

C O N T E N T S

	Page
ACKNOWLEDGMENT	
INTRODUCTION	1
REVIEW OF LITERATURE	4
I. Growth measurements	4
A. Effect of sowing dates	4
B. Effect of irrigation regimes	8
II. Yield components:	11
A. Effect of sowing dates	11
B. Effect of irrigation regimes.....	14
III. Seed yield:	16
A. Effect of sowing dates	16
B. Effect of irrigation regimes	19
IV. Chemical properties of seeds:.....	21
A. Effect of sowing dates	21
B. Effect of irrigation regimes	22
V. Crop water use :	24
1. Actual evapotranspiration	24
2. Class A pan evaporation studies	28
3. Potential evapotranspiration	29
4. Crop coefficient	32
5. Water use efficiency.....	33
MATERIALS AND METHODS	35
RESULTS AND DISCUSSION	54
I. Growth measurements:	54
1. Leaf number / plant	54

	Page
2. Leaf area / plant	58
3. Dry weight per plant	63
4. Plant height	70
II. Yield components :	76
1. Pod number per plant	76
2. Pod weight per plant	80
3. Seed number per plant	84
4. Seed weight per plant	87
5. Seed index	91
III. Seed yield in kg./faddan	96
IV. Chemical properties of seeds	109
1. Oil percentage of seeds	109
2. Oil yield	112
3. Protein percentage in seeds	116
4. Crude protein yield	119
V. Crop water use :	124
1. Actual evapotranspiration	124
i. Seasonal evapotranspiration	124
ii. Daily evapotranspiration rates	129
2. The Class A pan evaporation studies	137
i. Pan evaporation and some climatic factors relation	137
ii. Pan evaporation and soybean evapotranspiration relation	143
3. Potential evapotranspiration(ET_p)	147
i. Weekly ET_p	147

	Page
ii. Seasonal ET_p	148
4. Crop coefficient(K_c)	157
5. Water use efficiency(W.U.E.)	162
SUMMARY	167
LITERATURE CITED	183
ARABIC SUMMARY	