

Determination of fat content and profile of fatty acids in new varieties of oats

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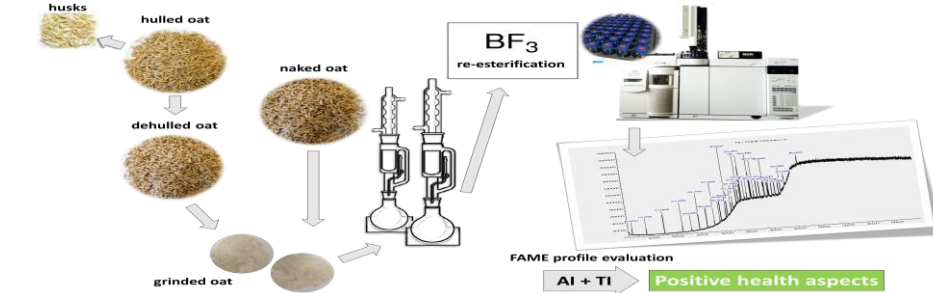
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Background Conclusion

Oat crop has a great potential to contribute to food security for human consumption as well as the animal feed. It can be used in various sectors as a raw material in food industry pharmaceuticals and cosmetic purposes. The demands of oat production have been increasing due to the physiological and nutritional attributes such as an immense level of natural antioxidants, tocopherols, Vitamin E, dietary fiber (β-glucans), as well as good sources of polyunsaturated fatty acids.

- Fat content varied from 2.59 to 3.49 in the oat cultivars before dehulling, and from 4.27 to 4.79 after dehulling.
- Our result suggested that naked and dehulled cultivars had more fat content than the hulled cultivars.
- Linoleic and oleic acid were predominant in all analysed cultivars.
- There was no significant difference in saturated fatty acids (SAF) profile in all analysed varieties.

Study Design



Results

Sample	Dry matter (g/100 g)	Fat content
Cavaliere	90.40 ± 0.08	2.86 ± 0.08
Cavaliere B	88.10 ± 0.49	4.27 ± 0.15
Gregor	89.23 ± 0.24	3.49 ± 0.10
Gregor B	90.46 ± 0.15	4.79 ± 0.33
Kertag	90.07 ± 0.03	2.59 ± 0.22
Kertag B	87.44 ± 0.78	4.48 ± 0.19
Seldon	90.18 ± 0.13	3.16 ± 0.14
Seldon B	89.35 ± 0.25	4.53 ± 0.15
Kamil	89.73 ± 0.50	5.22 ± 0.37
Otakar	89.78 ± 0.21	5.02 ± 0.05

References:
 Kouřimská, L., Sabolová, M., Horčíčka, P., Rys, S., Božik, M., 2018. Lipid content, fatty acid profile, and nutritional value of new oat cultivars. *J. Cereal Sci.* 84, 44–48.
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Fatty acid	Hulled				Dehulled				Naked	
	Cavaliere	Gregor	Kertag	Seldon	Cavaliere	Gregor	Kertag	Seldon	Kamil	Otakar
Palmitic	20.95 ± 0.56	18.79 ± 0.98	18.67 ± 0.3	20.76 ± 0.37	20.00 ± 0.89	19.30 ± 0.82	19.42 ± 0.21	20.38 ± 0.9	20.59 ± 0.33	21.14 ± 0.62
C16:0										
Steraric	1.91 ± 0.33	1.47 ± 0.07	1.21 ± 0.09	1.53 ± 0.16	1.32 ± 0.08	1.31 ± 0.13	1.04 ± 0.03	1.32 ± 0.08	2.46 ± 0.10	1.86 ± 0.05
C18:0										
Oleic	33.52 ± 1.68	32.62 ± 1.02	32.13 ± 0.13	33.26 ± 0.97	27.81 ± 0.64	29.91 ± 1.77	29.2 ± 0.96	27.85 ± 0.88	37.06 ± 0.11	34.56 ± 0.36
C18:1 cis-9										
Linoleic	38.06 ± 1.06	38.77 ± 0.28	39.40 ± 0.19	37.36 ± 0.66	40.18 ± 0.91	39.92 ± 0.89	41.16 ± 0.69	39.64 ± 1.17	36.03 ± 0.24	38.19 ± 0.55
C18:2 cis-9,12										
Linolenic	1.97 ± 0.25	1.66 ± 0.09	1.83 ± 0.09	2.02 ± 0.26	1.54 ± 0.04	1.53 ± 0.15	1.68 ± 0.07	1.61 ± 0.13	1.35 ± 0.05	1.38 ± 0.05

Table 1: Fatty acid composition of hulled, dehulled and naked analysed oat varieties (% of total identified)
 Table 2: Average dry matter, fat and fat on dry matter contents (g/100 g) of oat cultivar