food product
comprising a dehydrated mass in the form of powder or
of flakes of milk, fats, gelatinized starch, meat and
vegetable extracts or protein hydrolysates, for
20 example, and a filling of partially dehydrated
vegetable, meat or pasta dishes, for example, this
filling being packaged separately.

The aim of the present invention is to provide a
25 cooking aid in an attractive form having, in its mass,
visually identifiable pieces of vegetables, meat or
other filling, fat and/or a polysaccharide and
pulverulent flavouring ingredients, for example.

30 To this effect, the cooking aid of the coarse-grained
type according to the present invention is in the form
of a combination of agglomerates and comprises 8-50% by
weight of visual components, 15-35% of binding agent
and 20-70% of flavouring ingredients. Preferably, this
35 cooking aid is provided in dose portion packets.

Likewise, the process for the preparation of a cooking
aid of the coarse-grained type according to the present
invention comprises the successive and/or concomitant
40 steps of mixing the visual components with the binding

agent and the flavouring ingredients, of optionally breaking up the mixture obtained and of cooling or drying the optionally broken up mixture. Preferably, the steps of optionally breaking up and of cooling or drying are concomitant.

Finally, the plant for carrying out the process for the preparation of a cooking aid of the coarse-grained type according to the present invention comprises a device for mixing the visual components with the binding agent and the flavouring ingredients, a device for breaking up the mixture obtained, and a device for cooling or for drying.

The cooking aid of the coarse-grained type according to the present invention therefore effectively has within its mass, in an attractive form of a combination of agglomerates, visually identifiable pieces of vegetables, meat or other filling, apart from a binding agent such as a fat and/or a polysaccharide for example, and pulverulent flavouring ingredients.

The process and plant according to the present invention make it possible to prepare this cooking aid of the coarse-grained type in a simple manner and in a limited number of steps.

In the present disclosure, the expression "in the form of a combination of agglomerates" should be understood as being in the form of a combination of small agglomerates of variable size, in particular of 0.5-5 mm, of various colours, composed of visual components, binding agents and flavouring ingredients.

The expression "visual components" should be understood as components whose size is sufficiently large and whose colour exhibits sufficient contrast relative to that of the combination to be distinguished with the naked eye.

The expression "binding agent" should be understood as an agent ensuring the cohesion of the different components within the agglomerates themselves.

- 5 In the cooking aid of the coarse-grained type according to the present invention, the visual components may be dehydrated pieces of any food product which can be taken into consideration as a filling.
- 10 These visual components may be in particular pieces of one or more vegetables, fruits, aromatic herbs, meats, fish and/or crustacea, spices and/or whole or crushed seeds, for example.
- 15 The binding agent may be chosen from fat and/or polysaccharides, for example.

If the binding agent is a fat, the latter may comprise at least one vegetable fat and/or one animal fat,
20 preferably hydrogenated, supplemented or otherwise with an antioxidant, chosen so as not to confer a fatty character to the touch at room temperature, but easily melting at a temperature greater than 100°C, for example.

25 If the binding agent is a polysaccharide, it may be chosen from starches, maltodextrins, gums or alginates, for example.

30 The flavouring ingredients may comprise food materials in finely subdivided form chosen according to their capacity to confer adequate flavour on the cooking aid of the coarse-grained type, for example. Preferably, these food materials are not or are only slightly fatty
35 and they may have a fat content of less than about 20%, generally even less than or equal to a few %, for example.

These flavouring ingredients may comprise in particular flavouring agents such as sugars, salts, spices, fruit, vegetable or meat extracts, protein hydrolysates, yeast autolysates, products of the Maillard reaction or
5 flavour molecules, taste-enhancing agents such as 5'-nucleotides and/or glutamate, for example.

The process for the preparation of a cooking aid of the coarse-grained type according to the present invention
10 therefore comprises the successive and/or concomitant steps of mixing the visual components with the binding agent and the flavouring ingredients, of optionally breaking up the mixture obtained and of cooling or drying the optionally broken up mixture.

15 If the binding agent is a fat (hydrophobic binding agent) and the mixing step makes it possible to directly obtain, without breaking up, the desired combination of agglomerates, a simplified process as
20 illustrated, by way of example, in Figure 1 of the accompanying drawing, may be carried out.

In this simplified process, the visual components (1), the molten binding agent (2) and the flavouring
25 ingredients (3) may be mixed in a mixing device (4) such as a band mixer, and the cooling can be performed while continuing the mixing, in particular by injection of liquid nitrogen (5), for example.

30 The combination of agglomerates thus obtained may be packed into dose portion packets with the aid of a vertical packet-filling machine (8), after an optional waiting period in a thermostated storage hopper (7), with stirring, in which the mixer may be unloaded by
35 tilting over (6), for example.

If the nature of the components to be mixed is such that the mixing step does not make it possible to obtain the desired combination of agglomerates, a

breaking up step is therefore provided following the mixing.

To carry out a nonsimplified process, as has been provided for by way of example in Figure 2 of the accompanying drawing, it is possible to mix the visual components (1), the binding agent (2) and the flavouring ingredients (3) in a mixing device (4) such as a band mixer, for example.

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The mixture can then be broken up, in particular after having unloaded the band mixer by tilting it over (6), with the aid of a breaking up device comprising a rotating harrow, for example.

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The mixture can then be transported, with the aid of a conveyor belt or band (10), through a cooling device (11) such as a tunnel featuring air or nitrogen cooling if the binding agent is a fat (hydrophobic binding agent), or through a drying device (12) such as a tunnel featuring air or ultraviolet radiation drying if the binding agent is a polysaccharide (hydrophilic binding agent), for example.

25 Provision can advantageously be made to carry out the breaking up at the outlet of these tunnels, with the aid of a rotating harrow for example.

The combination of agglomerates thus obtained may be packed into dose portion packets with the aid of a vertical packet-filling machine (8), after an optional waiting period in a thermostated storage hopper (7), with stirring, in which the combination of agglomerates may have been transported with the aid of a conveyor belt or band (13), for example.

In this nonsimplified process, if the binding agent is a fat, the mixing step is preferably carried out in two

phases in a jacketed band mixer, in particular according to the following procedure:

- 5 - preparation of a cement by introducing into the liquid fat, heated in particular to a temperature of 60-75°C, all or part of the flavouring ingredients so as to obtain a cement having an appropriate viscosity (there will need to be incorporated all the pulverulent materials and
10 part of the crystalline materials, the latter being necessary for good dispersion of the former in the fat),
- 15 - introduction of the visual components and of the remainder of the crystalline materials into this cement, over a sufficient period to obtain a
20 homogeneous mixture, in particular by mixing for 20 min, the percentage of fat and the final temperature of the mixture being adjusted so as to obtain a sandy texture and flow properties which are compatible with the next steps of the manufacturing process, the temperature of the jacket being adjusted accordingly.

25 The mass may be broken up at the outlet of the mixer with the aid of a breaking up device comprising a jacketed tank of parallelepipedal shape, having a sliding bottom and open on one of the sides. The sliding bottom may consist of a band resting on a jacketed sole. A harrow can be used to break up the
30 mixture deposited in the tank and gradually moved by the band.

35 The mixture thus broken up can be homogeneously distributed on a conveyor band which brings the product as far as the cooling tunnel. In this tunnel, the fat is then solid, thus fixing the structure of the agglomerates. Air which has been dehumidified and cooled to a temperature of about 5°C can be used to this effect, for example.

On the other hand, in the simplified process, if the binding agent is a polysaccharide, the mixing step is preferably carried out in two or three phases, in particular according to the following procedure:

- dispersion of the binding agent(s) in water by means of an appropriate turbine mixer,
- introduction of the other pulverulent ingredients and of all or part of the crystalline materials so as to obtain, as above, a fairly fluid cement, the mixing being carried out in a band mixer,
- introduction of the visual components and of the remainder of the crystalline materials into this cement, over a sufficient period to obtain a homogeneous mixture, in particular by mixing for about 20 min, the percentage of binding agents being adjusted so as to obtain a sandy texture and flow properties which are compatible with the next steps of the manufacturing process, the temperature not being a critical parameter here.

The first two phases can be grouped together if the dispersion of the binding agents is not problematic.

The mixture can be broken up in a device similar to that described above, but in this case, it is a priori no longer necessary to have a jacketed tank.

The broken up mixture is then transferred to a belt hot-air drier or a rotating drum. The air temperature may be varied according to the water activity of the product, in particular between 50°C and 100°C.

Claims

1. Cooking aid of the coarse-grained type which is in the form of a combination of agglomerates and comprises 8-50% by weight of visual components, 15-35% of binding agent and 20-70% of flavouring ingredients.
2. Cooking aid according to Claim 1, provided in dose portion packets.
3. Process for the preparation of a cooking aid of the coarse-grained type according to Claim 1, comprising the successive and/or concomitant steps of mixing the visual components with the binding agent and the flavouring ingredients, of optionally breaking up the mixture obtained and of cooling or drying the optionally broken up mixture.
4. Process according to Claim 3, in which the steps of optionally breaking up and of cooling or drying are concomitant.
5. Plant for carrying out the process for the preparation of a cooking aid of the coarse-grained type according to Claim 4, comprising a device for mixing the visual components with the binding agent and the flavouring ingredients, a device for breaking up the mixture obtained, and a device for cooling or for drying.

