

# UNITED STATES PATENT OFFICE

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## FOOD ARTICLE AND METHOD OF MAKING

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This invention relates to an article for consumption as human food and the method of making it.

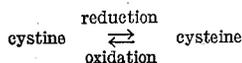
The invention provides a complete food including essential minor ingredients, means for protecting those ingredients that are incompatible with others of the ingredients, and favorable synergistic effects between various ones of the several ingredients.

Briefly stated, the invention comprises a two-layer product of kind described, one layer enclosing the other. The inner layer includes a mixture of sucrose with an aqueous solution of another sugar, air whipped into this mixture as fine bubbles, and powdered solid protein dispersed in the resulting fondant and strengthening the interfaces between the bubbles of air and the liquid phase of the fondant. The outer layer contains a chocolate and sugar mixture and preferably also intimately admixed cocoa butter, a copper salt, vitamins A and D, edible lecithin, and wheat germ oil or other antioxidant. In the preferred embodiment, the article includes ascorbic acid along with cysteine and cystine serving as an oxidation-reduction buffer pair and protecting the ascorbic acid from loss of activity on aging in contact with the other ingredients. When the food is one which is to be the sole diet for a considerable time, then other essential ingredients are incorporated in minor proportions, as will be described later herein.

The invention comprises also the method of making the food article including the melting of sucrose with the selected other sugar in the form of an aqueous syrup, whipping and cooling the resulting fondant to a temperature not above about 100° F., then stirring in thoroughly the powdered protein, and maintaining the mixture at all times after contact of the protein with the sucrose at a temperature not above 100° F. to any substantial extent. This cooling before the incorporation of the powdered solid protein prevents the loss of lysine value of the protein in contact with the sugar that occurs at higher temperatures of contact.

The protein admixed in solid form concentrates somewhat in the interfacial zones between the bubbles of air introduced by the whipping process and the liquid phase and thus strengthens and stabilizes the fondant.

The cysteine and cystine pair, under the influence of oxidizing and reducing conditions as they develop, shifts in this manner



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and thus buffers these conditions so as to protect the ascorbic acid from either oxidation or reduction.

The separation of the copper salt from the protein in different layers prevents catalysis, that would otherwise be caused by copper, of oxidation in the protein and sugar mixture. The separation reduces browning and development of off-color flavor which otherwise would be objectionable in a composition including a copper salt, sucrose and protein.

In addition, the various ingredients coact to mask the undesirable flavors that have heretofore prevented the public acceptance of a complete food in concentrated form such as described herein. The present product compounded in the manner stated is not only edible and wholesome but also of appealing and appetizing taste.

The invention will be illustrated in further detail by description in connection with the attached drawings to which reference is made.

Fig. 1 is a perspective view of the improved food article partly broken away for clearness of illustration.

Fig. 2 is a magnified fractional view of the inner layer of the article shown in Fig. 1.

There are shown a food article including inner layer 10 and outer layer 12. Within the inner layer are dispersed fine bubbles of air 14.

The inner or fondant layer 10 contains sucrose incorporated suitably as the powdered or confectioners' cane or beet sugar.

This layer includes also an aqueous and normally syrupy solution of a sugar selected from the group consisting of dextrose, levulose and invert sugar. This solution is preferably corn syrup or honey, the honey being suitably diluted with water to about the consistency of corn syrup before the mixture is formed. Depending upon the kind of beater available, the corn syrup and also the honey before use may be diluted to a somewhat lower viscosity by the incorporation of an additional proportion of water. When corn syrup is used, it may be the usual commercial syrup or a solution of like total solids content made by dissolving dried starch conversion syrup solids in water, as in the proportion of about 75 to 80 parts of the solids to 100 parts total weight of the resulting syrup. The dextrose equivalent of the syrup or said solids should be about 30% to 80% of reducing sugars calculated as dextrose on the dry basis.

As the protein used there is chosen one that is of bland, satisfactory taste. Examples are milk proteins, powdered egg white, or wheat gluten.