

CONTENTS

ABBREVIATIONS	V
LIST OF TABLES.....	VIII
LIST OF FIGURES.....	IX
SUMMARY	XII
ZUSAMMENFASSUNG.....	XIV
1 INTRODUCTION	1
1.1 Parasitic Plants	1
1.1.1 Evolution and Classification of Parasitic Plants	1
1.1.2 Agronomic Impact	4
1.2 The Haustorium.....	5
1.2.1 Stage I: Host Recognition and Protohaustorium Formation	5
1.2.2 Stage II: Development of Mature Haustoria	8
1.2.3 Stage III: Haustorium Regulation and Functions during Late Stages of Parasitism.....	10
1.3 Mobile Signals in Haustorium Formation and the Development of Other Plant Organs	13
1.3.1 Lateral Root Formation.....	13

1.3.2	Autoregulation of Nodulation	15
1.3.3	Root-Knot, Cyst, and Gall Formation in Response to Pathogen Infection	17
1.4	Aims of the Study	19
2	RESULTS	23
2.1	PjCLE3-mediated autoregulation of haustorium formation in the parasitic plant <i>Phtheirospermum japonicum</i>	23
2.2	The <i>Phtheirospermum japonicum</i> isopentenyltransferase PjIPT1a regulates host cytokinin responses in Arabidopsis	54
3	DISCUSSION	83
3.1	PjSBT1.2.3-Released PjCLE3 Acts as Mobile Signal during Early Stages of Parasitism	83
3.2	CLE Mimicry as a Potential Strategy in Late Stages of Parasitism	92
3.3	Parasite Cytokinin-Induced Host-Hypertrophy Facilitates Nutrient Acquisition in Late Stages of Parasitism	95
3.4	Research Perspectives	99
3.5	Advancement of the Research Field	100
4	SUPPLEMENTARY INFORMATION	103
5	LITERATURE	105
6	ACKNOWLEDGEMENTS	137

AFFIDAVIT	139
CURRICULUM VITAE	140