Milk composition of dairy goat fed with de-stoned olive cake silages

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As an agro-industrial by-product, olive cake (OC) presents high potential as ruminant feedstuff, considering both widespread feed shortages and its increasing production. Effective technologies used for reducing kernel level allow OC to use it more efficiently in ruminant nutrition. Together with lower kernel level, the remaining oil after extraction process makes the OC a valuable feedstuff for improving ruminant performance and product quality. Therefore, the present study was carried out to test the feeding value olive cake silage (OCS) after effective and applicable de-stoning process for lactating dairy goat. The OC de-stoned in fresh form by using 3.5 mm sieve and was ensiled directly in 120 l drums equipped with a lid that enables the release of the fermentation gases. A total of 18 Saanen crossbred goats (late lactation) divided into three groups and were individually fed total mixed ration (TMR) that contains OCS at DM proportions of 0.0 (C), 0.10 (OC10) and 0.20 (OC20). The TMRs contained 70% forage and were isonitrogenous. The experiment continued for three weeks after 12 d adaptation period. Performance and milk composition were determined in the first and the last week of feeding trial. The data were analyzed in a completely randomized design using a model that accounted for the main effects of sampling time and the level OCS used in factorial arrangement. Apparent digestibility of ration's crude protein, ether extract and NDF were increased in each increment of the OCS. Goats fed OC10 had lower ($P<0.05$) dry matter intake than the C group. The ECM yield of Goat offered C, OC10 and OC20 were 1.02, 1.07 and 1.10 kg/d ($P>0.05$), respectively. Inclusion of OCS in the diets at higher ratio increased ($P<0.05$) milk fat by approximately 16% (3.7 vs 4.4%). The results indicated that using two-phase de-stoned OCS at a level that could be considered high for lactating ruminant does not cause any detrimental effect on intake of Goats, but considerably increases the milk fat.

Diet supplementation with 18:0 does not alleviate fish oil-induced milk fat depression in dairy ewes

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The supplementation of ewe diet with fish oil (FO) may improve the fatty acid (FA) profile of milk but induces milk fat depression (MFD). This latter effect has been associated with a shortage of 18:0 for mammary cis-9 18:1 endogenous synthesis and its possible impact on the maintenance of milk fat fluidity. On this basis, this study was conducted to test the hypothesis that supplemental 18:0 would alleviate FO-induced MFD in sheep. The assay followed a 3×3 Latin square design (4 animals/group) with 3 periods of 4 weeks each and 3 experimental diets: non-supplemented (control), and supplemented with 2% FO (FO) or with 2% FO plus 2% 18:0 (FOSA). Diets were offered *ad libitum*, and milk production and composition (including a complete FA profile) were analyzed on the last 3 days of each period. At the end of the trial, the digestibility of additional 18:0 was estimated using 6 lactating sheep. Milk yield was not affected by the inclusion of fish oil in the diet ($P>0.10$), despite supplementation with FO alone tended to decrease feed intake ($P<0.10$). However, both FO and FOSA, compared with the control, reduced milk fat content in a similar proportion (20%; $P<0.05$), which suggests that the addition of stearic acid does not alleviate FO-induced MFD. Additional 18:0 showed a relatively low digestibility coefficient but this data does not seem enough to fully explain the negative results, because the decrease in milk cis-9 18:1 concentration linked to dietary marine lipids was partially compensated by this supplement. It is therefore hypothesized that variations in other metabolites (such as odd- and branched-chain and biohydrogenation-derived FA) might contribute to explain the unsuccessful response to the addition of 18:0.

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