CLAIMS

1. A method for optimizing a blending formulation of an edible oil sample, the method comprising:

receiving a dataset of values representing at least one type of index obtained from a plurality of pure oils and/or oil blends; and

generating a prediction of the optimized blending formulation from the received dataset of values,

wherein the step of generating the prediction of the optimized blending formulation comprises using a predictive model configured to generate a plurality of blending formulations based on the received dataset of values, evaluate at least one index value of each of the plurality of blending formulations and compare the evaluated at least one index value with at least one predefined threshold value to determine the optimized blending formulation from the generated plurality of blending formulations, the at least one predefined threshold value and the at least one index value being of the same type of index, and the at least one predefined threshold value being industrially approved;

wherein the predictive model is a genetic model constructed from at least one vector of features; and wherein each feature corresponds to an initial index value obtained from a specific pure oil or oil blend of the plurality of pure oils and/or oil blends, or an index value of the at least one index value.

2. The method of claim 1, wherein the initial index value comprises at least one of a frying life of the specific pure oil or oil blend, a fatty acid content of the specific pure oil or oil blend, a price of the specific pure oil or oil blend, and a total polar compound value generated by the specific pure oil or oil blend during cooking.

3. The method of claim 1 or 2, wherein the genetic model comprises an input portion configured to receive the dataset of values, a genetic algorithm configured to determine a fittest blending formulation based on an objective function, and an output portion comprising multiple outputs configured to present the fittest blending formulation as the optimized blending formulation.

4. The method of claim 3, wherein the genetic algorithm is further configured to evaluate a parameter of the optimized blending formulation, the evaluated parameter being representative of a predicted post-blend behavior over a specific time frame, and the multiple outputs are further configured to substantially simultaneously present the parameter at the output portion.

5. The method of any one of claims 1 to 3, further comprising generating a prediction of a parameter of the optimized blending formulation of the edible oil sample, the predicted parameter being representative of a predicted post-blend behavior over a specific time frame.

6. The method of any one of claims 1 to 5, wherein the type of index comprises an oxidation index, a nutritional index or a market index.

7. The method of claim 6, wherein the oxidation index comprises a total polar compound value, or a frying life, or an anisidine value, or a carbonyl value, or a thiobarbituric acid level, or a conjugated dienes acid value, or a conjugated trienes acid value, or a combinational value of conjugated dienes acid and conjugated trienes acid, or a polyunsaturated fatty acids content decrease, a polymer by-product value.

8. The method of claim 6, wherein the nutritional index comprises a fatty acid content, or a structured lipid level.

9. The method of claim 6, wherein the market index comprises a price.

10. The method of any one of claims 1 to 9, wherein the optimized blending formulation satisfies at least one of the following requirements:-

(i) lowest price;

(ii) constraint imposed by the at least one predefined threshold value; and

(iii) longest frying life.

11. The method of any one of claims 1 to 10, further comprising generating the dataset of values, wherein the step of generating the dataset of values comprises:

performing a linear combination of first index values obtained from a plurality of pure oils and/or oil blends to form a landscape comprising second index values of the plurality of pure oils and/or oil blends, wherein the first index values and the second index values are of the at least one type of index;

applying a sampling algorithm to the landscape to sample from the second index values; and

forming at least part of the dataset of values based on the sampled second index values.

12. The method of claim 11, wherein the sampling algorithm is based on a Dirichlet distribution.

13. The method of any one of claims 1 to 12, wherein the step(s) of generating the prediction(s) are in real-time.

14. The method of any one of claims 1 to 13, wherein the step of receiving the dataset of values representing at least one type of index obtained from the plurality of pure oils and/or oil blends comprises receiving the dataset of values representing more than one type of index obtained from the plurality of pure oils and/or oil blends, wherein the more than one type of index comprises an oxidation value and a nutritional index, or an oxidation value and a nutritional index and a market index.

15. An edible oil sample predicted using a method of any one of claims 1 to 14.

16. The edible oil sample of claim 15, comprising a blended oil or a blended frying oil or a blended flavoured oil.

17. A computer readable storage medium comprising computer readable instructions operable when executed by a computer to optimize a blending formulation of an edible

oil sample, the computer readable instructions configured to perform a method of any one of claims 1 to 14.

18. An apparatus or system comprising:

a receiving unit configured to receive a dataset of values representing at least one type of index obtained from a plurality of pure oils and/or oil blends;

a memory for storing a prediction model, wherein the predictive model is configured to generate a plurality of blending formulations based on the received dataset of values, evaluate at least one index value of each of the plurality of blending formulations and compare the evaluated at least one index value with at least one predefined threshold value to determine the optimized blending formulation from the generated plurality of blending formulations, the at least one predefined threshold value and the at least one index value being of the same type of index, and the at least one predefined threshold value being industrially approved; and

a processor configured to access the prediction model stored in the memory to perform steps of a method of any one of claims 1 to 14 for generating a prediction of an optimized blending formulation of an edible oil sample.

19. The apparatus or system of claim 18, further comprising a pre-processor unit configured to perform a linear combination of first index values obtained from a plurality of pure oils and/or oil blends to form a landscape comprising second index values of the plurality of pure oils and/or oil blends, wherein the first index values and the second index values are of the at least one type of index, and to apply a sampling algorithm to the landscape to sample from the second index values to form at least part of the dataset of values based on the sampled second index values.