INTRODUCTION

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Endocrinology and reproductive physiology have been rapidly growing areas in the broad field of domestic animal physiology. From the physiological point of view, the main purposes of the animal industry are to develop an animal which will grow and reproduce at a fast and economical rate. Since the growth and reproductive processes are for the most part under endocrine control, it follows that these two areas of physicology are becoming increasingly important to those concerned with growth and reproduction of domestic animal.

In addition the genetic make up of the individual affects growth and development and especially reproduction. With recent advances in understanding the biochemical mechanism by which heredity is manifested, it is known that the phenotypic characteristics of the individual are only manifestations of this biochemical coding which is present in the DNA of the genes. The DNA make up was found to be able to dictate the kind of function and the level of function that an endocrine organ carries out.

Land (1974), reported that, variation in the reproductive performance of sheep arises from several

sources. Reproductive performance may be described in husbandry terms by the number of lambs produced per pregnancy and by proportion of the flock which is both sexually mature and reproductively active. Improvements in one or both of these components would lead to improvements in the flock performance. In addition, the development of the reproductive function in the lamb is a general process beginning early in the fetal life (Mauleon, 1978).

Abundant information has been published in the last 10-15 years on the physiology of puberty in the sheep, underlining the complex interaction between the hypothalmus, anterior pituitary and gonads (Pelletier et al., 1981; Quirke et al., 1983; Foster et al., 1985 and Hochereau-de Reviers et al., 1985).

Special attention has been paid to the hormonal control of pubertal development and reproductive efficiency in sheep aiming to improve the reproductive performance. Hormonal survay of a given breed of sheep is considered the first step towards any genetic improvement in the reproductive performance. This may enable the breeder to understand the hormonal reason for any insufficeincy in the reproductive efficency and correspondingly select animals according

to the actual physiological base. This is more efficient than any phenotypic characters which may be of low accuracy in the process of selection and thus may delay the improvement in the reproductive performance.

Thus, the present work was planned to detect the estrogen pattern in one of the most famous breed of sheep "Ossimi" throughout the various stages of the reproductive process. This may enable to point out the hormonal reason for the "relative" poor reproductive performance. This may enable to recommend a hormonal base for selection in any breeding programe aiming to improve the reproductive performance of this breed.