

Review Article

MINERAL CONTENT OF FENUGREEK SEED FOR LIVESTOCK AND POULTRY

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Introduction

Medicinal and aromatic plants have been used for many years in human nutrition as spices and medical additives in animals to increase dietary energy utilization, improve the performance efficiency and as a new source of protein.

The active therapeutic constituents of fenugreek seeds are 4-hydroxy isoleucine (Hajimehdipoor *et al.*, 2008), lysine and L-tryptophan rich proteins, mucilaginous fibre (galactomannan) and other rare chemical constituents such as saponins, coumarin, fenugreekine, nicotinic acid, sapogenins, phytic acid, scopoletin and trigonelline, which are thought to account for many of its presumed therapeutic effects like inhibition of cholesterol absorption and lowering blood sugar level (Bukhari *et al.*, 2008).

MINERAL ANALYSES

Macro Minerals

The calcium and phosphorus content in fenugreek seed are presented in Table. The calcium and phosphorus content in fenugreek seed ranged from 0.06 to 1.30 and 0.21 to 1.00% respectively. The fenugreek seed endosperm and seed coat contained 0.03% and 0.5% calcium respectively (Shakuntala *et al.*, 2011).

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Table 1: Macro and micro mineral composition of fenugreek seed and maize

S. No.	Ca (%)	P (%)	Na (%)	Cu (mg/kg)	Mn (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	References
1.	0.17	0.28			15.0	23.5	102	Nabey and Damir (1990)
2.	1.30	0.48	0.09				110	Leela and Shafeekh (2005)
3.	1.10	1.00	0.04	4.8	3.7	41.2	224	Abaza (2007)
4.	0.16	0.37	0.02	7.1	10.3	30.8	65	Anonymous (2010a)
5.	0.06	0.37	0.001	13.0	10.0	70.0	120	Ziwar (2010)
6.	0.23	0.21	0.29	54.0	16.0	44.0	116	Ali <i>et al.</i> (2012)
7.	0.07			90.0	90.0	24.0	258	Al-Jasass and Al-Jasser (2012)
8.	0.86				68.0	70.0	540	Mahmoud <i>et al.</i> (2012)
Maize	0.02	0.28	0.02	3.00	7.00	18.0	45	NRC (1994)

The average of the references noted in the Table 1 for calcium (0.49 vs 0.02), phosphorus (0.45 vs 0.28) and sodium (0.09 vs 0.02) content of fenugreek seed were higher than in maize.

Micro Minerals

The micro mineral content in fenugreek seed is presented in Table 1. The copper content of the fenugreek seed ranged from 7.1 to 54 mg/kg. The range of manganese, zinc and iron content in fenugreek seed were 15 to 68, 23.5 to 70 and 102 to 540 mg/kg respectively. The fenugreek seed endosperm and seed coat contained (mg/kg) 10.3, 4.5 copper, 6.3, 1.6 manganese, 31.7, 9.4 zinc and 213, 0 iron respectively.

The average of references noted in Table for copper (33.7 vs 3.0), manganese (30.4 vs 7.0), zinc (43.3 vs 18.0) and iron (191 vs 45) mg/kg content of fenugreek seed were higher than in maize.

Conclusion

As per the review on mineral content of fenugreek seed concluded that the fenugreek seed can be used as livestock and poultry feed preparation.

References

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