Summary

Technical Problem

[0004]

It is desired that a food powder or a powdered milk is compression molded to produce a solid food and a solid milk which have easily handled strength and improved solubility.

[0005]

An object of the present disclosure is to provide a solid food and a solid milk which have suitable solubility and easily handled strength.

Solution to Problem

[0006]

In one aspect according to the present disclosure, there is provided a solid food having a solid form obtained by compression molding a food powder, wherein in a case where the solid food is submerged in 200 ml of warm water at 50 ± 1°C with respect to one solid food and stirred at a rotation speed of 0.5 m/s (peripheral speed), a dissolution process from the solid food starting to dissolve until the solid food completely dissolving is measured over time on the basis of electric conductivity, times (sec) at which a dissolution ratio, which is a ratio of

electric conductivity when electric conductivity at the time of finish of dissolution is regarded as 100%, reaches 20%, 63%, and 95% are respectively designated as t_{20}, t_{63}, and t_{95}, and times (sec) at which the dissolution ratio of a reference solid food, which is formed under conditions in which a difference in weight with the solid food is within ±0.3%, a difference in surface area with the solid food is within ±2%, a difference in hardness with the solid food is within ±4%, and a humidification treatment temperature is 100°C or lower, reaches 20%, 63%, and 95% are respectively designated as t_{20ref}, t_{63ref}, and t_{95ref}, a solubility index (I_d) represented by the following Formula (1) is less than 1,

$$I_d = (t_{20}/t_{20ref} + t_{63}/t_{63ref} + t_{95}/t_{95ref})/3 \bullet\bullet\bullet (1).$$

[0007]

In another aspect according to the present disclosure, there is provided a solid milk having a solid form obtained by compression molding a powdered milk, wherein in a case where the solid milk is submerged in 200 ml of warm water at 50 ± 1°C with respect to one solid milk and stirred at a rotation speed of 0.5 m/s (peripheral speed), a dissolution process from the solid milk starting to dissolve until the solid milk completely dissolving is measured over time on the basis of electric conductivity, times (sec) at which a dissolution ratio, which is a

ratio of electric conductivity when electric conductivity at the time of finish of dissolution is regarded as 100%, reaches 20%, 63%, and 95% are respectively designated as t_{20}, t_{63}, and t_{95}, and times (sec) at which the dissolution ratio of a reference solid milk, which is formed under conditions in which a difference in weight with the solid milk is within ±0.3%, a difference in surface area with the solid milk is within ±2%, a difference in hardness with the solid milk is within ±4%, and a humidification treatment temperature is 100°C or lower, reaches 20%, 63%, and 95% are respectively designated as t_{20ref}, t_{63ref}, and t_{95ref}, a solubility index (I_d) represented by the following Formula (2) is less than 1,

$$I_d = (t_{20}/t_{20ref} + t_{63}/t_{63ref} + t_{95}/t_{95ref})/3 \cdots (2).$$

Advantageous Effects of the Disclosure

[0008]

According to the solid food of the present disclosure, since the solubility index (I_d) is less than 1, the solid food is excellent in solubility while having a hardness equal to the hardness of a conventional solid food. Therefore, the solid food of the present disclosure can have suitable solubility and easily handled strength.

[0009]

According to the solid milk of the present disclosure, since the solubility index (I_d) is less than 1, the solid milk is excellent in solubility while having a hardness equal to the hardness of a conventional solid milk. Therefore, the solid milk of the present disclosure can have suitable solubility and easily handled strength.

Brief Description of Drawings

[0010]

[Fig. 1] Fig. 1 is a perspective view of a solid milk according to an embodiment.

[Fig. 2] Fig. 2 is a perspective view of a solid milk according to Modified Example.

[Fig. 3] Fig. 3 is a graph showing a temporal change in dissolution ratio.

[Fig. 4] Fig. 4 is a graph showing results obtained by evaluating solubility.

[Fig. 5] Fig. 5 is a graph showing results obtained by measuring a content ratio of free fat.

Description of Embodiments

[0011]

Hereinafter, an embodiment of the present invention will be described. However, the embodiment to be described below is merely an example and can be