

Contentes

Abstract	XXI
Resumen	XXVII
Resum	XXXIII
Chapter 1.Literature review	1
1.1 Rabbit production	2
1.2 Genetic improvement in rabbits	3
1.3 Selection of maternal lines	5
1.3.1 Direct selection	5
1.3.2 Indirect selection	6
1.3.3 Direct response for litter size	7
1.3.4 Correlated responses in litter size	8
1.4 Long-term selection and inbreeding	9
1.4.1 Calculate the old and new inbreeding for population	12
1.5 Crossbreeding	13
1.5.1 Analysis of crossbreeding experiments	16
1.6 Genetic parameters of litter size.....	18
1.6.1 Heritability and repeatability	18
1.6.2 Genetic correlation with other traits	19
1.6.3 Inbreeding depression	22
1.6.4 Heterosis effect	23
1.7 Litter size components	24
1.7.1 Heritability	26
1.7.2 Genetic correlation with other traits	27
1.7.3 Inbreeding depression	27
1.7.4 Heterosis effect	28
1.8 Functional longevity	28
1.8.1 Economic importance of longevity	29
1.8.2 Difficulties of longevity study	30
1.8.3 Variability and heritability within lines	31
1.8.4 Relationship with other traits	32
1.8.5 Heterosis	32

1.8.6 Variability between breeds or lines and heterosis	33
1.9 Genetic parameters of kindling interval	34
1.9.1 Genetic variability	34
1.10 Commercial maternal lines	35
1.11 References	38
Chapter 2. Objectives.....	53
Chapter 3. A Comparison of reproductive traits of four maternal lines of rabbits selected for litter size at weaning and founded on different criteria	55
3.1 Abstract	55
3.2 Introduction	57
3.3 Material and methods	58
3.3.1 Animals.....	58
3.3.2 Traits	59
3.3.3 Statistical analysis	60
3.3.4 Comparison of lines at their foundation.	61
3.3.5 Comparison of lines at fixed times and locations (observed and expected differences)	62
3.4 Results and discussion	63
3.4.1 Descriptive statistics	63
3.4.2 Contrasts between lines at their foundation	65
3.4.3 Contrasts between lines at fixed locations and times	67
3.5 Conclusions	69
3.6 Acknowledgements	69
3.7 References	69
Chapter 4. Effective population size and inbreeding depression on litter size in rabbits. A case study	73
4.1 Abstract	73
4.2 Introduction	74
4.3 Materials and Methods	75
4.3.1 Animals and traits	75
4.3.2 Inbreeding computation	76
4.3.3 Partition of inbreeding (old, intermediate and new)	76
4.3.4 Effective population size	77
4.3.5 The effect of old, intermediate and new inbreeding on litter traits.	78
4.4 Results and discussion	79
4.4.1 The effective population size.	79
4.4.2 The effect of the old, intermediate and new inbreeding.	81

4.5 Conclusions	83
4.6 References	84
Chapter 5. Litter size components in a diallel cross of four maternal lines of rabbits	87
5.1 Abstract	87
5.2 Introduction	88
5.3 Materials and Methods	89
5.3.1 Animals and Management	89
5.3.2 Traits and Statistical analyses	90
5.4 Results and Discussion	92
5.5 Conclusions	98
5.6 References	98
Chapter 6. Reproduction traits in a diallel cross of four maternal lines of rabbits	101
6.1 Abstract	101
6.2 Introduction	102
6.3 Materials and Methods	104
6.3.1 Animals and Management	104
6.3.2 Traits and Statistical analyses	105
6.4 Results and Discussions	106
6.5 Conclusions	112
6.6 References	112
Chapter 7. Functional longevity in a diallel cross of four maternal lines of rabbits.	117
7.1 Abstract	117
7.2 Introduction	118
7.3 Materials and Methods	120
7.3.1 Animals and Management	120
7.3.2 Statistical analyses	121
7.4 Results and Discussion	123
7.5 Conclusions	129
7.6 References	129
Chapter 8. General Discussion	131
References	140
Chapter 9. Final conclusions	143