

## **PRO1526: Incorporation of Canadian Pulse-Based Ingredients Into Rice Noodle Targeting the Chinese Market**

The 68th UN General Assembly declared 2016 the International Year of Pulses (IYP). Canada is the largest pulse producer and exporter in the world. The health benefits of pulses have been extensively studied because they are good sources of proteins, dietary fibres (ranged from 15%-30%), high quality starches, and other important nutrients such as vitamins, minerals, carotenoids, and isoflavones. Rice noodle, with a smooth texture and mouth-feel, is a popular food in China and many Asia countries. Unfortunately, traditional rice noodle is well known for its lacking of high quality protein and dietary fibre. Fortification of rice noodle with pulse ingredients provided a possible solution to this problem.

The objectives of the study were to investigate the processing properties of pulse-based ingredients and flours, such as heating, extrusion properties, and compatibility with rice flours and other food ingredients. The results from the research showed that the pulse fortified rice noodles exhibited increased dietary fibre (DF) content ranging from 5.70 to 11.29 g/100g, dry mass (DM) as compared with rice noodle DF of 2.31 g/100 g, DM. The protein content of novel rice noodles improved from 7.4 to 13.4 g/100 g DM with increased concentration of pulse flour. The novel rice noodle protein had a balanced essential amino acid profile with significant enrichment of lysine, arginine, leucine, and phenylalanine in comparison to that of rice noodle. Furthermore, the novel rice noodles had increased antioxidant activities, due to the improvements of total phenolic and flavonoid components. The 50% CF substitution and 30% LF substitution had a predicted Glycemic Index(pGI) of 59 and 63, respectively, which was significantly lower than that of rice noodle (pGI=67). Sensory evaluation tests revealed that CF fortified rice noodles exhibited higher sensory scores compared with that of LF fortified rice noodle, for example 50% CF fortified rice noodles had a similar overall sensory score that of rice noodles. In conclusion, the 50% CF fortified rice noodle had beneficial nutritional profiles and displayed a greater possibility to be accepted by the consumers.