

Fababean in Meat Replacers

Jan M. Bühler^{1,2}, Marieke E. Bruins¹, Atze Jan van der Goot²

¹ Wageningen Food & Biobased Research, Wageningen, The Netherlands

² Wageningen University, Department of Food Process Engineering, Wageningen, The Netherlands

The need for and interest in plant based protein is growing along with the world population. However, the portfolio of alternative proteins needs to be diversified to avoid large monocultures, allergies or intolerances and enable local production of raw materials. Fababean is a starch rich crop that can be grown in harsher environments than e.g. soy and can be used for partial replacement.

Sustainability of plant protein can be improved by using less purified materials through mild fractionation. This can be done with fababean by using dry fractionation. This will not only be more sustainable, but will also lead to more native and less pure protein fractions. (Schutyser et al., 2015)

In our research, we evaluated the applicability of fababean protein at different purities for structuring purposes. Fababean contains a large number of “contaminants” that not only influence nutrition (resistant starches) but also functionality and applicability in certain products. Fababean products have been tested for producing meat-like, fibrous structures using the High Temperature Shear Cell (developed at Wageningen University), and the findings can be extended to other structuring processes like extrusion.

We investigated the interaction of functional components and contaminants of fababean and explored potential synergies. We further explored possibilities to create functional fractions and improve functionality of said fractions (Bühler et al. 2019). Ultimately, we aim to assess the potential of fababean protein to be used as an alternative to soy protein in meat replacer applications.

References

Jan M. Bühler, Birgit L. Dekkers, Marieke E. Bruins, Atze Jan van der Goot, 2019, "Dry heating as a route to increase water binding in fababean protein concentrate", submitted

M.A.I. Schutyser, P.J.M. Pelgrom, A.J. van der Goot, R.M. Boom, 2015, "Dry fractionation for sustainable production of functional legume protein concentrates", Trends in Food Science & Technology 45 (2015), p, 327-335