

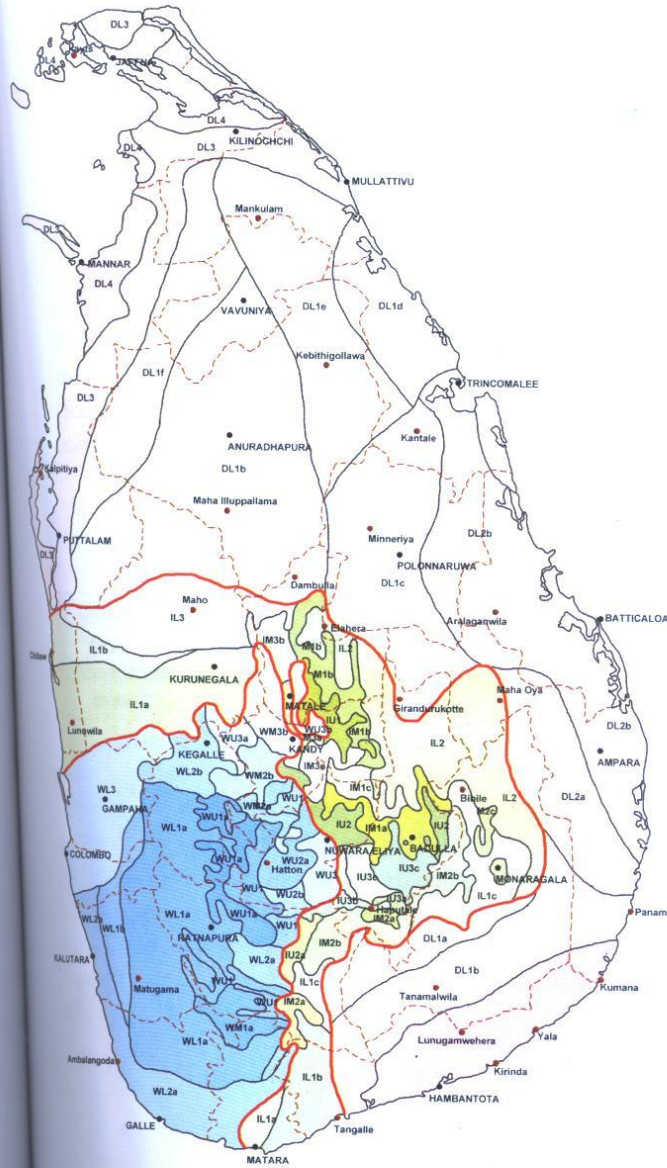
Organically grown rice in the LCWZ

JBDS KAHANDAWELA, R.O.

Regional Agricultural Research Centre

Bombuwela

කිතියම 08: ශ්‍රී ලංකාවේ කෘෂි පාරිසරික කලාප (2003)



CLIMATIC ZONE	AGRO-ECOLOGICAL REGION	75% EXPECTANCY VALUE OF ANNUAL RAINFALL (MM)	
WET ZONE	UP COUNTRY	WU1	> 3,100
		WU2a	> 2,400
		WU2b	> 2,200
	MID COUNTRY	WU3	> 1,800
		WM1a	> 3,200
		WM1b	> 2,900
		WM2a	> 2,200
		WM2b	> 1,800
		WM3a	> 1,600
LOW COUNTRY	WM3b	> 1,400	
	WL1a	> 3,200	
	WL1b	> 2,800	
	WL2a	> 2,400	
	WL2b	> 2,200	
	WL3	> 1,700	
INTERMEDIATE ZONE	UP COUNTRY	IU1	> 2,400
		IU2	> 2,100
		IU3a	> 1,900
		IU3b	> 1,700
		IU3c	> 1,600
		IU3d	> 1,300
	MID COUNTRY	IU3e	> 1,400
		IM1a	> 2,000
		IM1b	> 2,000
		IM1c	> 1,300
		IM2a	> 1,800
		IM2b	> 1,600
	LOW COUNTRY	IM2c	> 1,400
		IM3a	> 1,200
		IM3b	> 1,200
		IM3c	> 1,100
		IL1a	> 1,400
		IL1b	> 1,100
DRY ZONE	LOW COUNTRY	IL1c	> 1,300
		IL2	> 1,600
		IL3	> 1,100
		DL1a	> 1,100
		DL1b	> 900
		DL1c	> 800
		DL1d	> 900
		DL1e	> 800
		DL1f	> 800
DL2a	> 1,300		
DL2b	> 1,100		
DL3	> 800		
DL4	> 750		
DL5	> 650		







**AGRONOMY PACKAGE FOR ORGANIC RICE
IN IRON TOXIC FIELD**

- TREATMENTS -**
T₁-GREEN MANURE (Adhoc)20t/ha Basal only + LE
T₂-GREEN MANURE Adhoc10t/ha Basal+10t/ha TD
T₃-COMPOST (Adhoc)20t/ha - Basal only + LE
T₄- " " 10t/ha - Basal+10t/ha TD
T₅- " " 10t/ha - Basal+GREEN MANURE

T₆- DEPT RECOMMENDATION
DESIGN - RC B D - 5 reps
VARIETY - BW 272-6B
D.O.S. 10-11-2007







Results – Yala 2006
Organic Agriculture
Agronomy Studies

စက္ကနုခွေ



කතච්චිචුරා පසුච
චිචිරස දැමිච
අඛ:10 චුසච 03



Table 6 – Possibility of using flooded water as a means of weed control (Bg 250)

Treatment	Filled grains (t/ha)	Unfilled grains (t/ha)
T ₁ - Sowing into standing water (2 bu/ac)	2.16	0.33
T ₂ - Seedling broadcasting into standing water	1.49	0.22
T ₃ - Random transplanting in standing water	1.99	0.28

കണ്ടുകിട്ടിയ
മുറ്റം ഉടിയ

Results –Yala 2007

Agronomy Studies

Project No: 01

Title : Development of an agronomic package for organic rice cultivation in the LCWZ

Objectives: To test the effectivity of two different organic fertilizer packages under the conditions of the LCWZ

Table 1:- Effect of organic matter applied in 3 different ways on rice grain yield (t/ha) under Organic farming RARDC, Bombuwala – maha2006/07

Treatment	Herath Banda		Bw 364	
	Filled	Unfilled	Filled	Unfilled
T ₁ Insitu+Ex +Compost)	2.98	0.09	3.80	0.47
T ₂ Compost	3.17	0.11	3.82	0.41
T ₃ - ½ Org+ ½ inorg)	2.88	0.20	3.91	0.46
T ₄ (inorg- control)	2.92	0.19	3.73	0.48
Mean	2.99	0.15	3.82	0.46
Cv %	8.85			







କେନି କୋର-
Cassia sp.







Nutrient composition of some leaves of used green leaves

Plant species	Av N %	Av P %	Av K %	Av Org C %	Av C/N
<i>Gliricidia sepium</i>	4.61	0.19	2.17	45.4	9.9
<i>Pogiantha dichotoma</i>	2.15	0.15	1.92	45.3	21.7
<i>Erithrina sp</i>	5.21	0.32	1.83	44.1	8.7
<i>Manihot sp</i>	4.51	0.33	1.47	45.7	10.6
<i>Tithonia diversifolia</i>	4.67	0.38	3.32	40.1	8.7
<i>Mikana cordata</i>	4.36	0.32	3.35	39.7	9.2

Table 3 – Effect of different green manure on rice yield (kg/plot) (2006/07 Maha RARDC, Bombuwala)(net plot area – 12.96 m²)

Treatment	Filled grains	Unfilled grains
T ₁ – Arunadevi (<i>Wedilia trilobata</i>)	2.62	0.68
T ₂ – Gatakola (<i>Boreria</i> sp)	2.07	0.56
T ₃ - Cassava	2.20	0.82
T ₄ - Glyricidia	1.96	0.56
T ₅ - Puraria sp	2.37	0.70
T ₆ - Ipil ipil (<i>Leucana lucocephali</i>)	2.28	0.64
T ₇ – Vinasavel (<i>Michaenia scandens</i>)	1.84	0.62
T ₈ - Adhoc mixture	2.36	0,60
T ₉ - Compost only	2.47	0.78
T ₁₀ - control (inorg)	2.02	0.84













**PROGRESS 2007/08 MAHA
DIVISION OF AGRONOMY
RRDC, BOMBUWELA.**

J. B. D. S. Kahandawela, R. O.

K. D. S. Samararatne, A. I.

Y. Ranatunge, A.I.

සැලවිනායා

කොමිටෝස්වි



A man wearing a white short-sleeved shirt, dark trousers, black shoes, and a light-colored cap is leaning over a trench. He is using a wooden stick to examine the soil. To his right, a white sign is placed on the ground. The sign has text in Sinhala. The background shows a dirt area with some sparse vegetation.

චලවච
කොමිටෝසිව්.

ಶಿಲ್ಪ ಜೋಲಿಯೊಡನೆ



Compost Types analyzed at RARDC (Bomбуwela)

Compost Types	N%	P%	K%
Rice husk compost	1.33	0.107	0.058
Vegetable refuse compost	0.77	0.321	0.133
Salvinia compost	1.33	0.321	0.133
Adhoc compost	2.66	0.385	0.205
Saw dust compost	1.19	0.043	0.046
Compost (animal base) (Gami Sevena)	2.17	0.535	0.080



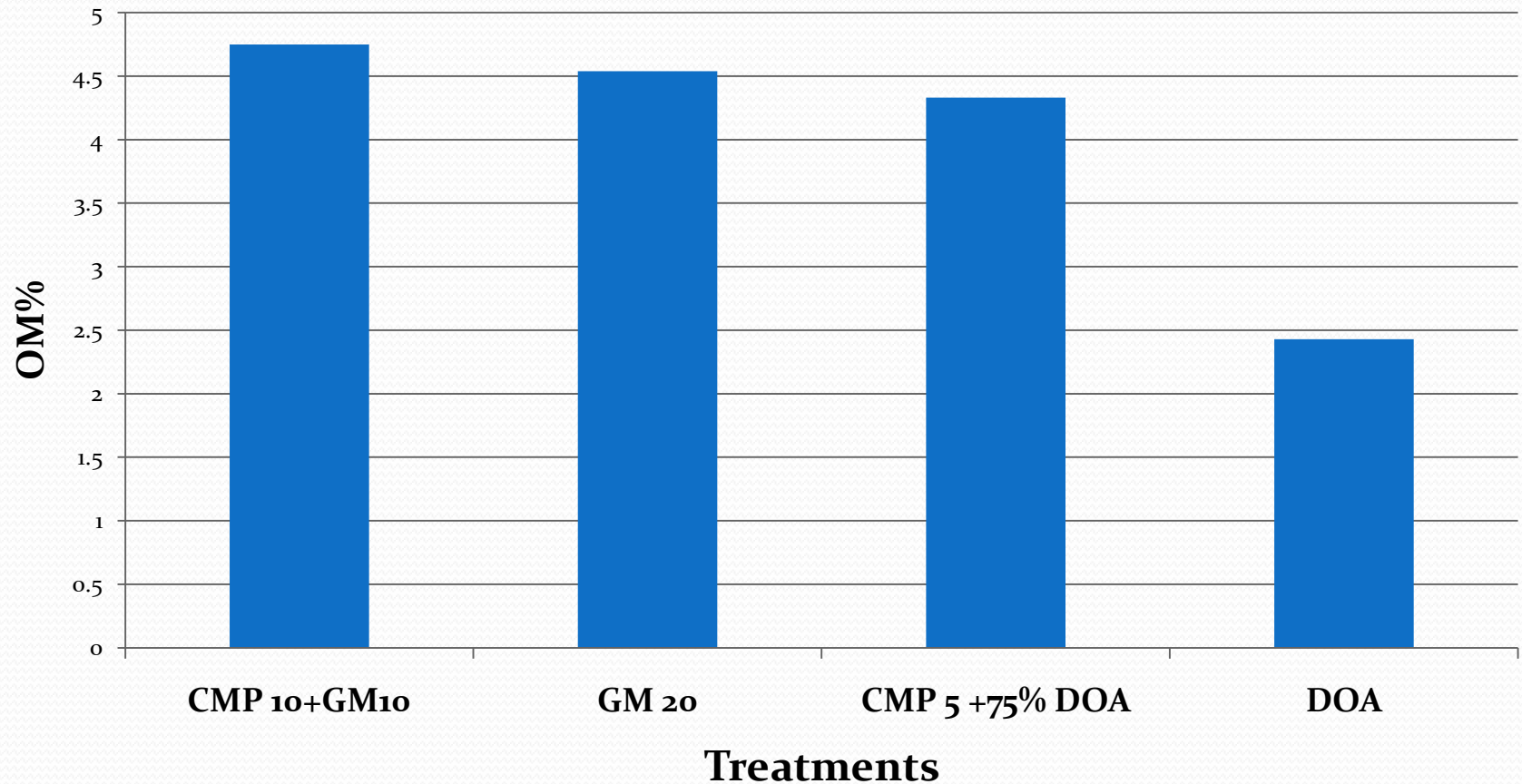
Results

Treatments	Grain yield (t/ha)
T2 - Green leaf compost (rapid)	2.43
T4 - Rice husk (rapid)	2.10
T3 - Rice husk (Conv.)	2.08
T1 - Green leaf (conv.)	1.89
T5 - DOA recommendation	1.77
T6 - No fertilizer	1.66

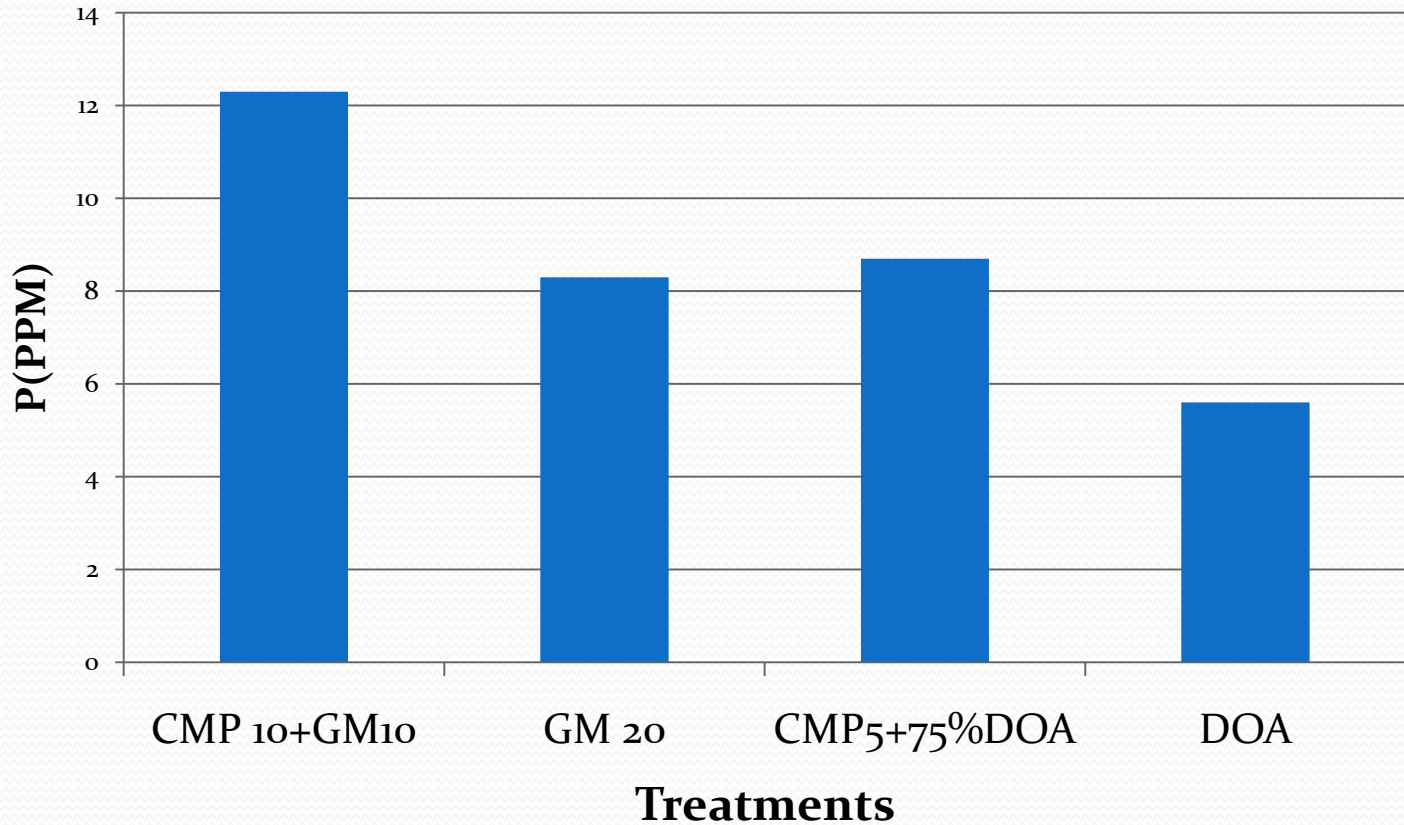
LSD (P=0.05) = NS

CV = 18.6%

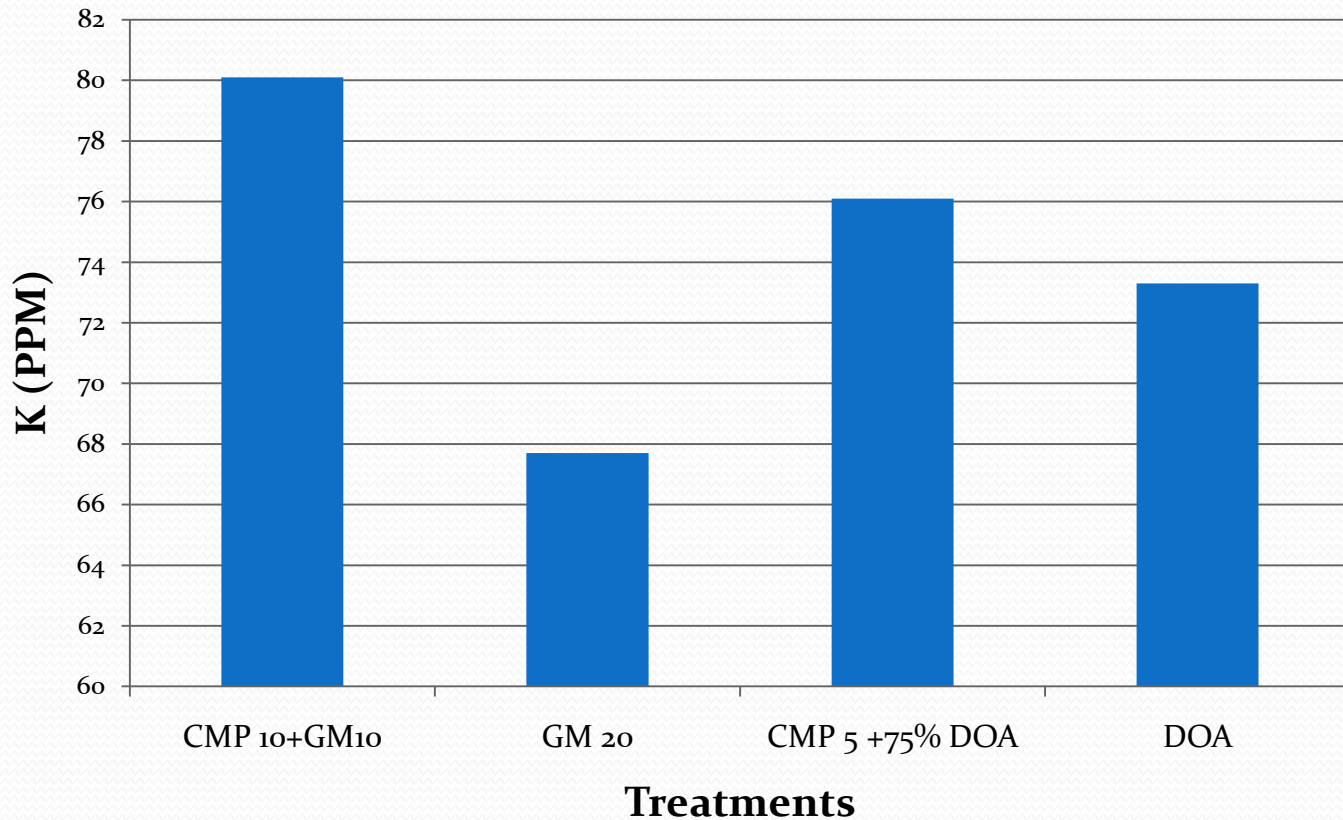
Change in the OM content in the soil after 4 seasons



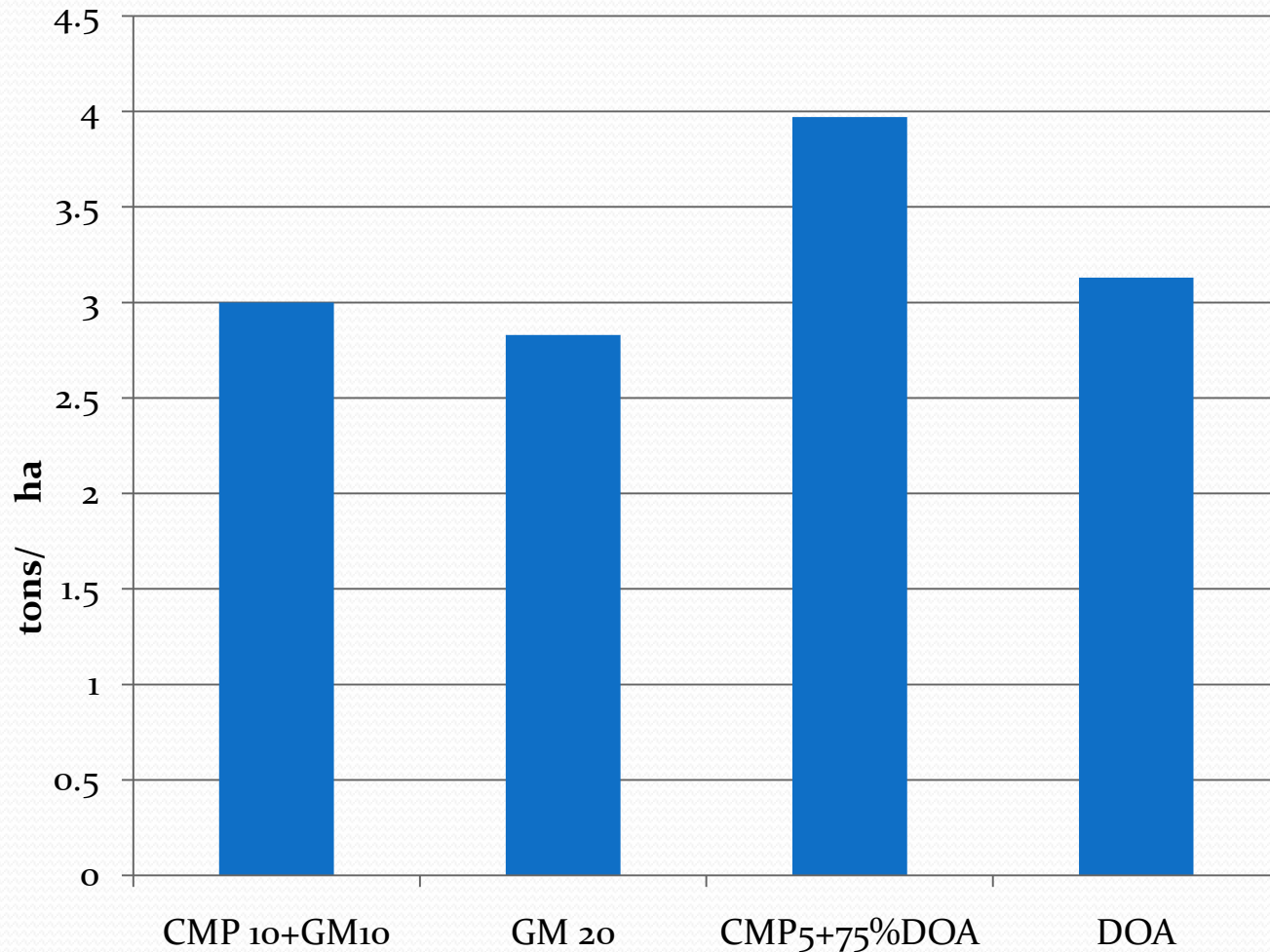
Change in the P content in the soil after 4 seasons



Change in the K content in the soil after 4 seasons



Effect of different organic treatments on paddy yield (3 Seasons)



**PROGRESS 2007/08 MAHA
DIVISION OF AGRONOMY
RRDC, BOMBUWELA.**

J. B. D. S. Kahandawela, R. O.

K. D. S. Samararatne, A. I.

Y. Ranatunge, A.I.

Project 01

Testing of a viable Agronomy package for the LCWZ

Objectives – To develop an agronomy package that is feasible and economical

1st ploughing - applied 4t/ha straw (previous seasons)

10 days later - 2nd ploughing

Apply organic matter after the 2nd ploughing

7- 10 days later - 3rd ploughing - apply ERP @ 250kg/ha
and partially burnt rice husk @ 500kg/ha and
establish

Glyricidia leaf extract-

20kg leaf/160 liters of water

Soaking for 3-5 days

Soil drenching with water can @

1.8-2 sq.m/l



Effect of Organic matter on Iron toxic soils.

Objectives –

1. To test relative performance of green matter and compost on the organically grown rice.
2. To ameliorate the stress conditions of the rice plant grown under iron toxic conditions.



AGRONOMY PACKAGE FOR ORGANIC RICE IN IRON TOXIC FIELD

TREATMENTS -

T₁. GREEN MANURE (Adhoc) 20t/ha (Basal only) + LE

T₂. GREEN MANURE (Adhoc) 10t/ha Basal + 10t/ha TD

T₃. COMPOST (Adhoc) 20t/ha - (Basal only) + LE

T₄. " " 10t/ha - Basal + 10t/ha TD

T₅. " " 10t/ha - Basal + GREEN MANURE 10t/ha TD

T₆. DEPT RECOMMENDAT CON

DESIGN - RCBD - 5 reps

D.O.S. 10-11-2007

VARIETY. BW272-6B

Results

Treatment	Grain wt (t/ha)
T6 -Inorganic fertilizer DOA recommendation	2.74 a
T1 -2ot Green matter (adhoc) (basal only) + LE	2.23 b
T4 -1ot Com(adhoc) (basal) + 1ot comp (4was)	2.08 b
T3 -2ot Compost (adhoc) (basal only) + LE	2.04 b
T5 -1ot Green mat (basal)+ 1ot comp (4was)	1.99 b
T2 -1ot Green mat (basal) + 1ot green mat (4was) CV – 14.53%	1.91 b

Thank You

Grain yield (t/ha) of paddy (Bg 250; Bw272-6b) under different organic treatments at RARDC, Bombuwela during 2010/11 maha

treatment	Grain Yield (t/ha)
272 – 6 b	2.99
Bg 250	2.68
T2- DOA	3.50 a
T3- 75% DOA + 25% OM	3.16 ab
T4- 50% DOA + 50% OM	2.93 abc
T5- Compost	2.85 bc
T6- ½ Compost + ½ OM	2.49 cd
T1- No fertilizer	2.06 d
CV	12.37%