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Research paper (2)

Title	Influence of substituting soybean meal with moringa seed cake on feed intake, growth performance, digestibility, blood parameters and economics of fattening crossbred calves.
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Journal	<i>Trop Anim Health Prod, 55, 213. https://doi.org/10.1007/s11250-023-03638-9</i>
	Co-authored with others inside and outside the specialization Published in a Q2 specialized international journal .

ABSTRACT

The aim of this study was to investigate the effects of substitution moringa seed cake (MSC) for soybean meal (SBM) in calves' rations on blood parameters and growth performance. Thirty-two crossbred calves (232 ± 6.75 kg) were divided into 4 groups (8 animals each). All animals were fed a ration of 30% Egyptian clover + 10% corn silage and 60% concentrate mix (CM). The first group (MSC0%) was fed the CM without any MSC (control), while the second (MSC25%), the third (MSC50%), and the fourth (MSC100%) groups were fed on 25%, 50% and 100% MSC by replacing SBM in CM respectively. Results revealed that MSC50% increased ($P \leq 0.05$) most of nutritive values and digestibility compared with the tested groups. Also, MSC50% reduced ($P \leq 0.05$) feed conversion of dry matter (DM), total digestible nutrient (TDN) and digestible energy (DE) compared to the tested groups. Also, MSC50% increased the total weight gain and net revenue by 13.50% and 22.75%, respectively, compared to control. While MSC100% lowered the total weight gain and net revenue by -7.67% and -4.20%, respectively, compared to control. Total protein and glucose were



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increased ($P \leq 0.05$) by rations with 25% and 50% MSC compared with MSC (0% and 100%). Moreover, adding MSC to animals' rations at different levels improved most of blood metabolites compared to control. Conclusion, moringa seed cake can be used as an alternative protein source to soybean meal in fattening calves rations at level up to 50% to improve growth performance and net profit without adverse effects.

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