

## Table of contents

<i>Summary</i> .....	i
<i>Resumen</i> .....	iv
<i>Resum</i> .....	vii
<b>Chapter 1. Introduction</b> .....	1
<b>1.1. The California red scale</b> .....	3
1.1.1. Systematic classification.....	4
1.1.2. Injurious effects of <i>Aonidiella aurantii</i> .....	4
1.1.3. Life history.....	7
1.1.4. Life cycle .....	10
1.1.5. Distribution.....	11
1.1.6. Integrated pest management .....	13
<b>1.2. Biological control of <i>A. aurantii</i></b> .....	15
1.2.1. Classification of parasitoids.....	16
1.2.2. Ectoparasitoids of <i>A. aurantii</i> : <i>Aphytis</i> Howard .....	18
1.2.2.1. Life history of <i>Aphytis</i> .....	19
1.2.2.2. Host-feeding.....	21
1.2.2.3. Main <i>Aphytis</i> species parasitizing <i>A. aurantii</i> .....	22
1.2.3. Endoparasitoids of <i>A. aurantii</i> . .....	26
1.2.4. Predators of <i>A. aurantii</i> . .....	33
1.2.4.1. Coleoptera predators .....	33
1.2.4.2. Other genera of predators.....	36
1.2.5. Natural enemies of CRS parasitoids. ....	38
<b>1.3. Literature cited</b> .....	40
<b>Chapter 2. Justification and objectives</b> .....	59
<b>Chapter 3. Materials and methods</b> .....	65
<b>Chapter 4. Article: Parasitoid competitive displacement and coexistence in citrus agroecosystems: linking species distribution with climate</b> .....	79
4.1. Introduction.....	82

4.2. The study system .....	83
4.3. Background data .....	84
4.4. Materials and methods .....	86
4.5. Results.....	90
4.6. Discussion.....	97
4.7. Literature cited.....	102
<b>Chapter 5. Article: Comparative efficacy of different combinations of natural enemies for the biological control of California red scale in citrus groves</b>	<b>109</b>
5.1. Introduction.....	112
5.2. Materials and methods .....	114
5.3. Results.....	118
5.4. Discussion.....	124
5.5. Literature cited.....	127
<b>Chapter 6. Article: Effects of climate on the introduction, distribution and biotic potential of parasitoids: Applications to biological control of California red scale.....</b>	<b>131</b>
6.1. Introduction.....	134
6.2. Materials and methods .....	138
6.3. Results.....	143
6.4. Discussion.....	151
6.5. Literature cited.....	156
<b>Chapter 7. General discussion .....</b>	<b>163</b>
<b>Chapter 8. Conclusions .....</b>	<b>171</b>