

[54] PUFFING BIOLOGICAL MATERIAL

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[58] Field of Search ..... 426/384, 385, 486, 445, 426/444, 447, 448, 470; 131/296; 264/50, 53

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[57] ABSTRACT

A method and apparatus for puffing biological material such as fruits and vegetables are provided. The method includes the steps of: (a) placing the material in a pressure chamber; (b) subjecting the material to a puffing gas such as carbon dioxide at an increased pressure between substantially 400 and 1200 psi; (c) quickly releasing the puffing gas pressure in less than 1 second to puff the material; and (d) drying the material after puffing to set it in the puffed state. The material is prepared for puffing by sizing so as to include at least one dimension of between substantially 0.025 and 1.0 inches. The moisture content is also reduced or increased to between substantially 15 and 60% wet basis. Puffing gas usage may be minimized by overpressuring with an inert gas such as nitrogen. The apparatus includes a variable volume pressure chamber that also allows usage of puffing gas to be minimized. More specifically, the volume of the chamber is maintained relatively small during charging with puffing gas. Conversely, when releasing the gas and puffing the material, the volume of the chamber is increased to allow room for the material to expand.

14 Claims, 2 Drawing Sheets