بسم الله الرحمن الرحيم

و قل ربي زدني علما

صدق الله العظيم

Dedication

To the soul of my mother….

To my kind father ….

To my wife (Ekram)

and to my lovely son (Eihab)

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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 *Fusariumm moniliforme* in the ratio of 33% on seed sample of local variety obtained from Damazin State . It was the heighst 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 maydie, Macrophomina phaseolina , Alternaria spp* and *colletoteichum 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 patoto 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 ^{0} 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 parvuflora,* Ginger and Ushar (*Calotropis procera*). These by – products gave good promising results.

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

ملخص الرسالة

أجرى إختبار صحة البذورلأربعة أصناف ذرة شامية وف قا ل قوانين 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% كأ قل نسبة على صنف حديية 1 (محسن). أمكن عزل فطريات أخرى مثال:

Aspergillus spp, Drechslera spp, Macrophomina phaseolina , Alterrnaria 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 الفيوزريوم 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 ديسللرا مايدس فى كل من عينة محلية من الدمازين و الحديية 2 ((certified

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

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

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