شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

STUDIES ON FORAGE CROPS IN EGYPT

By

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Thesis

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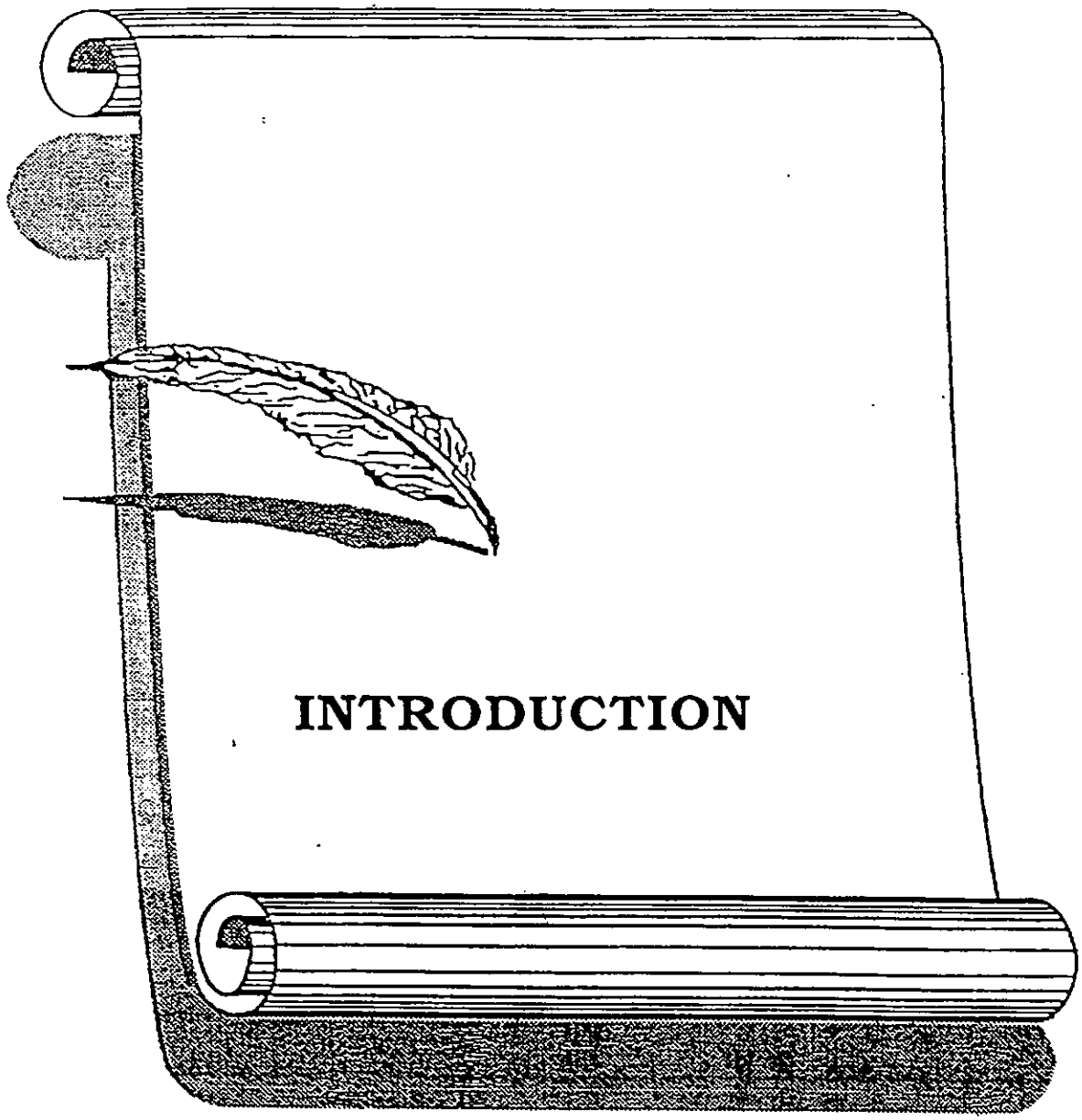

INTRODUCTION

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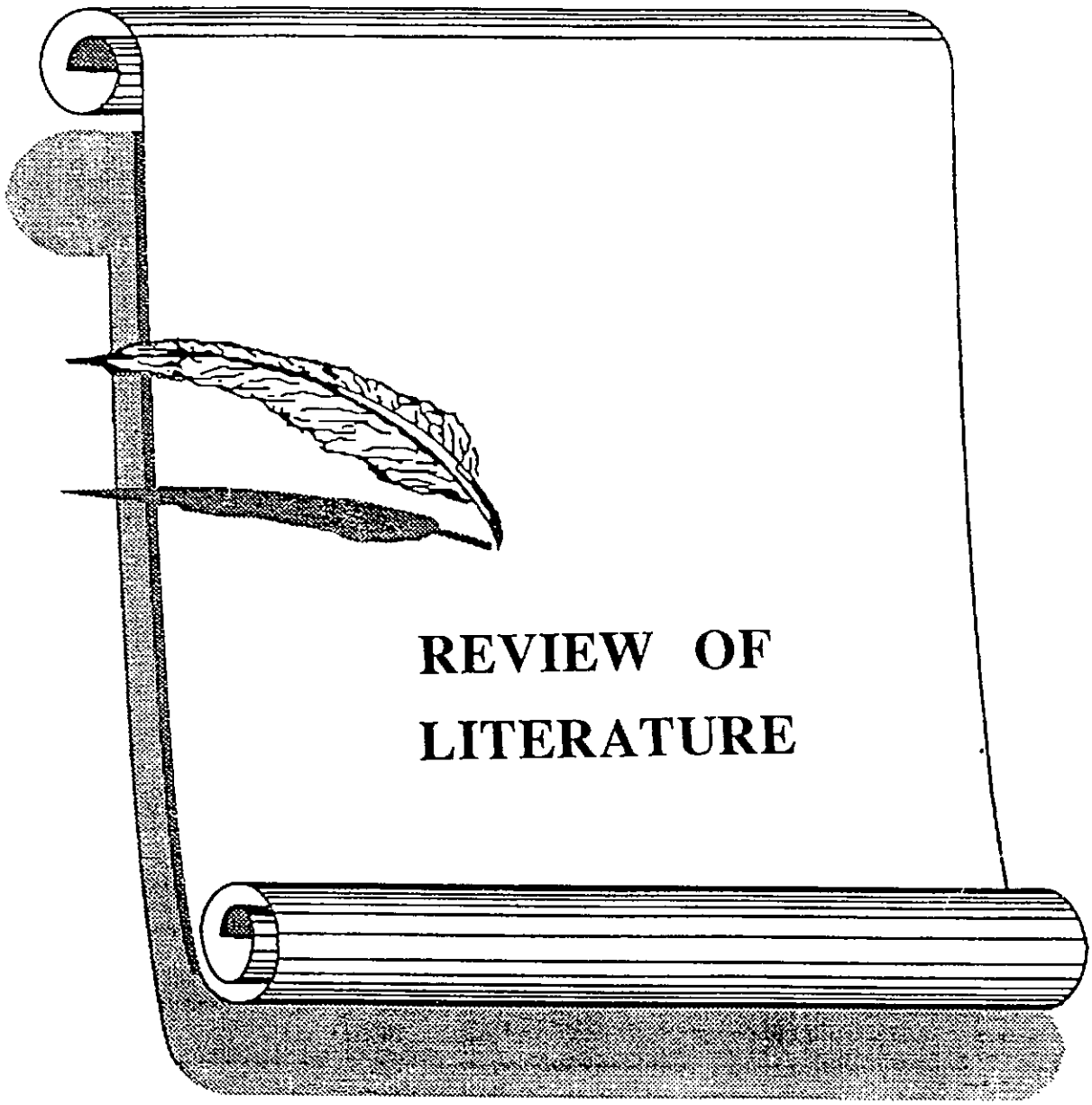
Great efforts have been oriented to increase the area occupied with forage crops as well as to develop and increase the productivity and quality, which could be gained using proper varieties and optimum practices .

It is well known that forage crops production is highly affected by many factors such as preceding crop, prevailing temperature , soil salinity, soil temperature, planting depth ------etc. So , it is necessary to manage such factors properly to achieve the yield potential .

The role of allelopathy in agriculture as well as natural ecosystems has received increased attention because of its greater effecs on germination , seedling development and the economic and marketable yields. More evidence has accumulated recently to show that many plants contain germination and growth inhibitors and show that toxic compounds are produced upon the decomposition of the crop residues in the soil .

So in the light of the above mentioned factors, the present research work was conducted to find out the extent to which germination and seedling characteristic of summer and winter forage crops were influenced .



REVIEW OF LITERATURE

REVIEW OF LITERATURE

The review of literature of this study will be arranged under the following topics:-

(1) Effect of residues extract of preceding crops.

(2) Effect of temperature and seeding depth.

(3) Effect of salinity.

(1)Effect of residues extract of preceding crops .

Bonner (1950) found that toxic substances given out to soil by higher plants can affect the growth of the same or other species.

Guenzi and McCalla (1962) studied the effect of water-soluble substances of wheat and oat straw, soybean and sweet clover hay ,and corn and sorghum stalks on germination and growth of wheat, sorghum and corn seeds. They found that all residues contained water-soluble substances depressed germination, shoot and root growth of corn, wheat and sorghum.

The effect of water extracts of field soil and decomposing plant residues, i. e barley , rye , wheat , vetch, brocooli and sudangrass on germination and growth of lettuce was studied by Patrick et al., (1963) . They found an inhibition in germination and growth of lettuce by various extracts.

Guenzi et al, (1964) found that the water soluble extracts from forage of 2 alfalfa varieties at 3 cuttings and 6 stages of growth contained water-soluble substances reduced shoot and root growth of corn seedlings.

Hoveland (1964) studied the effects of root extracts , of 6 grasses i.e bermudagrass (Cynodon dactylon (L.) Pers) , bahiagrass (Paspalum notatum Flugge) , dallisgrass (Paspalum dilatatum Poir), johnsongrass (Sorghum halapense (L.) Pers), sorghum almum (Sorghum almum Parodi) and tall fescue (Festuca arundinacea Schreb) on germination and radicle elongation of 4 clovers, i. e white clover (Trifolium repens L.) ,ball clover (Trifolium nigrescens Viv.), crimson clover (Trifolium incarnatum L .) and arrowleaf clover (Trifolium vesicnlosum Savi) . He found that johnsongrass and sorghum almum extracts caused the most severe reduction in germination and seedling vigor. Johnsongrass and coastal bermuda grass delayed the germination of crimson clover and alfalfa initially but did not affect the final germination count after 4 days . Tall fescue reduced the radicle length of ball and crimson clovers but did not inhibit germination.

Guenzi et al., (1967) determined the toxicity of various plant parts of corn (Zea mays L.), sorghum (Sorghum vulgare Pers.) , wheat (Triticum aestivum L) and oats (Avena sativa L.) collected at harvest, to seed germination and the growth of corn and wheat seedlings. They found that wheat and corn residue extracts were more toxic to corn seedlings whereas extracts of oats and sorghum residues were more toxic to the growth of wheat seedling. The germination of wheat and corn seeds was not significantly reduced by any extract.

Peters (1968) found that water extracts from roots of fescue (Festuca arundinacea elator Schreb.) reduced growth of the roots and germination of rape (Brassica nigra L.) and birdsfoot trefoil (Lotus corniculatus L.) .

Bieber and Hoveiand (1968) studied the phytotoxic potential of 10 plant species on crownvetch and crimson clover germination and seedling vigor. They found that water extracts (1 : 15) of virginia pepperweed , evening primrose, crabgrass and crownvetch were most toxic to seed germination .Tall fescue and weeping lovegrass were least toxic. Pepperweed residues incorporated into soil for 10 weeks were toxic to crownvetch seed germination. Kobe lespedeza residues incorporated into soil did not affect germination percentage but decreased seedling growth.

Sharma and Singh (1969) in India, studied the effect of three winter forage legumes,i.e Egyptian clover (Trifolium alexandrinum Juslen .), sweet clover of senji (Melilotus indica All.) and pea (Pisum sativum L.) on the germination of the succeeding crop of maize (zea mays L.). They found that the preceding legumes slightly delayed the germination of maize .The speed of germination of maize were faster after follow than those sown after berseem .

Peters and Mohammed Zam (1981) found that after 10 and 14 days, germination of birdsfoot trefoil (Lotus corniculatus L.) and red clover (Trifolium pratense L.) were significantly inhibited by tall fescue (Festuca arundinacea schreb) extracts as compared with distilled water.