

LIST OF TABLES

Table No	TITLE	PAGE NO.
3.1	Geographical location of Experimental Farm CTRI at Katheru in Rajahmundry-533105	40
4.1.1.	Meteorological data for the year 2005-2006.	57
4.1.2.	Meteorological data for the year 2006-2007.	58
4.2.1.	Soil chemical composition of the experimental site before the start of the experimentation.	59
4.2.2.	N P and K contents (kg) of manures in 2.50 tones/ha.	59
4.2.3.1.	Total amount of Nitrogen applied (kg / ha)	60
4.2.3.2.	Total amount of phosphorus applied (kg / ha)	60
4.2.3.1.	Moisture dynamics of different organic manures.	61
4.3.1. a.	Effect of organic manures and inorganic fertilizers on plant height (cm).	64
4.3.1.b.	Interaction effects of organic manures with inorganic fertilizers on plant height (cm/plant) .	65-66
4.3.2.a.	Effect of organic manures and inorganic fertilizers on number of branches.	68
4.3.2 .b.	Interaction effects of organic manures with inorganic fertilizers on number of branches.	69-70
4.3.3. a.	Effect of organic manures and inorganic fertilizers on number of pods per plant.	72
4.3.3. b.	Interaction effects of organic manures with inorganic fertilizers on number of pods per plant.	73-74
4.3.4. a.	Effect of Organic manures and inorganic fertilizers on plant weight (g/plant).	76
4.3.4. b.	Interaction effects of organic manures with inorganic fertilizers on plant weight. (g/plant)	77-78
4.3.5 .a.	Effect of Organic manures and inorganic fertilizers on root penetration (cm).	80

4.3.5. b.	Interaction effects of organic manures with inorganic fertilizers on root penetration (cm).	81-82
4.3.6. a.	Effect of Organic manures and inorganic fertilizers on root weight (g/plant)	84
4.3.6.b.	Interaction effects of organic manures with inorganic fertilizers on root weight (g/plant).	85-86
4.3.7. a.	Effect of organic manures and inorganic fertilizers on number of nodules per plant.	88
4.3.7. b.	Interaction effects of organic manures with inorganic fertilizers on number of nodules per plant.	89-90
4.3.8. a.	Effect of organic manures and inorganic fertilizers on weight of nodules (g/plant)	92
4.3.8. a.	Interaction effects of organic manures with inorganic fertilizers on weight of nodules (g/plant)	93-94
4.3.9. a.	Effect of organic manures and inorganic fertilizers on total plant weight (g/plant)	96
4.3.9. b.	Interaction effects of organic manures with inorganic fertilizers on total plant weight (g/plant).	97-98
4.3.10. a.	Effect of organic manures and inorganic fertilizers on grain yield (t/ha)	100
4.3.10. b.	Interaction effects of organic manures with inorganic fertilizers on grain yield (t/ha).	101-102
4.3.10. e.	Grain yield gain due to zinc application under different organic manures at 100% NP application level.	103
4.3.10. f.	Grain yield gain due to source of organic manure under 100% Rec NP and 100%Rec N P +zinc.	104
4.3.11. a.	Effect of organic manures and inorganic fertilizers on straw yield (t/ha).	106
4.3.11. b.	Interaction effects of organic manures with inorganic fertilizers on straw yield (t/ha).	107-108
4.3.12. a.	Effect of organic manures and inorganic fertilizers on percentage nitrogen in straw.	109

4.3.12. b.	Interaction effects of organic manures with inorganic fertilizers on percentage nitrogen in straw	110-111
4.3.13. a.	Effect of organic manures and inorganic fertilizers on total nitrogen in straw (kg/ha).	112
4.3.13. b.	Interaction effects of organic manures with inorganic fertilizers on total nitrogen in straw (kg/ha).	113-114
4.3.14 . a .	Effect of organic manures and inorganic fertilizers on total bio mass (t/ha).	116
4.3.14. b.	Interaction effects of organic manures with inorganic fertilizers on total biomass (t/ha)	117-118
4.3.15. a.	Effect of organic manures and inorganic fertilizers on total nitrogen in biomass (kg/ha).	119
4.3.15. b.	Interaction effects of organic manures with inorganic fertilizers on total nitrogen in biomass (kg/ha).	120-121
4.3. 16. a.	Effect of organic manures and inorganic fertilizers on test weight (g/1000 grains).	123
4.3. 16. b.	Interaction effects of organic manures with inorganic fertilizers on test weight.	124-125
4.3. 17. a	Effect of organic manures and inorganic fertilizers on test volume (ml/1000 grains).	126
4.3. 17. b.	Interaction effects of organic manures with inorganic fertilizers on test volume (ml/1000 grain).	127-128
4.3.18 .a.	Effect of organic manures and inorganic fertilizers on shelling percentage.	130
4.3.18 .b.	Interaction effects of organic manures with inorganic fertilizers on shelling percentage.	131-132
4.3. 19. a.	Effect of organic manures and inorganic fertilizers on hulling percentage.	134
4. 3 .19. b.	Interaction effects of organic manures with inorganic fertilizers on hulling percentage.	135-136
4.3. 20. a.	Effect of organic manures and inorganic fertilizers on harvest index (Partial).	137

4.4.3. 20. b.	Mean interaction effects of organic manures with inorganic fertilisers on harvest index (Partial)	138
4.3. 21. a.	Effect of organic manures and inorganic fertilizers on harvest index (Actual).	139
4.3. 21. b.	Mean interaction effects of organic manures with inorganic fertilisers on actual harvest index.	140
4.3.22. a.	Effect of organic manures and inorganic fertilizers on total nitrogen in grain (kg/ha).	142
4.3.22. b.	Interaction effects of organic manures with inorganic fertilizers on total nitrogen in grain (kg/ha).	143-144
4.3.23. a.	Effect of organic manures and inorganic fertilizers on protein content in the grain (%).	146
4.3.23. b.	Interaction effects of organic manures with inorganic fertilizers on protein content of the grain (%).	147-148
4.3.24. a.	Effect of organic manures and inorganic fertilizers on total protein (kg/ha).	150
4.3.24. b.	Interaction effects of organic manures with inorganic fertilizers on total protein (kg/ha).	151-152
4.3.25. a.	Effect of organic manures and inorganic fertilizers on nitrogen percentage in straw (kg/ha).	154
4.3.25. b.	Interaction effects of organic manures with inorganic fertilizers on nitrogen percentage in straw (kg/ha).	155-156
4.3.26. a	Effect of organic manures and inorganic fertilizers on total nitrogen in straw (kg/ha).	158
4.3.26. b.	Interaction effects of organic manures with inorganic fertilizers on total nitrogen in straw (kg/ha).	159-160
4.3.27. a.	Effect of organic manures and inorganic fertilizers on total nitrogen uptake in bio mass (kg/ha).	162
4.3.27. b.	Interaction effects of organic manures with inorganic fertilizers on total nitrogen in biomass (kg/ha).	163-164
4.4.1. a.	Effect of organic manures and inorganic fertilizers on soil pH	166

4.4.1. b.	Interaction effects of organic manures with inorganic fertilizers on soil pH.	167-168
4.4.2. a.	Effect of organic manures and inorganic fertilizers on electrical conductivity.	169
4.4.2. b.	Interaction effects of organic manures with inorganic fertilizers on soil electrical conductivity.	170
4.4.3. a.	Effect of organic manures and inorganic fertilizers on soil organic carbon (%).	172
4.4.3. b.	Interaction effects of organic manures with inorganic fertilizers on soil organic carbon (%).	173
4.4.4. a.	Effect of organic manures and inorganic fertilizers on soil available nitrogen (kg/ha).	176
4.4.4. b.	Interaction effects of organic manures with inorganic fertilizers on soil nitrogen. (kg/ha)	177
4.4.5. a.	Effect of organic manures and inorganic fertilizers on soil phosphorus. (kg/ha)	179
4.4.5. b.	Interaction effects of organic manures with inorganic fertilizers on soil available phosphorus.	180
4.4.6. a.	Effect of Organic manures and inorganic fertilizers on soil available potassium (kg/ha).	182
4.4.6. b.	Interaction effects of organic manures with inorganic fertilizers on soil available potassium (kg/ha).	183
4.4.7. a.	Effect of Organic manures and inorganic fertilizers on soil chlorides (ppm).	185
4.4.7. b.	Interaction effects of organic manures with inorganic fertilizers on soil chlorides (ppm).	186
4.5.1.1. a.	Effect of organic manures and inorganic fertilizers on soil moisture in 00-15cm depth at 40 DAS.	188
4.5.1.1. b.	Interaction effects of organic manures with inorganic fertilizers on soil moisture in 00-15 cm depth at 40 DAS.	189
4.5.1.2.a.	Effect of Organic manures and inorganic fertilizers on soil moisture in 00-15 cm depth at 70 DAS	191

4.5.1.2. b.	Interaction effects of organic manures with inorganic fertilizers on soil moisture in 00-15 cm depth at 70DAS.	192
4.5.2.1.a.	Effect of organic manures and inorganic fertilizers on soil moisture in 15-30 cm depth at 40 DAS (%).	194
4.5.2.1.b.	Interaction effects of organic manures with inorganic fertilizers on soil moisture (%) in 15-30 cm depth at 40 DAS	195
4.5.2.2.a.	Effect of organic manures and inorganic fertilizers on soil moisture (%) in 15-30 cm depth at 70 DAS	197
4.5.2.2. b.	Interaction effects of organic manures with inorganic fertilizers on soil moisture (%) in 15-30 cm depth at 70 DAS.	198
4.6.1. a.	Actual agronomic use efficiency of Nitrogen under different schedules.	200
4.6.2 .a.	Mean interaction effects of organic manures with inorganic fertilisers on partial agronomic use efficiency of Nitrogen.	202
4.6.3.1.a.	Actual Physiological use efficiency of Nitrogen.	204
4.6.3.2. a.	Mean interaction effects of organic manures with inorganic fertilisers on partial physiological use efficiency of Nitrogen.	205-206
4.6. 4.1.a.	Actual Nitrogen uptake efficiency.	207
4.6.4.2 a.	Mean interaction effects of organic manures with inorganic fertilisers on partial Nitrogen uptake efficiency.	209
4.6.5.a.	Actual NHI under different schedules	211
4.6.6.a.	Mean interaction effects of organic manures with inorganic fertilisers on Internal use efficiency of Nitrogen.	213
4.6.7.1.a.	Actual recovery use efficiency of Nitrogen.	215

4.6.7.2. a.	Mean interaction effects of organic manures with inorganic fertilisers on partial recovery use efficiency of Nitrogen.	216-217
4.6.8.1. a.	Mean interaction effects of organic manures with inorganic fertilisers on partial agronomic use efficiency of phosphorus.	218
4.6.8.2. a.	Mean interaction effects of organic manures with inorganic fertilisers on actual agronomic use efficiency of phosphorus.	220
4.6.9.1. a.	Mean interaction effects of organic manures with inorganic fertilisers on partial agronomic use efficiency of potassium.	222
4.6.9.2.a.	Mean interaction effects of organic manures with inorganic fertilisers on actual agronomic use efficiency of potassium.	224
4.8.a.	Correlation coefficients between various parameters with grain yield in chick pea.	233
4.9.1.a.	Benefit accrued due to organic manures application over inorganic fertiliser application.	235
4.9.2.a.	Economics of growing chickpea with various organic manures and fertilizers.	236
4.10.1. a.	Larval count (No) per square meter at 50 DAS before spraying the compounds as influenced by the Biopesticides.	237-238
4.10.2.a.	Larval count per square meter at 60 DAS before spraying the compounds as influenced by the Biopesticides.	239-240
4.10.3.a.	Larval count per square meter at 70 DAS before spraying the compounds as influenced by the Bio pesticides.	241-242
4.10.4.a.	Larval count per square meter at 80 DAS before spraying the compounds as influenced by the Bio pesticides.	243-244

4.11.a.	Pod damage after 80 DAS (%) as influenced by the bio pesticides.	244-245
4.12.1.	Predators. (No / m ²)	246
4.12.2.	Parasites (No / m ²)	247
4.13.a.	Grain yield and percentage in grain yield as influenced by different bio pesticides.	250-251
4.14.a.	Straw yield and the percentage gain in straw yield as influenced by the bio pesticides.	252-253
4.15.a.	Biomass yield and the percentage gain in total biomass yield as influenced by bio pesticides	255-256
4.16.a.	Influence of botanical and bio pesticides on chickpea on Harvest Index (HI).	257
4.17.a.	Economic advantage of various treatments over chemical control. (Rs/ha.)	258