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(54) Title: PROVIDING AN OIL COMPOSITION THROUGH FERMENTATION OF BIOMASS WITH A YEAST

(57) Abstract: The invention provides a method for producing an oil composition (100) from biomass (200), wherein the method comprises: a preparation stage (11) comprising providing a growth medium (300), wherein the growth medium (300) comprises the biomass (200), wherein the growth medium (300) comprises 1 – 10 wt% dry matter, 0.02 – 30 wt% of a carbon source, 0.01 – 5 wt % of a nitrogen source, 0.00001 – 0.05 wt. % of a magnesium source, and wherein the growth medium (300) has a pH selected from the range of 3.0 – 8.0, wherein the biomass (200) comprises a non-pasteurized biomass (220); a fermentation stage (12) comprising (a) inoculating the growth medium (300) with a yeast cell (400), thereby providing an cell suspension (500), and (b) controlling a temperature of the cell suspension (500) in the range of 10–40 °C, wherein the yeast cell (400) is selected from the species *Yarrowia lipolytica*, and *Cutaneotrichosporon oleaginous*, and wherein the fermentation stage is continued until the cell suspension (500) reaches a cell density selected from the range of 1E8 – 1E10 cells/ml, wherein the pH of the cell suspension (500) is not controlled during the fermentation stage (12); an oil procurement stage (15) comprising separating a yeast oil (110) from the cell suspension (500) to provide the oil composition (100), wherein the oil procurement stage comprises mechanically lysing the cell suspension (500) to provide a lysed cell suspension (600), wherein the mechanical lysing (610) comprises one or more of screw-pressing (630), bead beating, French pressing and homogenizing.

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