The influence of the development stage of the pea seeds on the proteins amount extracted in ultrasound field

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Abstract

The pea seeds (Pisum sativum) represent a valuable source of food proteins. Because the protein content in pea seeds varies with time, during their development, we studied the evolution of soluble protein amount in an experimental lot from the Kelvedon wonder type. To extract proteins we used the ultrasound extraction method, because it is faster and has a better extraction yield. Although the pea seed are consumed in green state, if the protein extraction is wanted, the optimal time point for this procedure is their full maturation, when the maximal yield is obtained. To extract the proteins, there were studied pea samples obtained from the own experimental culture in the Kelvedon wonder type, cropped in different development phases, from green seeds to mature seeds. Also, the mature seeds were germinated for 3 days to observe the influence of germination on the protein content. After extraction, the samples were filtered to eliminate the insoluble vegetal material. Then, the clear filtrate was diluted with distilled water 1:9 for all probes. From green seeds there can be extracted only 44.5\% from the protein amount extracted from the mature seeds and, in the case of semi mature seeds, the percent is 78.6, for the same amount of seeds.

Key words: pea proteins, ultrasound extraction, protein extraction