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Chia (*Salvia hispanica* L.) and flax (*Linum usitatissimum* L.) seed as a suitable plant source of n-3 polyunsaturated fatty acids

Sona Nitrayova, Matej Brestensky, Jaroslav Heger and Alexander Sirotkin
National Agricultural and Food Center, Slovakia

The seeds of most plants are rich in various nutrients and can provide a lot of health benefits. Flax seed and chia seed are renowned as good nutritional sources. The objective of our study was to determine and compare differences in fat and fatty acids concentrations for chia and flax seeds. Study was carried out using 17 samples of brown and 3 samples of gold seeds of Flax (*Linum usitatissimum* L.) and 9 samples of Chia (*Salvia hispanica* L.).

The average fat content of flax seeds was about 69.56 g/kg higher than that in chia seed (334.08 g/kg dry matter). The flax seed and chia seed exhibited similar fatty acid profiles (the presence of palmitic, stearic, oleic, linoleic, α -linolenic and arachidic fatty acids and other fatty acids were present just in traces). A significant differences ($P < 0.05$) in fatty acid composition among individual samples were detected. α -linolenic acid constituted on average 55.10% of the total fatty acids of flax seeds and 62.21% of chia seed and for linoleic acid it was 15.90% and 18.81%, respectively. All seeds had low n-6 PUFA / n-3 PUFA ratio, which ranged from 0.27 to 0.30.

Both flax seed and chia seed are the good choice of healthy food to maintain a balanced serum lipid profile. These seeds can be an appropriate alternative to n-3 PUFA sources for vegetarians and people allergic to fish. Flax seeds must be ground to release their nutrients, but chia seeds do not.

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Biography

Sona Nitrayova works as a scientist at the National Agricultural and Food Center. In the object of her interest is metabolism of amino acids and she also studies the effect of different enzymes, probiotics, prebiotics, plant additives, etc. on metabolism and nutrient utilization. She is specialist on digestive tract surgery of pigs as a animal model for human nutrition research.