

## ABSTRACT

### Comparison of Reducing Sugar Content and Glycemic Index Between Boiled Mung Beans (*Vigna radiata*) and Kidney Beans (*Vigna angularis* (Willd.) Ohwi & H. Ohashi)

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Indonesia is one of the countries with the most diabetic case in the world after India, China, and USA. Diabetes is caused by an abnormal carbohydrate metabolism, therefore, diet control holds the key role in the management and prevention of the disease. The aims of this study are to determine the reducing sugar and crude starch content of boiled mung beans and kidney beans, which are the components of food that could affect boiled mung beans and kidney beans's glycemic index, and to determined their glycemic index.

The samples were determined for their reducing sugar and crude starch content, which then followed by determining their glycemic index using rabbit as the objects. The samples were processed by boiling them in different duration, mung beans boiled for 30 minutes and kidney beans boiled for an hour. Result showed that mung beans contained  $24,58 \pm 1,21$  % w/w reducing sugar and  $4,23 \pm 0,14$  % w/w crude starch which produce glicemic index  $50 \pm 2$  in rabbits, whereas kidney beans contains  $12,16 \pm 0,38$  % w/w reducing sugar and  $6,62 \pm 0,21$  % w/w crude starch which produce glycemic index  $41 \pm 4$  in rabbits. Those result were compared using statistical analysis, t test.

Result shows that in terms of reducing sugar and glycemic index, mung beans is significantly higher than the kidney beans. However, in terms of the crude starch, mung beans is significantly lower than kidney beans.

Based of those result, mung beans and kidney beans are classified as food with low glyemic index ( $< 55$ ), and could be used as alternative food for diet control in the management and prevention of diabetes mellitus.

**Keywords:** mung beans, kidney beans, reducing sugar, crude starch, glycemic index, diabetes mellitus