

## Contents

List of abbreviations	II
List of publications	V
1 Summary	1
2 Introduction	3
2.1 Barley	3
2.2 Net Blotch of Barley	7
2.3 Spot Blotch of Barley	12
2.4 Marker systems and genome-wide association studies	14
3 Aims	20
4 Genetic analysis of a worldwide barley collection for resistance to net form of net blotch disease ( <i>Pyrenophora teres</i> f. <i>teres</i> )	21
5 Genome-wide association studies in a barley diversity set reveal a limited number of loci for resistance to spot blotch	40
6 Discussion	56
6.1 Candidate genes located in regions identified for net blotch resistance	56
6.2 Resistant accessions	66
References	71
Appendix	VII
Contributions to meetings and conferences	XLVI
Acknowledgement	XLVIII
Erklärung	XLIX