

thickness of the compressed bar being dependent on the weight of material compressed. If the pressure used is too low, the food bars will crumble too easily in handling, particularly when carried on the person in the field. On the other hand, if the pressure used is too high, the resulting bars would become so dense that they could not be readily bitten and chewed directly without prior rehydration and, furthermore, rehydration would become much too difficult and slow to realize the objective of the military to provide nutritious, compact, dehydrated food bars which will remain stable and safe over long periods of time even at elevated temperatures and which will be capable of being rehydrated throughout the bar material within 10 minutes in water at room temperature or even below room temperature, as frequently becomes necessary during combat or patrol missions. The dwell time in the compression step may be varied from about 5 to about 20 seconds, but is preferably about 10 seconds.

In redrying the compressed food bars of the invention, it is preferred that they be reduced to moisture contents from about 1 percent to about 4 percent by weight.

The final food bar products, after redrying, have densities, for example, generally between about 1.0 and about 1.4 gm. per cc.

The compressed, dehydrated food bars of the invention are very useful for any subsistence purpose or situation where it is important to convert a variety of food products into a very compact form so that a varied diet may be obtained by consumption of one or more food bars or other compact forms of the food and to incorporate long-term stability in the compacted food, yet including in the food the ability to be quickly rehydrated in cold water or to be immediately eaten without prior rehydration if the circumstances require such eating in order to avoid diverting attention away from other important or essential activities or in the event that the consumer would prefer to eat the rations provided for his sustenance in that fashion.

It will be understood that various changes in the details, materials and order in which the steps in the method are carried out which have been described in order to explain the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention.

We claim:

1. A rapidly rehydratable, compacted, dehydrated food bar comprising discrete particles of blanched and freeze-dried potatoes substantially uniformly mixed with non-potato food bar-forming ingredients in the approximate proportion of about 10 to about 20 percent of said particles of potatoes to about 90 to about 80 percent of said non-potato food bar-forming ingredients, said percentages being by weight, said potato particles having volumes of from about 1/64 cubic inch to about 1/8 cubic inch when mixed with said non-potato food bar-forming ingredients, said compacted, dehydrated food bar having a bulk density from about 1.0 to about 1.4 gm per cc and a moisture content of from about 1 percent to about 4 percent by weight.

2. A rapidly rehydratable, compacted, dehydrated food bar according to claim 1, wherein said potato particles are in substantially cube form prior to the mixing and compacting of said mixture of potato particles with

said non-potato food bar-forming ingredients.

3. A rapidly rehydratable, compacted, dehydrated food bar according to claim 2, wherein said cubes of potato have volumes of from about 1/64 cubic inch to about 1/8 cubic inch.

4. A method of making a compacted food bar of low moisture content which is rapidly rehydratable in cold water and is directly edible, easily bitable and chewable without prior rehydration which comprises the steps of:

a. spraying freeze-dried potato particles having volumes of from about 1/64 to about 1/8 cubic inch and a moisture content of from about 1.0 percent to about 4.0 percent by weight with sufficient water to increase their moisture content to from about 5 percent to about 15 percent by weight,

b. holding said potato particles with said water sprayed thereon in a closed container for a time from about 3 to about 6 hours sufficient to accomplish equilibration of said water in said potato particles,

c. adding said equilibrated potato particles to a mixture of non-potato food bar-forming ingredients in the proportion of about 10 percent to about 20 percent by weight of the freeze-vacuum-dehydrated potato particles to about 90 percent to about 80 percent of said non-potato food bar-forming ingredients and blending said equilibrated potato particles with said non-potato food bar-forming ingredients,

d. compressing said blended equilibrated potato particle mixture with said non-potato food bar-forming ingredients at a pressure from about 800 psi to about 1500 psi for a dwell time of from about 5 to about 20 seconds to form a compressed food bar of a thickness of about 0.25 to about 0.75 inch, and

e. redrying said compressed food bar by vacuum drying to a moisture content of from about 1 percent to about 4 percent by weight.

5. A rapidly rehydratable, compacted, food bar produced by the method of claim 4.

6. A method of making a compacted food bar of low moisture content in accordance with claim 4, wherein said potato particles are in the form of rectangular parallelepipeds.

7. A method of making a compacted food bar of low moisture content in accordance with claim 6, wherein said potato particles are substantially in the form of cubes of potato.

8. A method of making a compacted food bar of low moisture content in accordance with claim 7, wherein said cubes of potato have a moisture content of from about 1 percent to about 2 percent by weight.

9. A rapidly rehydratable, compacted, food bar produced by the method of claim 8.

10. A method of making a compacted food bar of low moisture content in accordance with claim 7, wherein in said steps of spraying said cubes of potato with water and holding said cubes of potato with said water sprayed thereon to accomplish equilibration of said water in said cubes of potato, sufficient water is applied to said cubes of potato to increase their moisture content to from about 10 percent to about 12 percent by weight.

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