

CONTENTS

	PAGE
1 - INTRODUCTION	1
2- REVIEW OF LITERATURE	3
2.1.- General Aspects of Ovulation in Rabbits.	3
2.2.- Mechanism of ovulation.	4
2.3.- Hormonal activity before and during ovulation.	10
2.3.1.- Pituitary gonadotropins.	11
2.3.2.- Prolactin-gonadotrophic sexual hormone relationship.	12
2.3.3.- Ovarian steroids involved in ovulation	14
2.3.4.- Prostaglandins and Histamine role in Ovulation.	17
2.3.4.1.- Prostaglandins.	17
2.3.4.2 . Histamine .	20
2.4.- Neuroendocrine control of ovulation in rabbits.	21
2.5.- Ovulatory Physical activity.	28
2.5.1.- Ovarian contractility underlying follicular rupture.	28
2.5.2.- Ovarian proteolytic enzymes.	30
2.6.- Endocrinology of luteinization and corpus luteum regression.	32
2.6.1.- General concept.	32
2.6.2.- Control of luteal function.	33
2.6.3.- Maintenance of luteal function.	34
2.6.4.- Luteal Regression.	35
2.7.- Thyroid role in reproduction.	37
3- MATERIAL AND METHODS	41
3.1- Management of the experimental animals.	42
3.2.- Source of the applied materials.	46
3.3.- Blood sampling for hormonal assays.	48
3.4.- Parameters estimated.	49
3.4.1.- Radioimmunoassay of hormones under investigation.	49
3.4.2- Buffer composition.	49
3.4.3- Estradiol Radioimmunoassay.	50
3.4.3.1.- Materials.	51
3.4.3.2.- Preparation of <u>Estradiol - 3 - Hemisuccinate</u> (Ez-3 - HS).	52
3.4.3.3.- Preparation of <u>17β - Estradiol-3 - HS. BSA</u> (Ez - 3 - HS. BSA).	55
3.4.3.4 Immunization.	57
3.4.3.5. Radioimmunoassay procedure.	65
3.4.3.6 Calculation of the results.	68
3.4.4. " <u>Progesterone radioimmunoassay</u> "	70
3.4.4.1.. Radioimmunoassay procedure .	71
3.4.4.2. Calculation of the results .	74
3.4.5. <u>Triiodothyronin (T₃) radioimmunoassay.</u>	78
3.4.6.- " <u>Tetraiodothyronine (T₄) Radioimmunoassay</u> ".	80

3.4.7.- Statistical analysis.	83
4- RESULTS AND DISCUSSION	85
4.1.- Steroid mechanism during normal pregnancy.	85
4.2. Mating steroid levels effect on litter size.	89
4.3.- Litter size interaction with steroid secretion during pregnancy.	92
4.4. Ovulation induction (First experiment).	99
4.4.1. Thyroid hormones in blood serum.	99
4.4.2. Levels of ovarian hormones in serum (estradiol and progesterone).	109
4.5. Prolactin inhibiting effect (Second experiment).	119
4.5.1. Serum levels of thyroid hormones.	119
4.5.2.- Serum level of ovarian sexual hormones.	122
4.6. The effect of increasing serum estradiol level.	131
4.6.1. Serum thyroid hormones levels .	131
4.6.2. Serum levels of estradiol and progesterone.	139
4.7.- Effect of prolactin inhibition with or without ovarian sexual hormone stimulation by HCG as compared with the effect of HCG injection.	146
4.7.1.- Serum thyroid hormones.	152
4.7.2.- Serum levels of estradiol and progesterone.	161
4.8.- Increasing serum level of estradiol with or without HCG injection (Experiment five).	164
4.8.1.- Thyroid hormones concentrations in blood serum of various experimental groups.	164
4.8.2.- Serum levels of estradiol (E ₂) and progesterone (P ₄).	179
4.9.- Studying the combined effect of gonadotropin, antiprolactin (Bromocryptine) and antiprostaglandin (Indomethacin) on serum levels of thyroid and sex ovarian hormones. (Experiment six).	182
4.9.1.- Serum levels of thyroid hormones.	188
4.9.2.- Serum level of ovarian steroid hormones.	194
4.10.- Effect of Human chorionic gonadotropin (HCG) either alone or with Indomethacin (Prostaglandine inhibitor) (Experiment Seven).	210
4.10.1.- Effect on thyroid hormones T ₃ and T ₄ .	210
4.10.2. Serum levels of estradiol (E ₂) and progesterone (P ₄):	213
5- SUMMARY	228
I- Validation of radioimmunoassay techniques.	228
II- Preliminary study.	229
III- Ovarian interaction with thyroid function.	230
REFERENCES	235
ARABIC SUMMARY	