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Introduction: About myself

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WELCOME

To

My Presentation

Cotton Development Board Bangladesh

Name of the Experiment

Effect of Cotton Seed Oil Cake on Cotton Yield and Yield Contributing Characters

Objectives

- To study the effect of cotton seed oil Cake on yield and yield attributes of cotton

- To determine the optimum rate of cotton seed oil cake for cotton cultivation

Experimental Details

Treatments

T_0 = Absolute control

T_1 = 100 % Recommended dose of chemical fertilizer (N_{150} $P_{60}K_{175}S_{30}$)

T_2 = 80% RDCF ($N_{120}P_{48}K_{140}S_{24}$)

T_3 = 60% RDCF ($N_{90}P_{36}K_{105}S_{18}$)

T_4 = 100 % RDCF + cotton seed oil cake @ 1 t/ha

T_5 = 80% RDCF + cotton seed oil cake @ 2 t/ha

T_6 = 60% RDCF + cotton seed oil cake @ 4 t/ha

T_7 = Cotton seed oil cake @ 5 ton/ha

Design : RCB
Replication : 3
Season : 2016 –17
Variety : CB-12
Location : Cotton Research Farm, Sreepur, Gazipur.
Status : 2nd year

Table 1. Initial soil status of Experimental plot

Location	Soil P^H	OM	N	K	Mg	P	S	Zn	B	Texture
		%		meq / 100 g soil		mg/g soil				
Sreepur	5.3	0.87	0.044	0.20	1.90	1.95	5.58	1.12	0.18	Clay loam

Table 2. Nutritional status of cotton seed oil cake

p^H	OC	N	P	K	S
	%				
6.2	32.90	3.40	0.83	1.10	0.05

Table 2. Effect of cotton seed 0il cake on yield and yield attributes of cotton at Sreepur, Gazipur

Treatment	Plant Height (cm)	Number of Monopodia/ Plant	Number of Sympodia/ Plant	Number of Bolls/Plant	Boll Wt (g)	Seed Cotton Yield (kg/ha)
T_0	76.63 e	0.80 a	9.53 e	8.90 d	4.15 c	863.40 e
T_1	123.93 ab	0.86 a	17.76 ab	26.93 bc	5.17 ab	2488.10 bc
T_2	109.37 cd	1.10 a	16.20 cd	24.93 c	4.98 ab	2342.20 bc
T_3	105.77 d	1.10 a	16.23 cd	24.23 c	4.88 b	2103.70 cd
T_4	107.93 cd	0.96 a	16.73 bc	27.53 bc	5.11 ab	2791.80 ab
T_5	132.67 a	1.20 a	18.66 a	36.20 a	5.46 a	3665.40 a
T_6	119.07 bc	1.16 a	17.76 ab	31.76 ab	5.28 ab	2987.70 ab
T_7	98.30 d	1.00 a	15.43 d	22.56 c	4.82 b	1894.20 d
CV (%)	6.35**	ns	4.42**	11.89**	5.70*	9.96**
LSD value	12.15	0.63	1.24	5.28	5.28	417.40

T_0 = Absolute control, T_1 = 100 % RDCF (NPKS), T_2 = 80% RDCF (NPKS)
T_3 = 60% RDCF (NPKS), T_4 = 100 % RDCF + cotton seed oil cake @ 1 t/ha, T_5 = 80% RDCF + cotton seed oil cake @ 2 t/ha T_6 = 60% RDCF + cotton seed oil cake @ 4 t/ha,
T_7 = Cotton seed oil cake @ 5 ton/ha

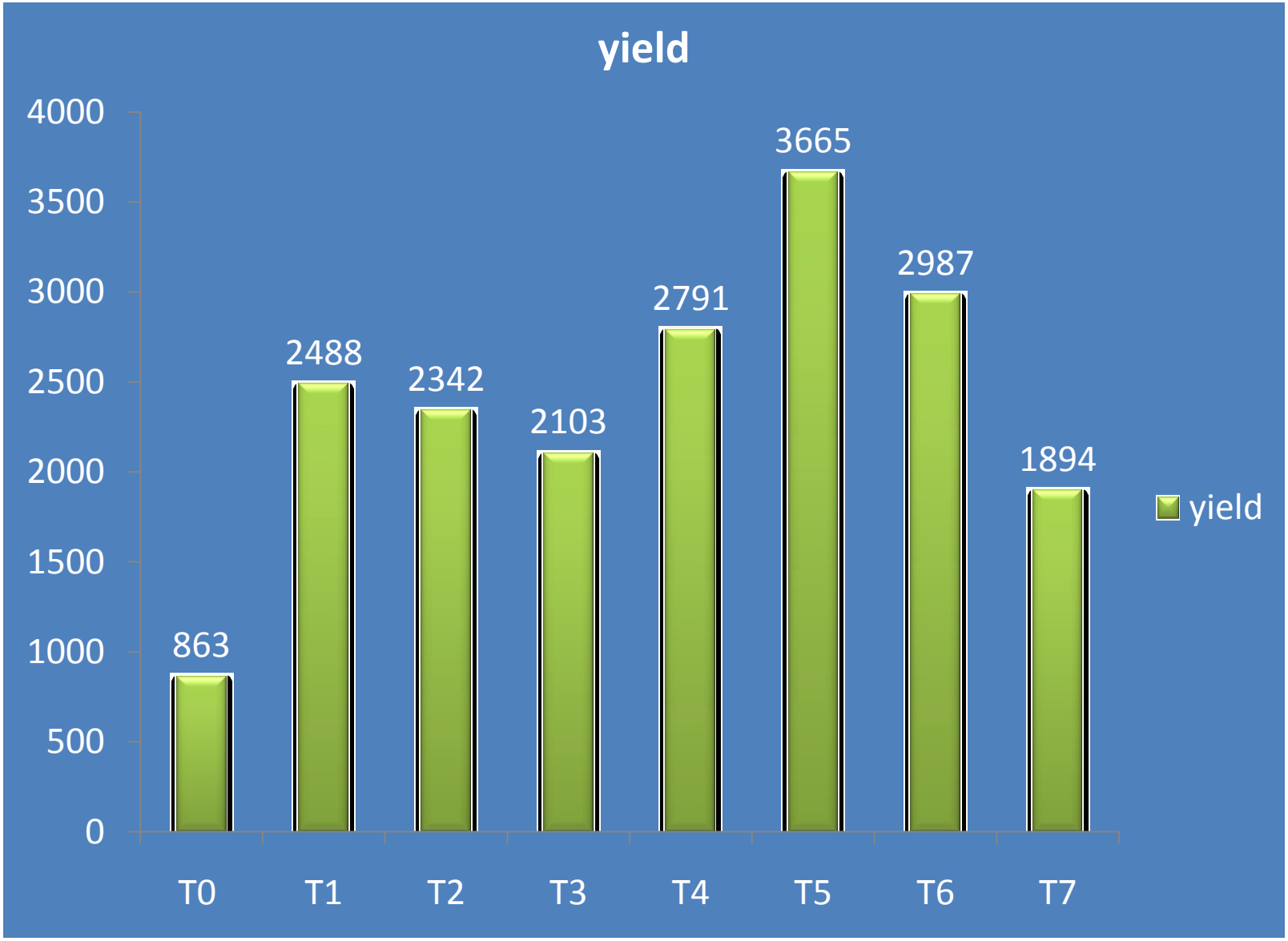
yield
4000
3500
3000
2500
2000
1500
1000
500
0
863
2488
2342
2103
2791
3665
2987
1894
T0
T1
T2
T3
T4
T5
T6
T7
yield
Treatments

Table 3. Effect of Cotton seed oil cake on fiber quality of cotton

Treatment	UHML (mm)	UI (%)	SFI	Str (g/tex)	Elong (%)	Mic value	MR	Rd	+b	GOT (%)
T_0	29.52	85.10	7.03	30.25	7.25	5.03	0.88	67.9	4.3	39.1
T_1	30.98	84.79	7.20	33.58	6.79	4.90	0.87	69.0	5.1	40.0
T_2	31.09	84.85	7.17	33.70	7.15	5.05	0.88	68.6	4.2	40.0
T_3	30.80	84.54	7.33	33.41	7.21	5.03	0.88	71.0	6.5	40.2
T_4	31.47	85.10	7.03	34.03	7.02	5.05	0.88	69.6	5.6	39.6
T_5	31.10	84.87	7.17	34.19	7.21	5.05	0.88	67.6	5.7	40.1
T_6	31.65	85.14	7.00	33.50	7.02	5.11	0.88	68.6	4.4	40.0
T_7	31.82	85.18	7.00	33.55	7.09	4.72	0.87	69.6	5.8	39.9

T_0 = Absolute control, T_1 = 100 % RDCF (NPKS), T_2 = 80% RDCF (NPKS) T_3 = 60% RDCF (NPKS), T_4 = 100 % RDCF + cotton seed oil cake @ 1 t/ha, T_5 = 80% RDCF + cotton seed oil cake @ 2 t/ha T_6 = 60% RDCF + cotton seed oil cake @ 4 t/ha, T_7 = Cotton seed oil cake @ 5 ton/ha

Table 4 Cost and Benefit analysis of cotton seed cake on cotton production

Treatment	Seed cotton yield (kg/ha)	Gross Return (Tk/ha)	Total Variable Cost (Tk/ha)	Gross Margin (Tk/ha)	BCR
T_0	863	48328	37080	11248	1.30
T_1	2488	139328	65104	74224	2.14
T_2	2342	131152	61774	69378	2.12
T_3	2103	117768	58366	59402	2.01
T_4	2791	156296	69080	87616	2.26
T_5	3665	205240	101080	104160	2.03
T_6	2987	167272	165080	2192	1.01
T_7	1894	106064	160000	-53936	0.66

Cotton seed oil cake =32Tk/kg

Price of Seed = 22 Tk/kg

Price of Seed Cotton = 56Tk /kg

Soil Science Research Field


Cotton Seed Oil Cake


Cotton Seed Oil Cake


Cotton Seed Oil Cake


Cotton Seed Oil Cake


Absolute Control
3


100% RDCF
1


100% RDCF + 1 t/ha CSOC
(IPNS System)
2


80% RDCF
7


(IPNS System)


60% RDCF
5


60% RDCF + 4 t/ha CSOC
(IPNS System)
4


5 t/ha CSOC
(IPNS System)
23

Conclusion

The results revealed that treatment T_5 (80 % Recommended fertilizer dose + 2 ton/ha cotton seed oil cake) produce the highest seed cotton yield (3665 kg/ha) and economic return 104160 Tk/ha (2.03). On the other hand, treatment T_4 produce lower seed cotton yield than T_5 treatment but it shows higher BCR (2.26). Hence, it is recommended that 100 % RDF + 1 ton/ha cotton seed oil cake is the best for cotton cultivation.


Thank you!