Lupin bread rises to the quality challenge

October 20 2014, by Vicky Manley

Results showed five ASL varieties produced bread volume, crumb cell characteristics and texture which consumers could find suitable, however the mandelup variety proved the least palatable. Credit: Winam

Sweet lupins are shaping up to be a viable and nutritious element in wheat breads and cereals with recent research suggesting certain varieties produce bread with desirable volume, texture and crumb cell characteristics.

Curtin University's Centre for Food Research, in partnership with the

CSIRO and the University of the Philippines are investigating Australian Sweet Lupins (ASL; Lupinus angustifolius) for potential large scale production of flour and breads.

The study found wheat bread could be nutritiously enhanced and remain palatable after the addition of certain varieties of protein-rich, high-fibre, Australian sweet lupins.

Curtin University expert and project leader Dr Stuart Johnson says wheat is commonly used in cereal and bread making due to its desirable texture but it lacks essential nutrients.

In contrast, ASL legumes are highly digestible, high in plant protein and high in essential amino acids, minerals, fibre and gluten free.

Dr Johnson says, Type 2 diabetes and heart disease are linked to the over-consumption of refined foods and food scientists are looking at healthy alternatives such as lupins.

Prior studies show lupins can improve glucose metabolism (diabetes), blood pressure and bowel health.

They evaluated six varieties of ASL—Belara, Coromup, Gungurra, Jenabillup, Mandelup and Tanjil— and used a ratio of 20 per cent ASL flour to 80 per cent wheat flour in dough and compared the resulting rolls to standard wheat bread rolls.

"Bread rolls, similar to a common dinner roll used in SE Asia, were prepared using a traditional sponge and dough method," Dr Johnson says.

They then measured moisture-content, protein, dietary fibre, fat, ash and total carbohydrates in the ASL rolls.

Results showed five ASL varieties produced bread volume, crumb cell characteristics and texture which consumers could find suitable, however the mandelup variety proved the least palatable.

"This was an interesting find as in the past mandelup had been the most commonly used lupin variety in bread," Dr Johnson says.

Dr Johnson believes there is a potential export market for Australian lupin farmers and food producers.

"The research highlights the potential of a lupin variety such as Coromup, as a healthy food staple for commercialisation in highly populated countries such as SE Asia," he says.

"If used for large-scale bread-mix manufacture of a stable food, ASL has the potential to aid chronic disease reduction," Dr Johnson says.

More information: C.B.J. Villarino, V. Jayasena, R. Coorey, S. Chakrabarti-Bell, S.K. Johnson, "The effects of Australian sweet lupin (ASL) variety on physical properties of flours and breads," *LWT - Food Science and Technology*, Volume 60, Issue 1, January 2015, Pages 435-443, ISSN 0023-6438, dx.doi.org/10.1016/j.lwt.2014.08.028.

Provided by Science Network WA