



Tin Aye Aye Naing (Autor)
**Rice Production in Myanmar and Effects of
Intensification on Crop Health**

Tin Aye Aye Naing

**Rice Production in Myanmar and Effects
of Intensification on Crop Health**



Cuvillier Verlag Göttingen

<https://cuvillier.de/de/shop/publications/2896>

Copyright:

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

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

TABLE OF CONTENTS

CONTENT	Pages
LIST OF TABLES	iv
LIST OF FIGURES	vi
ZUSAMMENFASSUNG	x
SUMMARY	xiii
CHAPTER 1	
Rice production in Myanmar and research questions to be addressed in this study	1
1.1. The country	1
1.2. Goals of rice production in Myanmar	1
1.3. Constraints to rice production	2
1.4. Questions to be addressed	5
1.5. References	6
CHAPTER 2	
Literature review	7
2.1. Rice cropping systems	7
2.1.1. Rainfed lowland rice	8
2.1.2. Irrigated lowland rice	9
2.1.3. Upland rice	9
2.1.4. Deepwater rice	10
2.2. Factors affecting rice yields	10
2.2.1. Climate	10
2.2.2. Nutrition	11
2.2.3. Insect pests and pest control	14
2.2.3.1. Important insect pests	14
2.2.3.2. Control of insect pests	17
2.2.4. Diseases and their control	21
2.2.4.1. Important rice diseases	21
2.2.4.2. Control measures for diseases	28
2.2.5. Weeds and weed control	29
2.3. Concluding remarks	31
2.4. References	33

CHAPTER 3

Biotic and abiotic factors affecting rice production in Myanmar	42
3.1. Introduction	42
3.2. Materials and methods	43
3.2.1. Selection of farmers	43
3.2.2. Sampling pattern and methods of assessment	46
3.2.3. Yield measurements	47
3.2.4. Data analysis and processing	47
3.3. Results	48
3.3.1. Weather conditions of the survey areas	48
3.3.2. Reliability and time dependency of the survey data	49
2.3.3. General conditions in the surveyed areas	50
3.3.4. Fertilizer inputs	52
3.3.5. Diseases and insect pests	56
3.3.6. Yields	60
3.4. Discussion	65
3.5. References	70

CHAPTER 4

Effects of intensification on rice health	72
4.1. Introduction	72
4.2. Materials and methods	73
4.2.1. Experimental sites	73
4.2.2. Experimental design	73
4.2.3. Agronomic measures	75
4.2.4. Assessments	76
4.2.4.1. Diseases	76
4.2.4.2. Yield and yield components	77
4.2.5. Data analysis	78
4.3. Results	79
4.3.1. Climatic conditions at the two experimental sites	79
4.3.2. Diseases	80
4.3.2.1. Bacterial leaf streak (BLS)	80
4.3.2.2. Rice Blast	81
4.3.3. Interaction between diseases, crop management and yield	83
4.4. Discussion	87
4.5. References	91

CHAPTER 5	
Conclusive summary and recommendations	94
5.1. General findings	94
5.2. Recommendations	96
5.3. Final remarks	96
APPENDIX 1	
Additional data pertaining to the survey (Chapter 3)	97
APPENDIX 2	
Additional data pertaining to the field experiments at Hmawbi and Yezin (Chapter 4)	110
ACKNOWLEDGEMENTS	135
CURRICULUM VITAE	137