

## **Influence of processing conditions on pulse flake quality**

Stephen Cork<sup>1,2</sup>

Asgar Farahnaky<sup>2,3</sup>, Christopher Blanchard<sup>1,2</sup> and John Mawson<sup>2</sup>

<sup>1</sup> School of Biomedical Sciences, Charles Sturt University, Wagga Wagga, NSW, 2650 Australia

<sup>2</sup> ARC Industrial Transformation Training Centre for Functional Grains(FGC) and Graham Centre for Agricultural Innovation, Charles Sturt University, Wagga Wagga, NSW, 2650 Australia

<sup>3</sup> School of Science, RMIT University, Bundoora West Campus, Plenty Road, Melbourne, VIC, 3083, Australia

Pulses are a healthy and sustainable food source of global significance. Pulse crops like chickpeas and faba beans are gaining popularity with Australian farmers, however, pulse producers face volatile international markets and limited domestic processing markets. Pulse consumption is well below the recommended daily intake in developed countries such as Australia, and the traditional pulse dishes in developing nations are being replaced by “ready-to-eat” cereals. Therefore, new ways to increase pulse consumption are required, especially in the processed “ready-to-eat” market. The production of pulse flakes could be a means of increasing pulse consumption if we can address pulse processing challenges such as their structural weakness and long cooking times.

This research investigated the influence of processing conditions on the flaking quality of Australian chickpea and faba bean splits. The process consisted of first conditioning the pulse splits using different steam injection times (one, three or five minutes). Secondly, the softened splits were flaked between two rollers with gap sizes ranging from 0.6 to 1.9 mm. Finally, the rolled pulse flakes were rapidly dried using a fluidised bed drier at either 150°C or 200°C.

The results demonstrate that the quality parameters of flakes generated using Australian pulses including the degree of cooking, appearance, texture and durability are affected by processing parameters. By optimising processing conditions, it may be possible to produce ready-to-eat pulse flakes that are healthy and add value to pulse grains.