

Table 1. Nutrient concentration of wheat as affected by lime \times manure interaction in the wheat–mungbean–T. aman rice pattern at ARS (BARI) farm, Thakurgaon

Treatments	Nitrogen				Phosphorus				Potassium			
	Grain N (%)		Straw N (%)		Grain P (%)		Straw P (%)		Grain K (%)		Straw K (%)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	1.303	1.290	0.257	0.240	0.367	0.363	0.907	0.837	0.467	0.457	1.377	1.365
L ₀ M _{PM}	1.530	1.513	0.300	0.293	0.417	0.413	0.920	0.920	0.493	0.493	1.430	1.453
L ₀ M _{FYM}	1.457	1.443	0.293	0.287	0.420	0.413	0.913	0.900	0.503	0.500	1.467	1.437
L ₁ M ₀	1.517	1.510	0.313	0.307	0.477	0.467	0.927	0.937	0.510	0.500	1.647	1.637
L ₁ M _{PM}	1.753	1.747	0.340	0.323	0.513	0.503	0.963	0.970	0.517	0.507	1.758	1.747
L ₁ M _{FYM}	1.647	1.640	0.323	0.317	0.493	0.493	0.953	0.947	0.510	0.500	1.753	1.713
L ₂ M ₀	1.627	1.617	0.317	0.300	0.507	0.503	0.923	0.923	0.503	0.497	1.710	1.687
L ₂ M _{PM}	1.733	1.730	0.350	0.323	0.523	0.513	0.960	0.947	0.523	0.513	1.757	1.713
L ₂ M _{FYM}	1.70	1.700	0.327	0.310	0.513	0.507	0.947	0.940	0.517	0.507	1.740	1.730
CV (%)	1.61	1.53	2.49	3.09	1.44	1.21	0.95	1.34	1.33	1.51	0.98	1.79
Sig. Level	**	**	*	**	**	**	NS	**	**	**	**	NS
S.E. (\pm)	0.0560	0.0481	0.0451	0.0536	0.0391	0.0324	0.0512	0.0714	0.0389	0.0251	0.0922	0.0166

Treatments	Sulphur				Zinc				Boron			
	Grain S (%)		Straw S (%)		Grain Zn ($\mu\text{g g}^{-1}$)		Straw Zn ($\mu\text{g g}^{-1}$)		Grain B ($\mu\text{g g}^{-1}$)		Straw B ($\mu\text{g g}^{-1}$)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	0.217	0.207	0.162	0.156	51.07	50.90	18.57	18.67	17.90	17.90	17.77	19.33
L ₀ M _{PM}	0.230	0.217	0.178	0.177	56.77	56.50	20.53	20.40	20.83	20.33	19.43	24.17
L ₀ M _{FYM}	0.223	0.210	0.174	0.175	56.27	56.13	20.13	20.30	20.57	20.40	19.33	24.00
L ₁ M ₀	0.237	0.227	0.172	0.180	49.33	49.13	19.47	19.77	18.10	18.13	18.13	20.93
L ₁ M _{PM}	0.267	0.260	0.198	0.195	51.53	51.37	22.90	22.77	22.00	21.67	19.10	24.10
L ₁ M _{FYM}	0.260	0.253	0.194	0.194	51.03	51.00	22.00	21.83	21.50	21.33	18.93	22.77
L ₂ M ₀	0.247	0.240	0.185	0.183	50.00	50.00	19.87	20.03	18.50	18.33	18.17	21.10
L ₂ M _{PM}	0.270	0.267	0.197	0.194	51.53	51.37	22.87	22.67	22.10	21.93	19.10	24.67
L ₂ M _{FYM}	0.263	0.257	0.193	0.192	51.23	51.17	22.00	21.50	21.77	21.63	19.17	23.43
CV (%)	2.82	3.24	4.64	1.63	1.72	1.68	1.93	1.69	2.47	1.88	2.91	2.91
Sig. Level	NS	NS	NS	NS	**	**	NS	*	NS	NS	NS	*
S.E. (\pm)	0.0401	0.0444	0.0492	0.0172	0.2161	0.2044	0.2331	0.2040	0.2907	0.2194	0.3156	0.3812

Table 2. Nutrient concentration of mungbean as affected by lime and manure interaction in the wheat–mungbean–T. aman rice pattern at ARS (BARI) farm, Thakurgaon

Treatments	Nitrogen				Phosphorus				Potassium			
	Seed N (%)		Stover N (%)		Seed P (%)		Stover P (%)		Seed K (%)		Stover K (%)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	2.619	2.597	1.119	1.118	0.422	0.412	0.216	0.215	1.477	1.467	2.179	2.177
L ₀ M _{PM}	2.910	2.886	1.365	1.362	0.462	0.448	0.275	0.273	1.536	1.533	2.270	2.267
L ₀ M _{FYM}	2.833	2.787	1.332	1.330	0.452	0.438	0.263	0.260	1.530	1.526	2.259	2.257
L ₁ M ₀	2.920	2.907	1.443	1.440	0.528	0.525	0.296	0.293	1.586	1.583	2.362	2.361
L ₁ M _{PM}	3.327	3.293	1.543	1.540	0.582	0.572	0.331	0.329	1.707	1.695	2.466	2.465
L ₁ M _{FYM}	3.225	3.192	1.528	1.525	0.572	0.563	0.315	0.310	1.663	1.653	2.432	2.435
L ₂ M ₀	2.990	2.937	1.436	1.431	0.541	0.538	0.299	0.294	1.618	1.616	2.327	2.330
L ₂ M _{PM}	3.280	3.263	1.541	1.538	0.583	0.576	0.331	0.329	1.700	1.695	2.423	2.420
L ₂ M _{FYM}	2.979	3.158	1.530	1.528	0.575	0.565	0.318	0.315	1.650	1.640	2.411	2.409
CV (%)	3.81	1.07	1.46	1.35	2.30	1.77	1.04	1.87	1.70	1.60	1.48	1.12
Sig. Level	**	NS	**	**	NS	NS	**	**	**	**	**	**
S.E. (±)	0.6618	0.0185	0.0377	0.0287	0.0697	0.0527	0.1767	0.1459	0.0650	0.0553	0.0137	0.0167

Treatments	Sulphur				Zinc				Boron			
	Seed S (%)		Stover S (%)		Seed Zn (µg g ⁻¹)		Stover Zn (µg g ⁻¹)		Seed B (µg g ⁻¹)		Stover B (µg g ⁻¹)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	0.191	0.190	0.226	0.225	32.93	32.80	24.97	24.80	28.07	27.93	33.73	33.60
L ₀ M _{PM}	0.225	0.220	0.287	0.284	37.17	36.93	34.97	34.83	32.05	31.93	39.33	39.20
L ₀ M _{FYM}	0.210	0.210	0.262	0.260	36.50	36.40	34.33	34.20	31.73	31.67	38.60	38.50
L ₁ M ₀	0.245	0.240	0.306	0.302	37.20	37.13	37.97	37.80	32.17	31.93	40.97	40.50
L ₁ M _{PM}	0.280	0.278	0.330	0.328	46.07	45.93	41.20	40.97	36.57	36.37	46.53	46.30
L ₁ M _{FYM}	0.270	0.267	0.323	0.321	45.77	45.70	38.33	38.20	36.00	35.90	45.27	45.07
L ₂ M ₀	0.260	0.253	0.316	0.315	37.97	37.83	37.37	37.23	32.37	32.10	39.23	39.13
L ₂ M _{PM}	0.276	0.267	0.328	0.327	45.90	45.67	40.77	40.60	36.80	36.60	45.67	45.47
L ₂ M _{FYM}	0.271	0.269	0.319	0.316	45.17	45.07	38.70	38.50	36.03	35.92	45.13	45.07
CV (%)	1.40	2.00	1.29	1.15	1.62	1.42	1.89	1.66	1.07	1.77	1.81	1.69
Sig. Level	**	**	**	**	**	**	**	**	NS	NS	*	**
S.E. (±)	0.2008	0.2808	0.2228	0.1970	0.1440	0.0937	0.1886	0.1375	0.2070	0.1493	0.1938	0.1655

Table 3. Nutrient concentration of T Aman rice as affected by lime \times manure interaction in the wheat–mungbean–T. aman rice pattern at ARS (BARI) farm, Thakurgaon

Treatments	Nitrogen				Phosphorus				Potassium			
	Grain N (%)		Straw N (%)		Grain P (%)		Straw P (%)		Grain K (%)		Straw K (%)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	1.250	1.248	0.457	0.460	0.276	0.273	0.103	0.104	0.228	0.226	1.454	1.456
L ₀ M _{PM}	1.375	1.370	0.663	0.665	0.288	0.285	0.127	0.126	0.276	0.274	2.182	2.175
L ₀ M _{FYM}	1.355	1.350	0.640	0.625	0.285	0.281	0.122	0.121	0.260	0.258	2.152	2.147
L ₁ M ₀	1.425	1.417	0.724	0.715	0.300	0.297	0.133	0.132	0.336	0.330	2.320	2.317
L ₁ M _{PM}	1.523	1.520	0.817	0.777	0.330	0.327	0.143	0.142	0.369	0.370	2.427	2.425
L ₁ M _{FYM}	1.503	1.497	0.793	0.789	0.323	0.318	0.140	0.139	0.358	0.355	2.397	2.385
L ₂ M ₀	1.424	1.421	0.713	0.715	0.310	0.310	0.131	0.130	0.344	0.340	2.335	2.325
L ₂ M _{PM}	1.520	1.518	0.809	0.774	0.328	0.323	0.141	0.140	0.365	0.362	2.413	2.415
L ₂ M _{FYM}	1.502	1.497	0.775	0.762	0.320	0.317	0.139	0.138	0.356	0.350	2.390	2.385
CV (%)	1.60	1.41	1.45	4.15	1.83	1.12	1.88	1.82	1.17	1.05	1.36	1.30
Sig. Level	*	**	**	**	**	**	**	**	**	**	**	**
S.E. (\pm)	0.0495	0.0340	0.5964	0.1671	0.1478	0.1954	0.0663	0.0619	0.2171	0.1921	0.0459	0.0383

Treatments	Sulphur				Zinc				Boron			
	Grain S (%)		Straw S (%)		Grain Zn ($\mu\text{g g}^{-1}$)		Straw Zn ($\mu\text{g g}^{-1}$)		Grain B ($\mu\text{g g}^{-1}$)		Straw B ($\mu\text{g g}^{-1}$)	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
L ₀ M ₀	0.120	0.119	0.110	0.111	22.40	22.30	49.63	49.83	11.30	11.20	13.40	12.87
L ₀ M _{PM}	0.138	0.136	0.134	0.135	24.50	24.50	54.70	54.60	14.33	14.20	16.17	15.93
L ₀ M _{FYM}	0.133	0.132	0.130	0.132	23.30	23.17	52.93	52.80	13.20	13.10	15.70	15.60
L ₁ M ₀	0.144	0.143	0.144	0.145	25.50	25.40	56.37	56.27	13.83	13.70	16.30	16.20
L ₁ M _{PM}	0.156	0.155	0.153	0.154	28.60	28.50	60.07	59.93	15.70	15.60	17.93	17.80
L ₁ M _{FYM}	0.153	0.152	0.148	0.149	27.13	27.07	58.70	58.50	15.30	15.20	16.40	16.30
L ₂ M ₀	0.148	0.147	0.142	0.141	25.77	25.70	56.40	56.30	14.07	14.07	16.20	16.10
L ₂ M _{PM}	0.155	0.154	0.152	0.153	28.20	28.07	59.80	59.70	15.50	15.40	17.60	17.50
L ₂ M _{FYM}	0.152	0.151	0.149	0.150	27.40	27.30	57.70	57.60	15.13	15.07	15.93	15.93
CV (%)	1.83	0.99	1.99	1.66	1.54	1.42	1.48	1.39	1.07	1.89	1.01	1.93
Sig. Level	**	**	**	**	**	**	**	**	**	**	**	**
S.E. (\pm)	0.0694	0.0818	0.0801	0.0539	0.0808	0.0631	0.1559	0.1267	0.0884	0.0732	0.0940	0.0857