

loidal and bulk physicochemical properties of emulsions. The encasement reduces the reactivity of the core with regard to outside environment, for example oxygen and water. This permits the extension of shelf life of a product in conventional packaging applications. In some embodiments, encapsulation can be used for controlled release of the inner material or core. The encased pulverized product can remain inactive until direct contact with water. Then the water can dissolve the encasement and the pulverized product is able to react with water, releasing aromas and flavors.

In some embodiments, the encapsulation of pulverized coffee can be used to optimize product functionality, particle size and/or create a new product form. Encapsulation can be done with products including, coffee extracts, coffee concentrates, dry pulverized coffee, coffee oils or other oils, aromas, functional ingredients, etc. In addition, pulverized products can be encapsulated by carbohydrates, soy products, dairy products or other agents to protect against environmental elements

Conditional language, such as, among others, “can,” “could,” “might,” or “may,” unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain features, elements and/or steps. Thus, such conditional language is not generally intended to imply that features, elements and/or steps are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without user input or prompting, whether these features, elements and/or steps are included or are to be performed in any particular embodiment.

It should be emphasized that many variations and modifications may be made to the above-described embodiments, the elements of which are to be understood as being among other acceptable examples. All such modifications and variations are intended to be included herein within the scope of this disclosure and protected by the following claims.

What is claimed is:

1. A method of making a soluble coffee product, comprising:
  - pulverizing coffee beans to form a first pulverized coffee product,
  - grinding or pulverizing coffee beans to form a second ground or pulverized coffee product,
  - extracting the second ground or pulverized coffee product to form an extracted coffee product and spend coffee grounds,
  - combining a first portion of the first pulverized coffee product with the extracted coffee product to form a first coffee blend,
  - drying the first coffee blend to form a first dried coffee blend,
  - combining a second portion of the first pulverized coffee product with the first dried coffee blend to form the soluble coffee product.
2. The method of claim 1 wherein the coffee is pre-frozen before being pulverized.
3. The method of claim 1, wherein the coffee is not pre-frozen before being pulverized, further comprising the step of refrigerating the grinding and pulverizing machinery.
4. The method of claim 1, wherein the coffee is pre-frozen, further comprising the step of refrigerating the grinding and pulverizing machinery.
5. The method of claim 1, wherein the first pulverized coffee product has a mean particle size of about 350 microns or less.

6. The method of claim 1, wherein the first pulverized coffee product has a median particle size of about 350 microns or less.

7. The method of claim 1, further comprising adding an additive selected from the group consisting of coffee oils, non-coffee oils, non-coffee aromas, and coffee aromas.

8. The method of claim 1, further comprising adding at least one selected from the group consisting of coffee components, nutritional supplements, flavoring components and herbal components.

9. The method of claim 1, further comprising the step of adding to the first coffee blend at least one selected from the group consisting of coffee extract, concentrated coffee, dried coffee, coffee oils, coffee aromas (distillates), flavor powders, flavor oils, spices, ground or pulverized cocoa beans, ground or pulverized vanilla beans, vitamins, antioxidants, nutraceuticals, dietary fiber, an omega-3 oil, an omega-6 oil, an omega-9 oil, a flavonoid, lycopene, selenium, a beta-carotene, resveratrol, a vegetable extract, dry green coffee extract, wet green coffee extract and an herbal extract.

10. The method of claim 1, wherein the grinding or pulverizing is carried out at a temperature of from about 20° C. to about 50° C.

11. The method of claim 1, further comprising the step of refrigerating grinding and pulverizing machinery to a temperature of about -5° C. or less.

12. The method of claim 1, further comprising the step of packaging the soluble coffee product.

13. The method of claim 12, wherein the packaging is refrigerated.

14. The method of claim 12, wherein the packaging comprises vacuum sealing and flushing with nitrogen.

15. A method of making a soluble coffee product, comprising:

- grinding or pulverizing coffee beans to form a first ground or pulverized coffee product,
- grinding or pulverizing coffee beans to form a second ground or pulverized coffee product,
- pulverizing coffee beans to form a third pulverized coffee product,
- extracting the first ground or pulverized coffee product and separating the first ground or pulverized coffee product into a coffee flavor component and a coffee aroma component,
- extracting the second ground or pulverized coffee product to form a first extracted coffee product and spend coffee grounds,
- combining the coffee aroma component with the first extracted coffee product to form a first coffee blend,
- combining the first coffee blend with a first portion of the third pulverized coffee product to form a second coffee blend,
- drying the second coffee blend to form a first dried coffee blend, and
- combining a second portion of the third pulverized coffee with the first dried coffee blend to form the soluble coffee.

16. The method of claim 15 wherein the coffee is pre-frozen before the pulverizing.

17. The method of claim 15, wherein the coffee is not pre-frozen before the pulverizing, further comprising the step of refrigerating the grinding and pulverizing machinery.

18. The method of claim 15, wherein the third pulverized coffee product has a median particle size of about 350 microns or less.