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***In vitro* protein and dry matter digestibility of some varieties of *Pisum sativum*
and *Glycine max* after germinating**

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Though many studies have been carried out on germinated legumes, there is a lack of information on digestibility of cotyledons and radicles in *Pisum sativum* (peas) after germination. Radicles can be eaten fresh in the form of a salad. Digestibility of protein is a good indicator of the quality of protein. The main objective of this study was to investigate the *in vitro* digestibility of raw legumes and compare it with germinated cotyledon and radicles and to explore the possibility of using *Pisum sativum* as an alternative to *Glycine max* (soya bean) for both humans and as a feed for farm animals.

Four varieties of *Pisum sativum* (Terno, Xantos, Svit, Achat) and *Glycine max* seeds were germinated for 48 hours. Seeds, cotyledons and radicles of each legume were analysed separately for their chemical characteristic including crude proteins, dry matter, *in vitro* protein digestibility (IVPD) and *in vitro* dry matter digestibility (IVDDM). The *in vitro* digestibility of legumes was determined using pepsin (3 g/1.5l of 0.1M HCl in to one jar; pepsin EC 3.4.23.1. from porcine gastric mucosa, Merck, Darmstadt, Germany) and the Daisy^{II} Incubator. Data were evaluated by producing summary statistics and analyzing the variance using an ANOVA. The mean values were separated using the Duncan's multiple range test and cluster analysis.

Although the protein content was higher in the raw seeds of *Glycine max* when compared with all *Pisum sativum* varieties, the IVPD in the raw seeds of all *Pisum sativum* was not significantly different ($P \geq 0.05$) to the raw seeds of *Glycine max*. IVPD of cotyledons and radicles increased significantly ($P < 0.05$) after germination for 48 hours in comparison with the results of IVPD values of respective raw seeds of all the legumes investigated in this study. The IVPD values of radicles of all legumes studied ranged from 88.2 to 93.4 %, in cotyledons of legumes it ranged from 79.1 to 86.4 % and in raw seeds it ranged from 62.6-75.0 %. Values for IVPD was higher when compared to the dry matter digestibility in all legumes tested. There was no significant difference ($P \geq 0.05$) in IVDP values of raw seeds, cotyledons and radicles of *Pisum sativum* when compared with *Glycine max*. Therefore, varieties of *P. sativum* tested can be given as alternative sources of protein after germination without any further processing to farm animals. The quality of proteins in all legumes improves significantly after germination for 48 hours in their cotyledons and radicles when compared to raw seeds of the respective legumes.

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