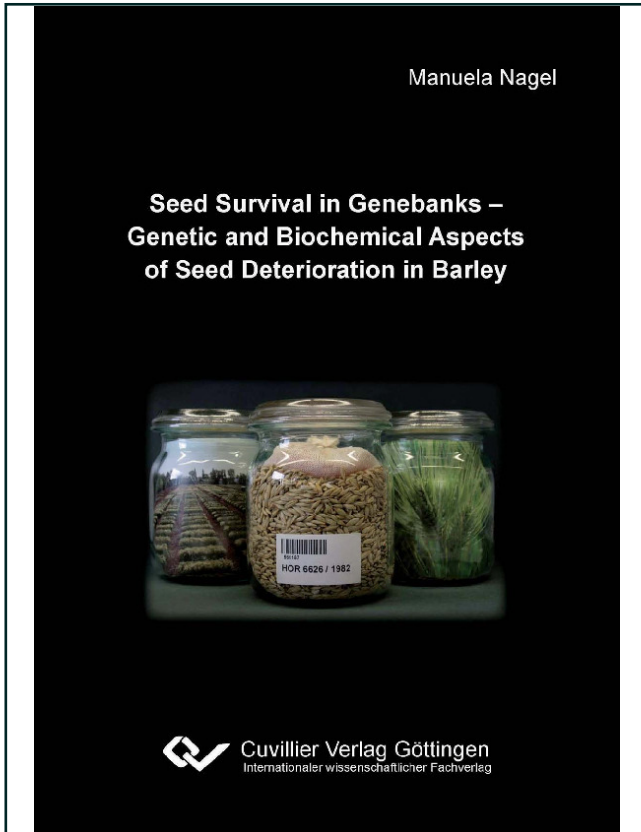




Manuela Nagel (Autor)

## **Seed Survival in Genebanks - Genetic and Biochemical Aspects of Seed Deterioration in Barley**



<https://cuvillier.de/de/shop/publications/243>

Copyright:

Cuvillier Verlag, Inhaberin Annette Jentsch-Cuvillier, Nonnenstieg 8, 37075 Göttingen, Germany

Telefon: +49 (0)551 54724-0, E-Mail: [info@cuvillier.de](mailto:info@cuvillier.de), Website: <https://cuvillier.de>

# Structure

List of abbreviations .....	I
1 Prolog .....	1
1.1 Orthodox seeds - survival in a dry state .....	1
1.1.1 Evolutional aspects of seeds .....	1
1.1.2 Glassy state.....	2
1.1.3 Oxidative stress and seed protection mechanisms .....	4
1.1.4 Programmed Cell Death (PCD) .....	8
1.1.5 Dormancy .....	10
1.1.6 Seed coat .....	12
1.2 Genebanks and plant genetic resources .....	13
1.2.1 Genetic bottleneck of crops.....	13
1.2.2 The heritage of plant hunters .....	14
1.2.3 Genebanks .....	14
1.2.4 Challenges and perspectives .....	16
1.3 Barley ( <i>Hordeum vulgare</i> L.).....	17
1.4 Objectives.....	18
2 First Paper: Longevity of seeds - intraspecific differences in the Gatersleben genebank collections .....	19
3 Second Paper: Seed conservation in <i>ex situ</i> genebanks - genetic studies on longevity in barley.....	24
4 Third Paper: Genome-wide association study and biochemical indicators of seed longevity in barley .....	38
5 Epilog.....	78
5.1 Genotypic differences in seed longevity: analysis of genebank data.....	78
5.2 Genetics of seed longevity .....	82
5.3 Biochemical aspects of seed ageing .....	86
5.4 Application in genebanks and outlook .....	92
6 Summary .....	95
7 References of Prolog and Epilog .....	99
Acknowledgements/ Danksagung.....	117
<i>Curriculum vitae</i> .....	119