Some physiological aspects related to the productive and reproductive in sheep

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The present study was carried out at SheepExperimental Farm, Department of Animal Production,FaCulty of Agriculture, Zagazig University (BenhaBranch). Radioimmunological assays for plasma estrogenwere performed in laboratories of the EndocrinologyResearch Unit, Atomic Energy Establishment.It was aimed to detect plasma estrogen patternin Ossimi sheep during different stages of estruscycle, pregnancy period and 60 days postpartum periodin ewes of different ages, parities and body weights.The study was performed on 63 Ossimi ewes,which were sUbjected to normal husbandary systemapplied at the station.Hormonal assay was carried out at differentstages of estrous cycle, at IO!!!., 40!!!., 70!!!., IOO!!!.and 130!!!. days of pregnancy period and at lambingday and at the 10lh, 30lh and 60th days afterparturition in ewes of different ages, parities andbody weight.In addition assay was performed atthe same periods in ewes having different types ofbirth (Single or twins) and different Sex of embryo(male or female).RESULTS OBTAINED COULD BB SUMMARIZED AS FOLLOWS:1- Plasma Estrogen Level At Different Stages OfEstrous Cycle:1- Exceptbirth,the ewe's body weight and the type ofwhich showed significant (P<O.Ol) effecton plasma estrogen level during estrous cycle,other studied factors had no significant effecton this trait.2- There was'nt any significant variation in plasmaestrogen level due to estrous cycle stage.Which may indicate the absence of the feedbackoscillation of hypothalamic-hypophyseal- ovariansystem. This may be the main physiologicalreason explaining the 'relative' low productivityin Ossimi sheep.3- No significant interaction effect was foundbetween any of the factors studied and estrouscycle intervals.4- Analysis of variance for the data of ewes havingirregular estrous cycle, didsignificant variation in plasmanot show anyestrogen leveldue to the parity number, successive estrusphases and the interaction between them•5- The first degree equation of regression was-158not found to be the form of the best fittingcurve for predicting the level of estrogenduring estrous cycle.6- The coefficients of correlation between plasmaestrogen level and time intervals throughoutthe estrous cycle in ewes of l~, 2~,3-rd and 4!h parities were,0.075, 0.164, 0.109and 0.022, respectively.II- Plasma Estrogen Level During 130 Days OfPregnancy Period:1- Any of the factors studied had significanteffect on the level of plasma estrogen levelduring the pregnancy period. This indicatesthat estrogen levels in plasma of the pregnantewes along the pregnancy period is a resultof hormonal activity of either hYPothalamusor pituitary gland rather than any other factor.2- Gradual and continuous rise in the level ofplasma estrogen was observed in all experimentalgroups of ewes. Variation in plasma estrogenlevel during various intervals of pregnancyperiod Was found to be significant (P<O.OlJin all groups.3- The interactions between each of the factorsstudied and intervals of pregnancy period werefound to be of no significant effect on thelevel of plasma estrogen.4- The linear regression equation was found tobe the form of the best fitting curve for predictingthe level of estrogen in any date duringpregnancy.5- The coefficients of correlation betwe"m plasmaestrogen level and time intervals throughoutthe pregnancy period in ewes of nulr , first,second, third and fourth parities were, 0.783,0.634, 0.692, 0.581 and 0.676, resPectively.6- Gestation period averaged 151.68 days whichwas not affected by any factor studied. Onthe other hand, average of birth weight ofnew born lambs was found to be 3.27 kg. Partialregression coefficient indecated that for Oneday increase in gestation length, there isan increase of 0.06 kg.111- Plas:ma Estroqen Level Along 60 Days Of ThePostpartum Period.1- Any of

the factors studied had· significanteffect on level of plasma estrogen level along60 days of the postpartum period.2- In all experimental groups of ewe's plasmaestrogen level was relatively higher at lambingday, then gradually decreased towards the 60!!!.day after lambing. Variations in this traitdue to the postpartum intervals of estimationwas found to be significant (P<O.Ol).3- The interaction between each of the studiedfactor and intervals of estimation was foundto have insignificant effect on the level ofplasma estrogen along the 60 days of postpartumperiod.4- The linear regression equation was fOund tobe the form of the best fitting curve for predictingthe level of estrogen in any intervalsduring the postpartum period.5- The coefficients of correlation between plasmaestrogen level and time intervals throughoutthe postpartum period were -0.450, -0.504,-0.563, -0.418 in ewes of the 1st, 2m!, 3!1!and 4th parities, respectively.