

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ
و قَل رَّبِّی زِدْنِی عِلْمًا
صَدَقَ اللّٰهُ الْعَظِیْمُ

Dedication

To the soul of my mother....

To my kind father

To my wife (Ekram)

and to my lovely son (Eihab)

CONTENTS

Series	Subject	Page
	DEDICATION	ii
	CONTENTS	iii
	LIST OF TABLES	vi
	LIST OF FIGURES	vii
	LIST OF PLATES	viii
	ACKNOWLEDEMENTS	ix
	ENGLISH ABSTRACT	x
	ARABIC ABSTRACT	xi
	CHAPTER ONE: INTRODUCTION	1
1.1	Seed pathology	1
1.2	Maize crop distribution & importance	2
	CHAPTER TWO: REVIEW OF LITERATURE	4
2.1	The crop	4
2.1.1.	Seed-borne fungi	6
2.1.1.1	Genus <i>Fusarium</i>	7
2.2	Diseases of <i>Zea mays</i>	8
2.2.1	Downy mildew	9
2.3	<i>Drechslera maydis</i> in maize	9
2.4	<i>Fusarium moniliforme</i> diseases in corn	9
2.5	<i>Fusarium</i> kernel rots of <i>Maize</i>	11
2.6	<i>Fusarium</i> stalk rot	11
2.7	Symptoms of <i>Fusarium</i> stalk rot of corn	12
2.8	Physiological studies on <i>Fusarium moniliforme</i>	13
2.8.1	Effect of temperature	13
2.8.2	Effect of hydrogen-ions (pH)	14
2.8.3	Effect of different media and carbon sources on growth of <i>F.</i>	
	<i>moniliforme</i>	14
2.9.	Pathogenicity of <i>Fusarium moniliforme</i>	15
2.10	Biological control	16
	CHAPTER THREE: MATERIAL AND METHODS	18
3.1	<i>Zea mays</i> samples	18
	INOCULATION METHODS	18
3.2	Detection and isolation of seed-borne fungi	18
3.2.1.	Dry inspection (visual examination)	18
3.2.2	Blotter test	18
3.2.2.1	Pre-treated seeds	18
3.2.3	Pure culture	18
3.2.4	Agar test	19
3.2.5	Soil dilution plate methods	19
3.3	Pathogenicity	20
3.3.1	Seed inoculation	20
3.3.2	Soil inoculation	20
3.4	Physiological studies on <i>Fusarium moniliforme</i>	20

3.4.1	Effect of temperature	20
3.4.2	Effect of different media and carbon sources on growth of <i>F. moniliforme</i>	21
3.5	The concentration of hydrogen – ions (pH) as an Important factor for the growth of <i>Fusarium moniliforme</i> and other fungi	21
3.6	Biological control	21
3.6.1	System using <i>Trichoderma spp</i>	21
3.6.2	<i>Proboscidea parviflora</i> , <i>Zingiber officinale</i> Rosc and <i>cinnamomum zeylanicum</i>) against <i>F. moniliforme</i>	22
	CHAPTER FOUR: THE RESULTS	24
4.1	Detection- isolation of seed-borne fungi in <i>Zea mays</i>	24
4.1.1	Dry inspection	24
4.1.2	Blotter test	24
4.1.2.1	Pre-treated seeds	24
4.1.2.2	Agar test	24
4.2	Physiological studies on <i>Fusarium moniliforme</i>	24
4.2.1	Effect of temperature	24
4.2.2	Effect of different media and carbon sources on growth of <i>F. moniliforme</i>	25
4.2.3	Effect of pH (hydrogen – ions)	25
4.3	Pathogenicity	25
4.3.1	Effect of the fungus on maize seedling stands, roots and shoots	25
4.3.2	Seed inoculation	26
4.3.3	Soil inoculation	26
4.4	Biological control	26
4.4.1	Antagonism <i>Trichoderma viridae</i>	26
4.4.2	<i>Proboscidea parviflora</i> , <i>Zingiber officinale</i> Rosc and <i>cinnamomum zeylanicum</i> against <i>F. moniliforme</i>	26
4.4.3	<i>Calotropis procera</i> and <i>Datura stramonium</i> against <i>F. moniliforme f.sp. zea mays L.</i>	
	CHAPTER FIVE: DISCUSSION	52
	REFERENCES	
	APPENDICES	

LIST OF TABLES

Table		Page
1	P Percentage incidence of different categories accompanying the seed samples	28
2	Percentage incidence of fungi detected in 4 samples of <i>Zea mays</i> by standard blotter methods 100 seeds were tested for each cultivar	28
3	Effect of temperature on linear growth of <i>F. moniliforme</i> On PDA medium (<i>Mean of 4 replicates</i>)	29
4	Effect of different media on linear growth of <i>F. moniliforme</i> (<i>Mean of 4 replicates</i>)	29
5	The concentration of hydrogen – ions (pH) as the important factor for the growth of <i>F. moniliforme</i>	30
6	Effect of <i>Proboscidea parviflora</i> on linear growth of <i>F. Moniliforme</i>	31
7	Screening of plant leaves of <i>Calotropis procera</i> and <i>Datura</i>	31

LIST OF FIGURES

Figure		Page
1	Effect of temperature on linear growth of <i>F. moniliforme</i> on PDA	33
2	Effect of different media type on linear growth <i>F. Moniliforme</i>	34
3	Effect of concentration of hydrogen-ions (pH) as the important factor of the growth of <i>F. moniliforme</i>	35
4	Effect of <i>Proboscidea parviflora</i> on linear growth of <i>F. moniliforme</i>	36

LIST OF PLATES

		Page
Plate	Dry inspection of <i>zea mays</i> seeds	
Plate 1	Dry inspection on local cultivar from ed-Damazin	37
Plate 2	Dry inspection on local cultivar from Kassala	37
Plate 3	Dry inspection on cultivar Hudaiba I certified	37
Plate 4	Dry inspection on cultivar Hudaiba II certified	37
Plate 5	Blotter test	38
Plate 6	Effect of temperature on linear growth of <i>F. moniliforme</i>	39
Plate 7	Effect of different media on linear growth of <i>F. moniliforme</i> and pure culture of <i>F. moniliforme</i> .	40
Plate 8	Effect of pH on linear growth of <i>F. moniliforme</i>	41
Plate 9	Injection using different concentration (5 ml, 10 ml, and 15 ml) between leaf sheath and stalk.	42
Plate 10	Showing effect rot caused by <i>F. moniliforme</i> revealed by artificial inoculation of the fungus.	43
Plate 11	Symptoms on <i>Maiae</i> seedlings injected by fungus suspension of <i>Fusarium moniliforme</i>	45
Plate 12	Effect of different concentrations of <i>F. moniliforme</i> in seed inoculation test.	46
Plate 13	Showing effect of different concentrations of <i>F. moniliforme</i> suspension upon seedling stand of <i>zea mays</i> .	47
Plate 14	Antagonistic of <i>Trichoderms viridae</i> against <i>F. moniliforme</i>	48
Plate 15	Effect of <i>Probscidea parviflora</i> on linear growth of <i>F.</i> <i>moniliforme</i> (MEA& PDA medium)	59
Plate 16	Effect of <i>Zingiber</i> on <i>F. moniliforme</i> infection in vivo (cultivar <i>zea mays</i> f.sp L.)	50

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ABSTRACT

Seed health testing was carried out for four cultivars of *Zea mays* according to the rules of ISTA (1966). These recommended rules were dry inspection and inoculation methods on both blotter and agar media. The blotter method proved to be suitable for detection of *Fusarium moniliforme* in the ratio of 33% on seed sample of local variety obtained from Damazin State. It was the highest percentage incidence. The incidence of the fungus was 24% in sample from Kassala while the incidence of the fungus was 15% in cultivar Hudeiba 1 (certified seed)

Other fungi detected were *Aspergillus spp*, *Drechslera maydis*, *Macrophomina phaseolina*, *Alternaria spp* and *Colletotrichum sp*.

The physiological studies on the suitable temperature for growth of *Fusarium moniliforme* proved that pH 7 was the optimum for fungus growth. The source of carbon on potato agar medium sucrose. The fungus produced both macro and microconidia in the ratio of 3 - 13% respectively.

The pathogenicity test revealed that the fungus causes seed rot and damping-off. *Drechslera maydis* as detected in the local sample of Damazin State and cultivar Hudeiba 2 (certified seed).

The suitable temperature for growth of *Fusarium moniliforme* as found to be 28 °C and the suitable medium was potato dextrose agar (PDA).

In the study extract of some plants were used as by-products for control of *Fusarium moniliforme*. These were *Proboscidea parviflora*, Ginger and Ushar (*Calotropis procera*). These by-products gave good promising results.

In the biological control of the fungus *Trichoderma viridae* was investigated . It was found to be as an effective agent against the fungus *Fusarium moniliforme*

ملخص الرسالة

أجريت إختبار صحة البذور لأربعة أصناف ذرة شامية وفقاً لقوانين المنظمة الدولية لأختبارات البذور (ISTA 1966) وذلك من خلال الطرق الموصى بها من قبل المنظمة الدولية للفحص الجاف و التحضين بإستخدام طريقة الورق النشلف أو الترشيح بالإضافة للأجار.

أثبتت طريقة الورق النشاف - الترشيح المبلل كواحدة من طرق التحضين فى الكشف عن فطر الفيوزوريوم مونلى فورم بنسبة 33% على صنف محلى عينة من ولاية الدمازين كاعلى نسبة و 24% فى العينة من كسلا بينما كانت نسبة 15% كأقل نسبة على صنف حديدية 1 (محسن). أمكن عزل فطريات أخرى مثال:

Aspergillus spp, Drechslera spp, Macrophomina phaseolina , Alternaria spp and Colletotrichum spp

أجريت بعض الدراسات الفسيولوجية مثال درجة الحرارة لتقدير مدى درجات الحرارة على نمو الفطر و من ثم معرفة درجة الحرارة المثلى. الأس الأيدروجينى الأمثل pH 7 . السكروز هو مصدر الكربون المناسب للفطر.

ينتج فطر الفيوزوريوم مونلى فورم نوعين من الكونيدات فى المتوسط 3 - 13% Macro and microconidia

إختبار أل pathogenicity أظهر تأثير الفطر فى إحداث تعفن للبذور و من ثم موت البادرات. كما تم الكشف عن فطر ديسلرا مايدس فى كل من عينة محلية من الدمازين و الحديدية 2 (certified

درجة الحرارة المثلى لنمو الفطر 28 درجة مئوية و البيئة الملائمة بيئة البطاطس.

شملت الدراسة إختبار مستخلصات بعض النباتات لمقاومة فطر الفيوزوريوم مونلى فورم مثل مخلب الشيطان و نبات الزنجبيل و العشر مكثبات لنمو الفطر.

أما فى مجال مكافحة الإحيائية إستخدم فطر *Trichoderma viridae* فى مكافحة الفطر و أعطى نتائج ممتازة.

