



MINISTRY OF JIHAD-E-AGRICULTURE

Agricultural Research, Education and Extension Organization
Agriculture and Natural Resources Research and Education Center
Center of Markazi

The effect of iodine supplementation on prevention of subclinical iodine deficiency and increase of sheep milk iodine in Markazi province, Iran

Research worker: Ali Reza Talebian Masoudi

Abstract

Deficiency of iodine in livestock diets is likely in most parts of the country, and this deficiency adversely affects livestock health and production. Supplementation of animals with iodine supplement can be effective in preventing iodine deficiency disorders in livestock. To investigate the effect of iodine supplementation on animal iodine status, productive and reproductive performance, an experiment was conducted with 80 ewes with a history of iodine deficiency. Animals were divided into control and experimental groups and 1.5 ml iodine supplement containing 26 g of iodine in 100 ml iodized oil (Depodine) was injected intramuscularly three weeks before mating. The injection was repeated three months later (9 weeks after mating). Thyroid hormone concentrations including T₃, T₄ every two months, blood serum inorganic iodine, monthly and milk iodine of ewes after lambing were measured. Lamb birth and weaning weight, lambing rate, lamb weaned rate, and lamb mortality from birth to weaning were recorded and compared between control and experimental groups. Concentration of triiodothyronine and thyroxine increased in experimental group after supplementation ($P < 0.05$). In addition, serum iodine and milk iodine concentrations also increased significantly in this group ($P < 0.01$). In this experiment, birth weight, weaning weight and lamb survival rate up to weaning increased by supplementation ($P < 0.05$) while lambing rate, weaning rate and litter size were not significantly different. The results showed that iodine supplementation can be effective in preventing the iodine deficiency disorders in ewes and its application improved some of the productive and reproductive traits in iodine deficient sheep.

Keywords: Iodine deficiency, ewe, Thyroid hormones, production, reproduction.