

RICERCHE EFFETTUATE

IGIENE DEGLI ALIMENTI AD USO ZOOTECNICO

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Enrichment in n — 3 fatty acids of goat's colostrum and milk by maternal fish oil supplementation

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Long-chain n — 3 polyunsaturated fatty acids (PUFAs), particularly docosahexaenoic acid (DHA), have been shown to be essential during perinatal growth and development of mammals. The study was conducted to determine whether the inclusion of fish oil in dairy goats diet during late gestation and early lactation would increase the proportion of n — 3 PUFAs in colostrum and mature milk. From 3 weeks before kidding throughout 42 days of lactation, 14 dairy goats were fed either a control diet or a diet containing 1.1 % fish oil (FO). Dietary treatment did not affect main components of colostrum, but lowered percentages of fat and lactose in mature milk. In colostrum, FO supplementation lowered the proportions of C18:0, C18:2, C18:3 and elevated those of C16:1 and very long-chain n — 3 PUFAs, mainly EPA (eicosapentaenoic acid) and DHA. In mature milk, FO supplementation lowered the proportion of C 18:0 and raised C 16:1 and n — 3 PUFAs (C18:3,EPA and DHA). Estimated transfer efficiencies for EPA and DHA into mature milk were 14 and 7%, respectively. Results suggest that goat's colostrum and milk can be enriched in n-3 PUFAs by maternal dietary fish oil supplementation during late gestation and early lactation.