

Thesis Index

ACKNOWLEDGEMENT	3
SUMMARIES	6
Summary	6
Resumen	8
Resum	10
ABBREVIATIONS	13
INTRODCUTION	18
Plant biotechnology	18
Plant viruses “beneficial biotools”	19
Plant virus-derived vectors	21
Potyvirus expression vectors	22
Watermelon mosaic virus	23
Zucchini yellow mosaic virus	24
The family Cucurbitaceae	26
Virus-induced gene silencing and the dynamic process of systemic silencing	26
Carotenoids biosynthesis and advances in metabolic engineering	31
OBJECTIVES	36
CHAPTER I	40
Abstract	40
Introduction	40
Materials and methods	42
Results	46
Discussion	53
Acknowledgements	55
References	56
Supplementary material	60
CHAPTER II	69
Summary	69
Introduction	69
Materials and Methods	70
Results and Discussion	72
Conclusion	81
Acknowledgements	82
References	82
Supplementary Material	85
GENERAL DISCUSSION	88
CONCLUSIONS	93
BIBILIOGRAPHY	97