

Index

Introduction	1
1. <i>Do we have a sustainable meat rabbit industry?</i>	2
2. <i>Development of rabbit's digestive system</i>	3
3. <i>Dietary strategies targeting better digestive health in rabbits</i>	6
3.1 Feed intake regulation: feed restriction	6
3.2 Feeding strategies	7
3.2.1 Limitation of the protein intake.....	9
3.2.2 Insoluble and soluble fibre solutions	10
4. <i>Alternative dietary strategies</i>	12
4.1. Enzymes	13
4.2 Organic acids	14
4.3 Probiotics.....	16
4.4 Prebiotics	16
5. <i>Fenugreek seed gum: Galactomannan</i>	19
References	20
Objectives	34
Chapter I	36
Preliminary evaluation of fenugreek (<i>Trigonella foenum-graecum</i>) seed gum as a potential prebiotic for growing rabbits in Tunisia: effects on <i>in vivo</i> faecal digestibility and <i>in vitro</i> fermentation	36
Abstract	37
Introduction.....	38
Materials and methods	39
Results.....	45
Discussion	48
Conclusion.....	51
Acknowledgements.....	51
References	51
Chapter II	56
Characterisation and <i>in vitro</i> evaluation of fenugreek (<i>Trigonella foenum-graecum</i>) seed gum as a potential prebiotic in growing rabbit nutrition.	56
Abstract.....	57
Introduction.....	57

<i>Materials and Methods</i>	59
<i>Results</i>	67
<i>Discussion</i>	73
<i>Conclusions</i>	77
<i>Acknowledgments</i>	78
<i>References</i>	78
Chapter III	84
Effect of fenugreek seed gum dietary supply in conventional rabbit diet and low digestive risk diet on <i>in vivo</i> performance, nutrient digestibility and caecal environment of growing rabbits	84
<i>Abstract</i>	85
<i>Implications</i>	86
<i>Introduction</i>	86
<i>Materials and methods</i>	88
<i>Results</i>	92
<i>Discussion</i>	95
<i>Conclusion</i>	100
<i>Acknowledgements</i>	100
<i>References</i>	101
General discussion	106
Perspectives	117
Dissemination of Results and Predoctoral Stay	119

List of Tables (short description)

Table 1.1 Chemical composition of the experimental diets (Chapter I).....	40
Table 1.2. Feed intake and apparent faecal digestibility coefficients of nutrients.	45
Table 1.3. Caecal fermentation parameters of diets (Chapter I).....	46
Table 1.4. Gas production parameters and some <i>in vitro</i> traits of diets and FSG.....	47
Table 2.1. Ingredients and chemical composition of the diets. (Chapter II).....	62
Table 2.2. Chemical composition of fenugreek gum. (Chapter II).....	68
Table 2.3. Effect of urea on gas production kinetics of fenugreek seed gum.....	69
Table 2.4. Pepsin and pancreatin digestion of the diets and FSG (Chapter II)	69
Table 2.5. Caecal fermentation of the indigestible fractions of the diet and FSG	72
Table 3.1. Ingredients and chemical composition of the experimental diets.	91
Table 3.2. Mortality, morbidity rate and health risk index of the growing rabbits.	93
Table 3.3. Nutrients digestibility of growing rabbits (Chapter III).....	93
Table 3.5. Caecal traits of growing rabbits at 63 day of age.	94

List of figures (Short description)

Figure 1.1. Evolution of gas production during the <i>in vitro</i> incubation of FSG (Chapter I)	48
Figure 2.1. Digested fractions and fermented fractions of diets: SF, IF and FSG (Chapter II)	70
Figure 2.2. Starch, crude protein and neutral detergent fibre content on the indigestible fractions of diets (SF and IF) (Chapter II).....	71
Figure 3.1. Growth performances of rabbits during the experimental time (Chapter III)	96