Claims

1. Emulsion for the production of food or beverages, comprising

   a) Oat oil, comprising 8 wt.-% or more of ceramides and glycolipids,

   b) at least one polyol and/or a native or modified carbohydrate; and

   c) at least one benefit agent,

   wherein the emulsion further comprises 80% or less of water, and
   wherein the dispersed droplets have a mean droplet diameter (such as z-average or volume average mean D(4,3)) of from 50 nm to 199 nm.

2. Emulsion according to claim 1, further comprising at least one saponin selected from the group consisting of quillaja saponins, tea saponins, licorice saponins, beet root saponins, fenugreek saponin, alfalfa saponin, fennel saponin, garlic saponin, asparagus saponin, quinoa saponin, sugar beet saponins, ginseng saponins, glycyrrhizin, oat bran saponins, and yucca saponins or mixtures thereof.

3. Emulsion according to claim 1 or 2, wherein the emulsion is selected from the group consisting of a water-in-oil emulsion and an oil-in-water emulsion.

4. Emulsion according to any of the preceding claims, further comprising 70% or less, 20 wt.-% or less, more particularly 10 wt.-% or less of water, more particularly drinkable water.

5. A concentrate comprising

   a) Oat oil, comprising 8 wt.-% or more of ceramides and glycolipids

   b) At least one polyol and/or a native or modified carbohydrate; and

   c) At least one benefit agent, and

   wherein the level of water is kept at a low value, more preferably the level of water is 20 wt% or less, or more preferably the level of water is 10 wt% or less based on the total weight of the concentrate.

6. A concentrate according to claim 5, wherein:

(i) the concentration of oat oil in the concentrate is from 0.5 to 25 wt.-%, more particularly from 1 to 15 wt.-%, still more particularly from 1.5 to 10 wt.-%;

(ii) the concentration of polyol, or native or modified carbohydrate in the concentrate is from 5 wt.-% to 85 wt.-%, more particularly from 25 to 80 wt.-%, still more particularly from 50 to 75 wt.-%; and

(iii) the concentration of the at least one benefit agent in the concentrate is from 0.01 wt.-% to 40 wt.-%, more particularly from 0.5 to 20 wt.-%, based on the total weight of the concentrate.

7. The concentrate according to claim 5 or 6, further comprising at least one saponin selected from the group consisting of quillaja saponins, tea saponins, licorice saponins, beet root saponins, fenugreek saponin, alfalfa saponin, fennel saponin, garlic saponin, asparagus saponin, quinoa saponin, sugar beet saponins, ginseng saponins, glycyrrhizin, oat bran saponins, and yucca saponins or mixtures thereof.

8. The emulsion or concentrate according to any of the preceding claims, wherein the saponin concertation is from 0.05 wt.-% to 20 wt.-%, or from 0.2 wt.-% to 7 wt.-%, such as from 1 to 4 wt.-%.

9. The emulsion or the concentrate according to any of the preceding claims, wherein at least 10%, or at least 11%, or at least 12%, or at least 13%, or at least 14%, or at least 15%, or at least 16%, or at least 17%, or at least 18%, or at least 19%, or at least 20%, or at least 22%, or at least 23%, or at least 24%, or at least 25%, or at least 26%, or at least 27%, or at least 28%, or at least 29%, or at least 30%, or at least 31%, or at least 33%, or at least 35%, or at least 40 % by weight of the oat oil are polar lipids.

10. The emulsion or the concentrate according to any of the preceding claims, wherein the oat oil comprises 12 wt.-% or more, more particularly 20 wt.-% or more, still more particularly 25 wt.-% or more ceramides and glycolipids, and wherein the oat oil is a crude oat oil, a refined oat oil, or oat oil fraction.

11. The emulsion or the concentrate according to any of preceding claims, wherein the at least one benefit agent is at least one flavor ingredient selected from the group

consisting of 1,1-diethoxyethane; 3-hydroxybutan-2-one; 1-phenylethanone; (Z)-oxacycloheptadec-10-en-2-one; benzaldehyde; Bergamot oil; 2-methylpropyl acetate; 2-methylpropyl 2-methylbutanoate; butanal; butyric acid; 2-methylpropanoic acid; 2-methyl-5-prop-1-en-2-ylcyclohex-2-en-1-ol; (2E)-3-phenylprop-2-enal; cinnamon oil leaf; (E)-3,7-dimethylocta-2,6-dienal; 3,7-dimethyloct-6-enal; 3,7-dimethyloct-6-en-1-ol; (E)-1-(2,6,6-trimethylcyclohexa-1,3-dien-1-yl)but-2-en-1-one; 6-pentyltetrahydro-2H-pyran-2-one; 5-hexyloxolan-2-one; decanal; chroman-2-one; methyl 2-(methylamino)benzoate; dimethyl sulfide; oxydibenzene; 1-methyl-4-prop-1-en-2-ylcyclohexene; 5-octyloxolan-2-one; ethyl acetate; ethyl butanoate; ethyl 2-methylpropionate; ethyl 3-phenylprop-2-enoate; ethyl decanoate; 6-ethyl-1,5,5-trimethylbicyclo[2.2.1]heptan-6-ol; ethyl formate; ethyl heptanoate; ethyl hexanoate; ethyl 3-hydroxybutanoate; ethyl 3-hydroxyhexanoate; ethyl 2-methylbutanoate; ethyl octanoate; ethyl 3-methylbutanoate; ethyl propionate; 4-ethylphenol ; pent-1-en-3-one; 2-methyl-5-propan-2-ylcyclohexa-1,3-diene; 7,11-dimethyl-3-methylidenedodeca-1,6,10-triene; 2-ethyl-4-hydroxy-5-methylfuran-3-one; (E)-3,7-dimethylocta-2,6-dien-1-ol; (E)-3,7-dimethylocta-2,6-dien-1-yl acetate; grapefruit oil; hexanal; hexaoic acid; E-hex-2-enal; (Z)-hex-3-en-1-ol; (Z)-hex-3-en-1-yl acetate; (E)-4-(2,6,6-trimethyl-1-cyclohex-2-enyl)but-3-en-2-one; (E)-4-(2,6,6-trimethylcyclohex-1-en-1-yl)but-3-en-2-one; lemon oil; lemon oil terpeneless; lime oil; lime oil terpeneless; 3,7-dimethylocta-1,6-dien-3-ol; 3,7-dimethylocta-1,6-dien-3-yl acetate; 3-hydroxy-2-methyl-4H-pyran-4-one; madarin oil; 4-methyl-4-sulfanylpentan-2-one; 2-(4-methylcyclohex-3-en-1-yl)propane-2-thiol; mercapto-para-menthan-3-one; methyl acetate; methyl 2-aminobenzoate; 2-methyl-butanoic acid; methyl 3-phenylprop-2-enoate; methyl 3-oxo-2-pentylcyclopentaneacetate; 5-methylfuran-2-carbaldehyde; 7-methyl-3-methyleneocta-1,6-diene; (Z)-3,7-dimethylocta-2,6-dien-1-yl acetate; 5-pentyloxolan-2-one; nonanal; 4,4a-dimethyl-6-(prop-1-en-2-yl)-4,4a,5,6,7,8-hexahydronaphthalen-2(3H)-one; 5-butyloxolan-2-one; octanal; octanoic acid; orange cold pressed oil; orange essence oil; orange oil terpenes; orris concrete; osmanthus absolute; 2,3-pentanedione; 3-methylbutyl acetate; 3-methylbutyl 3-methylbutanoate; propyl acetate; rose oil; (2E,6E,9E)-2,6,10-trimethyldodeca-2,6,9,11-tetraenal, ; (2E,6E)-2,6-dimethyl-10-methylidenedodeca-2,6,11-trienal; tangerine cold pressed oil; tarragon oil; 4-methyl-1-propan-2-ylcyclohex-3-en-1-ol;

1-methyl-4-propan-2-ylcyclohexa-1,3-diene; 2-(4-methyl-1-cyclohex-3-enyl)propan-2-ol; 1-methyl-4-(propan-2-ylidene)cyclohex-1-ene; 2-(4-methylcyclohex-3-en-1-yl)propan-2-yl acetate; 4a,5-dimethyl-3-prop-1-en-2-yl-2,3,4,5,6,7-hexahydro-1H-naphthalene; 4-hydroxy-3-methoxybenzaldehyde; and mixture thereof.

12. The emulsion or the concentrate according to any of preceding claims, wherein the at least one benefit agent is a vitamin, a colorant, a carotenoid, and/or an antioxidant selected from the group consisting of retinol, retinyl acetate or retinyl palmitate, tocotrienols and tocopherol, vitamin D2 (ergocalciferol) and D3 (cholecalciferol), vitamin K, astaxanthin, lutein (such as from Tagetes erecta flowers), lutein esters, fucoxanthin, curcuminoids, such as curcumin, demethoxycurcumin (DMC), and bisdemethoxycurcumin (BDMC), capsaicins, such as capsaicin, dihydrocapsaicin, and norddihydrocapsaicin, carotene, Algae carotene (like from Dunaliella salina ), fungal carotene (like from Blakeslea trispora ), beta-carotene, lycopene, paprika extracts (such as from Capsicum annuum Linne fruits), norbixin (such as from Bixa Orellana), bixin (such as from Bixa Orellana), Annatto, zeaxanthin, phytosterols, vinpocetine, resveratrol, epigallocatechin-gallate (EGCE), anthocyanins, polyphenol, isoflavone, phytoestrogene, cannabinoides, betanins, carmins, quercetin, phytosterols, resveratrol ubiquinol and ubiquinone, silymarin (such as from Milk Thistle), gingerols/shagoals, alkamides (such as from Echinacea), omega-3s (DHA (docosahexaenoic acid), annatto and EPA (eicosapentaenoic acid)) or mixtures thereof.

13. Concentrate according to any of claims 5 to 12 which is in the form an emulsion comprising droplets of a dispersed phase and a continuous phase, and wherein the dispersed phase essentially comprises the oil-soluble components of the emulsion and the continuous phase essentially comprises the oil-insoluble components of the emulsion.

14. A method to obtain the concentrate according to claim 5 to 12, by performing the steps of:

a) Mixing the oat oil, the at least one benefit agent and optionally the vegetable oil product, in order to form an oil phase;

b) Adding this mix to the at least one polyol and/or a native or modified carbohydrate, in order to form a polar phase;

c) Optionally adding at least one saponin(s) and/or water;

d) Mixing all ingredients to obtain a concentrate.

15. The method according to claim 14, additionally comprising the step of applying high or low energy emulsification to the concentrate in order to form an emulsified concentrate.

16. Combination comprising at least one oat oil and at least one saponin for stabilize emulsions,

wherein the at least one saponin is selected from the group consisting of quillaja saponins, tea saponins, licorice saponins, beet root saponins, fenugreek saponin, alfalfa saponin, fennel saponin, garlic saponin, asparagus saponin, quinoa saponin, sugar beet saponins, ginseng saponins, glycyrrhizin, oat bran saponins, and yucca saponins or mixtures thereof.

17. Use of a combination comprising at least one oat oil and at least one saponin as an emulsifying agent,

wherein the at least one saponin is selected from the group consisting of quillaja saponins, tea saponins, licorice saponins, beet root saponins, fenugreek saponin, alfalfa saponin, fennel saponin, garlic saponin, asparagus saponin, quinoa saponin, sugar beet saponins, ginseng saponins, glycyrrhizin, oat bran saponins, and yucca saponins or mixtures thereof.

18. Food or beverage product for humans or animals, a nutritional supplement, a nutraceutical formulation, a fragrance or flavouring, a pharmaceutical or veterinary formulation or an oenological or cosmetic formulation comprising an emulsion or concentrate according to any of claims 1 to 12 or an emulsified concentrate according to claim 13,

wherein the food or beverage product is selected from beverages such as carbonated and non-carbonated beverages, vegetable milks, ice creams, creamers, margarines, and emulsified sauces.

19. A food or beverage, a nutritional supplement, a nutraceutical formulation, a fragrance or flavouring, a pharmaceutical or veterinary formulation or an oenological or cosmetic formulation according to claim 18, wherein the product comprises an emulsion, concentrate or emulsified concentrate at a concentration such that the product comprises from 0.001% to 0.04 wt.-% of the at least one benefit agent, based on the total weight of the beverage.

20. A product (such as a food or beverage) according to claim 18 or 19 having a turbidity of less 35 NTU, more particularly less than 30 NTU, still more particularly less than 20 NTU, still more particularly less than 10 NTU, or a haze value of less than 25%, or of less than 20%, more particularly less than 15%, still more particularly less than 10%.

21. A product (such as a food or beverage) according to claim 18 or 19 having a turbidity of from 300 to 500 NTU.

22. The use of an emulsion, concentrate, concentrate emulsion or combination according to any of claims 1 to 13 and 16 to obtain a food or beverage product, a nutritional supplement, a nutraceutical formulation, a fragrance or flavouring, a pharmaceutical or veterinary formulation or an oenological or cosmetic formulation having a turbidity of less than 35 NTU, more particularly less than 30 NTU, still more particularly less than 20 NTU, still more particularly less than 10 NTU, or a haze value of less than 25%, or of less than 20%, more particularly less than 15%, still more particularly less than 10%; or is a cloudy food and beverage products having a turbidity from 300 to 500 NTU.

23. A beverage comprising from 0.01 to 10 wt-%, more particularly from 0.05 to 5 wt.-%, still more particularly from 0.08 to 1.2 wt.-% of a concentrate comprising:

a) From 0.5 to 25 wt.-%, more particularly from 1 to 15 wt.-%, still more particularly from 1.5 to 10 wt.-% of oat oil comprising at least 12 wt.-%, more

particularly at least 20 wt.-%, still more particularly at least 25 wt.-% of ceramides and glycolipids;

b) From 5 wt.-% to 85 wt.-%, more particularly from 25 to 80 wt.-%, still more particularly from 50 to 75 wt.-% of at least one polyol, or native or modified carbohydrate;

c) From 0.1 wt.-% to 40 wt.-%, more particularly from 0.5 to 20 wt.-% of at least one benefit agent, based on the total weight of the concentrate;

d) From 0 to 7 wt.-%, more particularly from 0 to 4 wt.-% of at least one saponin;

e) From 0 to 40 wt.-%, more particularly from 0 to 20 wt.-%, still more particularly from 1.5 to 10 wt.-% of a vegetable oil product; and

f) 20 wt.-% or less, more particularly 10 wt.-% or less of water.

24. The use of an emulsion, concentrate, concentrate emulsion or combination according to any of claims 1 to 13 and 16 to increase the bioaccessibility, bioavailability, bioefficacy and/or bioactivity of an active or benefit agent.

25. The use of an emulsion, concentrate, concentrate emulsion or combination according to any of claims 1 to 13 and 16 to prevent the oxidation of an active or benefit agent.