

Corn Protein in Vegan Frozen Dessert



Plant protein ingredients are commonly utilized in vegan frozen desserts for their emulsification, foaming, viscosifying and water-holding properties. These functionalities are essential to the final product's texture and structure.

Corn protein was produced by Cargill with at least 85 wt% corn protein (dry basis) and less than about 1.5 wt% oil (dry basis), as described in patent application WO20161544CPI. The formula could be adapted to use corn protein with a minimum of 65 wt% protein and less than 3 wt% oil (dry basis) and anticipate the same finding.

In this example, corn protein is used in an almond-milk-based vegan frozen dessert formula. Ingredients in the formula were pre-weighed, then combined according to the processing procedure.

FORMULA

Ingredients	(%)
Almond Milk	57.00%
Liquid Sugar	17.80%
Water	8.22%
Corn Syrup Solids	6.00%
Corn Protein	5.00%
Coconut Oil	4.30%
Glycerin	1.00%
Daritech™ XN FN 120 Custom Texturizing Blend	0.65%
Potassium Sorbate	0.03%
Total	100.00

PROCESSING PROCEDURE

1. Blend almond milk, liquid sugar, water and glycerin.
2. Preheat liquid blend (minus coconut oil) and corn protein to 90-100°F and allow to hydrate for 10-15 minutes.
3. Melt in coconut oil.
4. Blend dry ingredients and add to liquid blend. Mix well.
5. Pasteurize 185°F for a minimum 30-second hold until all ingredients are well blended. (Optional benchtop homogenization possible after heat step.)
6. Cool to 40°F and age overnight with or without slow agitation in cooler.
7. Freeze using Cuisinart ice cream processor (approximately 60 minutes).

RESULTS

The vegan frozen dessert with corn protein processed similarly to other plant-protein-based frozen desserts. It had a creamy mouthfeel and minimal gritty texture.



Vegan frozen dessert with 5% corn protein

CONCLUSION

Corn protein can be used in a formula to create an appealing vegan frozen dessert.