

The Incredible, Edible... White Navy Bean Flour!

By Margaret Hughes, Avena Foods Limited

White navy bean flour can appear simplistic. In actuality, it is a highly functional ingredient capable of egg replacement. Eggs contain 11% protein, of which 12% are globulins and 71% are albumins. White navy bean flour is 23% protein, with 50-80% globulins and 15-25% albumins. Essentially, white navy bean flour has more albumin than eggs, allowing similar functionality for multiple applications.

“WHITE NAVY BEAN FLOUR IS ADVANTAGEOUS TO USE IN THE MANUFACTURING PLANT. IT IS HACCP COMPLIANT AND EXPORT FRIENDLY.”

The protein content in white navy bean flour, like eggs, has a similar ability to form protein gels (Boye et al., 2013). Recent trials have shown that “BEST” Whole Navy Bean Flour can be used to make egg-free bakery products, sheeted and baked pet biscuits, as well as replace starches in gravy.



The trials also have shown that white navy bean flour can be used as a binder in meat systems – chunk and form products, replacing the egg if used as a binder. This versatile flour will also add viscosity and mouthfeel to applications such as gravy. The versatility of white navy bean flour makes this ingredient an excellent choice for both canned pet food products as well as extruded kibble.

White navy bean flour is advantageous to use in the manufacturing plant. It is export friendly, non-GMO and hypoallergenic. It fits brilliantly into any Hazard Analysis and Critical Control Points (HACCP) program, eliminating salmonella risk associated with eggs. Additionally, white navy bean flour fits well into any project destined for cost reduction as it has a much lower cost in comparison to egg.

White Navy Bean Flour Advantage:

- Easy to use and compact to store, with a two-year shelf life.
- Equivalent quality to eggs in terms of palatability and texture.
- Excellent solubility, emulsification, foaming and gelation properties.
- Highly economical, with less price volatility than eggs.
- More economical and sustainable than fractionated pea protein concentrates or isolates.
- Clean label, free of all major allergens and cholesterol free.
- Well accepted in vegan/vegetarian products.
- Considered “natural” by the CFIA, FDA, USDA FSIS and AAFCO.
- Non-GMO, available NOP organic or conventional.
- Sustainably grown and milled in North America.



White navy bean flour was used as a binder in this application.



Margaret Hughes is vice president of Sales and Marketing at Avena Foods Limited. Best Cooking Pulses, an agrifoods company active in the international pulse trade since 1936, has joined Avena Foods. This combined entity continues to develop proprietary technology to mill premier quality pulse and oat ingredients for use in conventional and certified organic markets across the globe. Avena Companion Ingredient’s “BEST” products are proudly distributed in the U.S. by HORN, an IMCD company, for the pet food industry.