

Claims

1. Use of a composition comprising biomass of a thermophilic fungus as a source of at least one of a) protein and/or an amino acid; b) a lipid; c) dietary fiber; d) choline and/or a vitamin; and e) a mineral, in at least one of a food product, a beverage, a pet food product and a feed product.
2. The use according to claim 1, wherein the composition comprising biomass of a thermophilic fungus is a cake obtainable in a process comprising the steps of a) growing a strain of a thermophilic fungus in submerged culture in a medium, b) recovery of the fungal biomass from the medium by at least one of sieving, filtration and decantation to produce a biomass cake, whereby preferably the dry matter concentration of the sieved, filtered or decanted biomass cake is at least 12% (w/v), and c) optionally, further drying the biomass cakes by pressing residual water out to obtain a biomass cake with a dry matter concentration of at least 20%.
3. The use according to claim 1, wherein the composition comprising biomass of a thermophilic fungus is a dried powder obtainable by milling and further drying the biomass cake obtained in claim 2 to a biomass powder by warm air, by freeze drying, preferably under vacuum, or by flash drying, preferably to a water content of no more than 7 % (w/w).
4. The use according to any one of the preceding claims, wherein the fungal strain is a strain of a fungal genus selected from the group consisting of *Rasamsonia*, *Talaromyces*, *Penicillium*, *Acremonium*, *Humicola*, *Paecilomyces*, *Chaetomium*, *Rhizomucor*, *Rhizopus*, *Thermomyces*, *Myceliophthora*, *Thermoascus*, *Thielavia*, *Mucor*, *Stibella*, *Melanocarpus*, *Malbranchea*, *Dactylomyces*, *Canariomyces*, *Scytalidium*, *Myriococcum*, *Corynascus*, and *Coonemeria*, more preferably the genus is *Rhizomucor*, more preferably the strain is a *Rhizomucor pusillus*, most preferably the strain is *Rhizomucor pusillus* CBS 143028, or a strain that is a single colony isolate or a derivative thereof.
5. A use according to any one of the preceding claims, wherein at least one of protein and the amino acid comprise an amino acid selected from the group consisting of aspartic acid, asparagine, threonine, serine, glutamic acid, glutamine, proline, glycine, alanine, citrulline, valine, isoleucine, leucine, tyrosine, phenylalanine, lysine, histidine, arginine, cysteine, methionine and tryptophan, wherein preferably the amino acid is an essential amino acid, more preferably an essential amino acid selected from the group consisting of threonine, valine, isoleucine, leucine, phenylalanine, lysine, histidine, methionine and tryptophan, most preferably, in a vegetarian and vegan food product.

6. A use according to claim 5, wherein:
- a) the biomass of the thermophilic fungus biomass is used as a (dietary) source of at least one of protein, amino acids and essential amino acids in a vegetarian or a vegan food product;
 - b) the biomass of a thermophilic fungus is used as a (dietary) source citrulline in food, a food supplement or a beverage for sporting people; or
 - c) the biomass of a thermophilic fungus is used as a source of protein, amino acids and essential amino acids in a pet food, preferably as alternative to standard animal or plant-based sources of protein, amino acids in pet food more preferably as sole source of protein and/or amino acids.
7. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as a source of dietary fiber to enrich the fiber content of a food product selected from: i) a meat replacer; ii) a hybrid food product containing meat and non-meat ingredients; iii) a carbohydrate-rich food product; iv) a bakery product made with refined flours; and v) a pet food, wherein preferably the dietary fiber comprises chitosan.
8. A use according to claim 7, wherein the biomass of the thermophilic fungus is used as a source of dietary fiber in a human or pet food product to provide satiety, preferably to a human or pet in need of weight management or weight loss, wherein preferably the dietary fiber comprises chitosan.
9. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as a source of choline in a vegan or vegetarian food product, or in a pet food, preferably a cat or dog food.
10. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as a source of at least one of retinol, vitamin E, riboflavin, pyridoxine and folate, wherein preferably the biomass is used as a source of retinol in cat food.
11. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as a source of iron, preferably, the biomass of the thermophilic fungus is used to replace soya as source of iron, more preferably, the biomass of the thermophilic fungus is used to replace soya as source of iron in a meat replacer.
12. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as a source of at least one of mono-unsaturated fatty acids and poly-unsaturated fatty acids, preferably, the biomass thermophilic fungus is used as a source of at least one of oleic acid and linoleic acid.
13. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used for incorporating into a food product, a beverage, a pet food product and a feed

product at a maximum level of 70% (w/w) and at a minimum level of at least 1% (w/w), in either cake or powder form.

14. A use according to any one of the preceding claims, wherein the biomass of the thermophilic fungus is used as an ingredient for:

- a) a meat replacer, wherein the meat replacer comprises no more than 42% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 14% (w/w) of the biomass of the thermophilic fungus in powder form;
- b) a hybrid meat product, wherein the hybrid meat product comprises no more than 52% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 17.3% (w/w) of the biomass of the thermophilic fungus in powder form;
- c) a cereal-based food product, wherein the cereal-based food product comprises no more than 30% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 10% (w/w) of the biomass of the thermophilic fungus in powder form;
- d) a ready to eat meal food product, wherein the ready to eat meal food product comprises no more than 16% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 5.3% (w/w) of the biomass of the thermophilic fungus in powder form;
- e) a ready to eat soup, wherein the ready to eat soup comprises no more than 27% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 9% (w/w) of the biomass of the thermophilic fungus in powder form; and,
- f) a food product for sporting people, the food product for sporting people comprises no more than 70% (w/w) of the biomass of the thermophilic fungus in cake or in powder form.

15. A food product comprising a composition comprising biomass of a thermophilic fungus as defined in any one of claims 1 – 4, wherein the food product is:

- a) a meat replacer, wherein the meat replacer comprises no more than 42% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 14% (w/w) of the biomass of the thermophilic fungus in powder form;
- b) a hybrid meat product, wherein the hybrid meat product comprises no more than 52% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 17.3% (w/w) of the biomass of the thermophilic fungus in powder form;
- c) a cereal-based food product, wherein the cereal-based food product comprises no more than 30% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 10% (w/w) of the biomass of the thermophilic fungus in powder form;
- d) a ready to eat meal food product, wherein the ready to eat meal food product comprises no more than 16% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 5.3% (w/w) of the biomass of the thermophilic fungus in powder form;
- e) a ready to eat soup, wherein the ready to eat soup comprises no more than 27% (w/w) of the biomass of the thermophilic fungus in cake form, or no more than 9% (w/w) of the biomass of the thermophilic fungus in powder form; and,

f) a food product for sporting people, the food product for sporting people comprises no more than 70% (w/w) of the biomass of the thermophilic fungus in cake or in powder form.