Sheep breeding has always been of great importance in the economy of Turkey and in the nutrition of people. There are a lot of local sheep breeds in Turkey. Many breeds are double or triple purpose breeds unspecialised for any one type of production. The Karayaka, a native sheep breed, is raised under adverse conditions in the Black Sea region and make up approximately 3% of sheep population in Turkey. Karayaka breed has a major impact on sheep meat production in Turkey. It is preferred by consumers because of taste of its meat. The Karayaka population has been decreasing in recent years, and effective procedures must be applied for the preservation of the valuable genetic patrimony. Genetic resource banks are used combination with reproductive technologies for the conservation of endangered species. In the present study, testes dimensions and spermatologic parameters of 10 Karayaka rams localized in Ankara were determined. From each ram, 10 ejaculates were collected twice a week using artificial vagina during February and March in 2008. Ejaculates were evaluated for volume, motility, concentration, abnormal sperm, dead sperm, HOS test and pH. Moreover, morphometric sizes of testes of the rams were also recorded at two-week intervals. The average scrotal circumference, volume, thickness, testis length and diameter were found as 29.80±1.08 cm, 573.70±25.66 ml, 0.57±0.01 cm, 12.31±0.48 cm, 5.90±0.18 cm resp. The spermatological parameters of samples were as following: Ejaculate volume 0.98±0.08 ml, spermatozoa motility 79.35±0.88 %, spermatozoa concentration 3653.16±179 x10⁹/ml, percentage of abnormal spermatozoa 10.99±0.58 %, percentage of dead spermatozoa 13.35±0.63 %, HOS test 75.84±1.16 % and pH 6.92±0.04 were determined. In conclusion, this is the first which was carried out in Karayaka rams. It was confirmed that the testes dimensions and spermatologic parameters of a local breed.