

C O N T E N T S

	Page
INTRODUCTION	1
REVIEW OF LITERATURE	4
I. Effect of crop rotation on the growth and yield of clover and forage legumes	4
II. Effect of crop rotation on the growth and yield of wheat	8
III. Effect of crop rotation on the growth and yield of maize	19
IV. Residual effect of fertilizer and manure application on the yield of succeeding crops	(29) ✓
V. Effect of crop rotation on the spread of weeds and nematodes	37 ✓
MATERIALS AND METHODS	43
RESULTS AND DISCUSSION	
FIRST PART: Effect of crop rotation and cotton fertilization residues on the growth, yield and spread of weeds and nematodes in clover	
A. Effect of Crop Rotation	53
I. Effect of crop rotation on the growth of clover:	53
1. Plant height	53
2. Number of branches per plant	53
3. Dry weight of leaves and stems per plant	55
II. Effect of crop rotation on forage yield of clover	56
III. Effect of crop rotation on the spread of weed and nematodes in clover	59 ✓
1. Weed density	59
2. Nematode population	62
B. Residual Effect of Cotton Fertilization	64
I. Residual effect of cotton fertilization on the growth of clover:	64
1. Plant height	64
2. Number of branches per plant	66
3. Dry weight of leaves and stem per plant	67

	Page
II. Residual effect of cotton fertilization on forage yield of clover	68
III. Residual effect of cotton fertilization on the spread of weeds and nematodes in clover	76
1. Weed density	76
2. Nematode population	78
C. Effect of the Interaction between crop Rotation and Cotton Fertilization	81
 <u>SECOND PART: Effect of crop rotation and cotton fertilization residues on the growth, yield and spread of weeds and nematodes in wheat</u>	
A. Effect of Crop Rotation	82
I. Effect of crop rotation on the growth of wheat	82
II. Effect of crop rotation on yield components and yield of wheat	84
1. Yield components	84
2. Grain and straw yields of wheat	85
III. Effect of crop rotation on the spread of weeds and nematodes in wheat	88 ✓
1. Weed density	88
2. Nematode population	91
B. Residual Effect of Cotton Fertilization	93
I. Residual effect of cotton fertilization on the growth of wheat	93
II. Residual effect of cotton fertilization on yield components, grain and straw yields of wheat	95
1. Yield components	95
2. Grain and straw yields of wheat	96

	Page
III. Residual effect of cotton fertilization treatments on the spread of weeds and nematodes in cotton	99
1. Weed density	99
2. Nematode population	102
C. Effect of the Interaction between Crop Rotation and Cotton Fertilization	104
 <u>THIRD PART:</u> Effect of Crop Rotation, Cotton Fertilization Residues and Preceding Crop on the Growth, Yield and Spread of Weeds and Nematodes in Maize	
A. Effect of Crop Rotation	106
I. Effect of crop rotation on the growth of maize	106
1. Tasseling and silking dates	106
2. Growth characters	108
II. Effect of crop rotation on yield components and grain yield of maize	109
1. Yield components	109
2. Grain yield of maize	111
III. Effect of crop rotation on the spread of weeds and nematodes in maize	113
1. Weed density	113
2. Nematode population	116
B. Residual Effect of Cotton Fertilization	118
I. Residual effect of cotton fertilization on the growth of maize	118
1. Tasseling and silking dates	118
2. Growth characters	120

	Page
II. Residual effect of cotton fertilization on yield components and grain yield of maize	121
1. Yield components	121
2. Grain yield of maize	124
III. Residual effect of cotton fertilization on the spread of weeds and nematodes in maize	125
1. Weed density	125
2. Nematode population	128
C. Effect of preceding crop	131
I. Effect of preceding crop on the growth of maize	131
1. Tasseling and silking dates	131
2. Growth characters	131
II. Effect of preceding crop on yield components and grain yield of maize ...	133
1. Yield components	133
2. Grain yield of maize	135
III. Effect of preceding crop on the spread of weeds and nematodes in maize	136
1. Weed density	136
2. Nematode population	138
D. Interaction Effects	141
I. Effect of the interaction between crop rotation and cotton fertilization treatments	141
II. Effect of the interaction between crop rotation and preceding crop	141
1. Leaf area	142
2. Weight of grain per plant	142
3. Yield of grain	144
4. Nematode population	146

	Page
III, Effect of the interaction between cotton fertilization treatments and preceding crop	148
1. Ear weight	148
2. Weight of grain per plant	149
3. Yield of grain	151
4. Nematode population	152
IV. Effect of crop rotation x cotton fertilization x preceding crop interaction ..	154
SUMMARY	155
ACKNOWLEDGEMENT	166
LITERATURE CITED	167
ARABIC SUMMARY	