

Sources of soil sample	No. of sample	No. of ingredient
University (Teacher/Student)	84	84
GOs	1	8
NGOs	24	206
Private		
Quality control		
Total	1549	9854

Table 2.1 Soil pH status of farmer's samples (Charfasion Upazila)

Sample	Very strongly acidic	Strongly acidic	Slightly acid	Neutral	Slightly alkaline	Strongly alkaline	Very strongly alkaline
	<4.5	4.6-5.5	5.6-6.5	6.6-7.3	7.4-8.4	8.5-9.0	>9.0
50	-	7	33	10	-	-	-
%	-	14.0	66.0	20.0	-	-	-

Table 2.2 Soil EC status of farmer's samples (Charfasion Upazila)

Sample	Non Saline	Very Slightly Saline	Slightly Saline	Medium Saline	Strongly Saline	Very strongly Saline
	0-1.99	2.0-3.99	4.0-7.99	8.0-11.99	12-14.99	>15.0
50	10	4	32	4	-	-
%	20.0	8.0	64.0	8.0	-	-

Table 2.3 Soil Organic Matter status of farmer's samples (Charfasion Upazila)

Sample	Very Low	Low	Medium	High	Very High
	<1.0	1.0-1.7	1.71-3.4	3.41-5.5	>5.5
50	3	21	26	-	-
%	6.0	42.0	52.0	-	-

Table 2.4 Total N status of farmer's samples (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<0.09	0.091-0.18	0.181-0.27	0.271-0.36	0.361-0.45	>0.45
50	25	25	-	-	-	-
%	50.0	50.0	-	-	-	-

Table 2.5.1 Available P status of farmer's samples in (Bray & kurtz) (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<5.25	5.26-10.5	10.51-15.75	15.76-21.0	21.01-26.25	>26.25
40	-	-	-	12	22	6
%	-	-	-	30.0	55.0	15.0

Table 2.5.2 Available P status of farmer's samples in (Olsan) (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<7.5	7.51-15.0	15.1-22.5	22.51-30.0	30.1-37.5	>37.5
10	-	-	1	7	2	-
%	-	-	10.0	70.0	20.0	-

Table 2.6 Exchangeable K status of farmer's samples (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<0.09	0.091-0.18	0.181-0.27	0.271-0.36	0.361-0.45	>0.45
50	-	5	17	12	7	9
%	-	10.0	34.0	24.0	14.0	18.0

Table 2.6 Available S status of farmer's samples (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<7.5	7.51-15.0	15.1-22.5	22.51-30.0	30.1-37.5	>37.5
50	3	18	20	6	3	-
%	6.0	36.0	40.0	12.0	6.0	-

Table 2.7 Available B status of farmer's samples (Charfasion Upazila)

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<0.15	0.15-0.30	0.31-0.45	0.451-0.60	0.61-0.75	>0.75
50	-	-	-	2	4	44
%	-	-	-	4.0	8.0	88.0

Table-3. Analyzed plant samples

Source of sample	No of sample	No of ingredient
Research Work	20	624
Total	20	624

Table- 4. Analyzed water samples

Source of sample	No. of sample	No. of ingredient
SRDI	10	10
Research Work	39	624
DAE	9	10
Total	58	644

Table-5. Status of Upazila land and soil resource utilization guide updating soil

Divisional Lab.	Laboratory	Name of Upazila	Sample	Status
Barishal Total sample:528 Complete:266 Working:100 Pending: 162	Div. Lab. Barishal Com./Working/Pending 3/1/1	Agailghara, Barishal	112	C
		Borhanuddin, Bhola	89	C
		Doulatkhan, Bhola	65	C
		Sadar, Barishal	100	W
		Mothbaria, Pirojpur	162	P
	Reginal Lab. Patuakhali Com./Working/Pending 0/0/0			
Total	Laboratory:2	5 (C:3/W:1/P:1)	528	

C-Complete W-Working P-Pending

Table-6. Soil samples analysis and fertilizer recommendation card distribution through MSTL

MSTL	Season	Working area					
		District	Upazila/Block	Sample		Card	
Kirtankhola	Rabi/22	Bhola Barguna Patuakhali Jhalokati	Doulatkhan Sadar Barguna Sadar Patuakhali Sadar Jhalokati	Rabi	Kharif	Rabi	Kharif
				200	-	200	-
Total :				200	-	200	-

Table 6.1: pH level of analyzed samples by MSTLs during 2022-2023

Name of MSTL	Working area			No. of sample	pH level					
	Division	District	Upazilla		VStA	StA	SIa	Nt	SIAlk	StAlk
Kirtankhola Rabi.22	Barishal	Bhola	Doulatkhan	50	0	1	3	32	14	0
		Barguna	Sadar	50	0	2	19	21	8	0
		Patuakhali	Sadar	50	0	11	15	20	4	0
		Jhalokati	Sadar	50	0	4	12	24	10	0
		Total	4 Upz	200	0	18	49	97	36	0
	Parcent				0.00	9.00	24.50	48.50	18.00	0.00

Table 6.2: EC status of analyzed samples by MSTLs during 2022-2023

Name of MSTL	Working area			No. of sample	EC					
	Division	District	Upazilla		NS	VSS	SS	MS	StS	VStS
					No. and percentage					
Kirtankhola Rabi.22	Barishal	Bhola	Doulatkhan	50	32	6	8	2	0	2
		Barguna	Sadar	50	26	8	13	3	0	0
		Patuakhali	Sadar	50	21	8	6	7	5	3
		Jhalokati	Sadar	50	42	7	1	0	0	0
		Total	4 Upz	200	121	29	28	12	5	5
	Parcent				60.50	14.50	14.00	6.00	2.50	2.50

Table 6.3: Exchangeable K status of analyzed samples by MSTLs during 2022-2023 (following loamy to clayey soils upland crops)

Name of MSTL	Working area			No. of sample	Exchangeable K (cmole+/kg)						
	Division	District	Upazilla		VL	L	M	K deficient samples	Opt	H	VH
					No. and percentage						
Kirtankhola Rabi.22	Barishal	Bhola	Doulatkhan	50	5	21	13	39	3	3	5
		Barguna	Sadar	50	1	11	7	19	14	10	7
		Patuakhali	Sadar	50	0	7	17	24	8	8	10
		Jhalokati	Sadar	50	0	13	11	24	12	7	7
		Total	4 Upz	400	6	52	48	106	37	28	29
	Parcent				3.00	26.00	24.00	53.00	18.50	14.0	14.50

Note: deficient sample = vl+l+m

Table 6.4: Available P status of analyzed samples by MSTLs during 2022-2023 (following loamy to clayey soils upland crops)

Name of MSTL	Working area			No. of sample	Phosphorus P (ppm)						
	Division	District	Upazilla		VL	L	M	P deficient samples	Opt	H	VH
					No. and percentage						
Kirtankhola Rabi.22	Barishal	Bhola	Doulatkhan	50	8	21	8	37	3	6	4
		Barguna	Sadar	50	12	9	8	29	4	3	14
		Patuakhali	Sadar	50	21	5	12	38	4	2	6
		Jhalokati	Sadar	50	5	11	8	24	4	5	17
		Total	4 Upz	200	46	46	36	128	15	16	41
	Parcent				23.00	23.00	18.00	64.00	7.50	8.00	20.50

Table 6.5: Available S status of analyzed samples by MSTLs during 2022-2023 (following loamy to clayey soils upland crops)

Name of MSTL	Working area			No. of sample	Sulfur S (ppm)						
	Division	District	Upazilla		VL	L	M	S deficient samples	Opt	H	VH
Kirtankhola Rabi.22	Barishal				No. and percentage						
		Bhola	Doulatkhan	50	12	31	7	50	0	0	0
		Barguna	Sadar	50	3	22	14	39	4	5	2
		Patuakhali	Sadar	50	4	19	8	31	3	3	13
		Jhalokati	Sadar	50	12	32	4	48	2	0	0
		Total	4 Upz	200	31	104	33	168	9	8	15
		Parcent	15.50	52.00	16.50	84.00	4.50	4.00	7.50		

Table-7. Prepared and distributed fertilizer recommendation card

Name of Client	No of card
Soil test based	1,046
OFRS based	-
Upazila land and soil resource utilization guide based	250
Total	1,296

Table-8. Training provided by the laboratories

Division	Laboratory	Topic	No. of trainee
Barishal	Div. Lab. Barishal	Soil samples collection and balanced fertilizer use	240
		Identification of Adulterated fertilizer	-
	Reg. Lab. Patuakhali	Soil samples collection and balanced fertilizer use	50
		Identification of Adulterated fertilizer	-
Total:			290

Table- 9. Training received by the laboratory staff

Topic	No. of trainee
Officer	
Conduct and Discipline	3
Total	3
Staff	
Assist in Lab. Work	4
Total	4

Table-10. Source and quantity of analyzed fertilizer samples in 2022-2023

Div. Lab. Barishal	Name of fertilizers	Total			Port			DAE (UAO)			Others source		
		Total	Std	Sub-std	Total	Std	Sub-std	Total	Std	Sub-std	Total	Std	Sub-std
	Urea	30	30	0	-	-	-	30	30	0	-	-	-
	TSP	42	42	0	-	-	-	42	42	0	-	-	-
	DAP	41	41	0	-	-	-	41	41	0	-	-	-
	MOP	32	32	0	-	-	-	32	32	0	-	-	-
	Gypsum	20	11	9	-	-	-	20	11	9	-	-	-
	MgSO ₄	16	16	0	-	-	-	16	16	0	-	-	-
	ZnSO ₄ mono hyate	46	24	22	-	-	-	46	24	22	-	-	-
	ZnSO ₄ heptahydrate	3	2	1	-	-	-	3	2	1	-	-	-
	Chelated zinc	3	1	2	-	-	-	3	1	2	-	-	-
	Solubor boron	21	16	5	-	-	-	21	16	5	-	-	-
	Boric acid	11	11	0	-	-	-	11	11	0	-	-	-
	K ₂ SO ₄	2	2	0	-	-	-	2	2	0	-	-	-
	NPKS	6	0	6	-	-	-	6	0	6	-	-	-
	Grand Total	273	228	45	-	-	-	273	228	45	-	-	-

Table- 10. Quality of analyzed fertilizer sample

Name of fertilizer	Amount		
	Total	Standard	Sub-standard
Urea	30	30	0
TSP	42	42	0
DAP	41	41	0
MOP	32	32	0
Gypsum	20	11	9
MgSO ₄	16	16	0
ZnSO ₄ monohyate	46	24	22

Name of fertilizer	Amount		
	Total	Standard	Sub-standard
ZnSO ₄ heptahydrate	3	2	1
Chelated zinc	3	1	2
Solubor boron	21	16	5
Boric acid	11	11	0
K ₂ SO ₄	2	2	0
NPKS	6	0	6
Grand Total	273	228	45

Table- 11. Revenue earning

Source	Tk.
Soil	61,633/-
Water	220/-
Plant	-
Fertilizer	1,73,950/-
Total	2,35,803/-

12. Change in soil analytical data of Agailjhara upazila land and soil resource utilization guide updating program compare 1999 to 2022

Table-12.1 Change in soil analytical data of pH, OM, N and P

Name of soil series and land type		pH range		EC		SOM%		TN%		P(ppm)	
		1999	2022	1999	2022	1999	2022	1999	2022	1999	2022
Soil series	Land type	Upazilla: Agailjhara, Barishal									
Sara	High land	6.2-8.3	7.0	0.65	0.44	1.28	1.80	0.073	0.090	4.00	34.9
	Medium high land	7.5-8.5	6.4-6.8	1.35	1.65	2.02	2.83	0.112	0.141	5.25	16.3
Gopalpur	Medium high land	6.0-7.6	6.2-6.8	1.06	1.29	2.58	2.74	0.127	0.137	7.60	17.23
Muladi	Medium high land	5.6-5.9	6.3-6.7	0.90	1.00	1.67	2.18	0.106	0.109	6.00	9.80
Batajor	Medium high land	5.2-7.1	5.7-6.7	1.69	1.30	3.28	3.61	0.131	0.180	9.14	18.52
	Medium low land	5.6-7.0	5.5-6.5	1.75	1.99	4.02	4.49	0.125	0.224	3.50	9.81
Wazirpur	Medium low land	5.3-7.2	7.5-6.2	2.19	1.70	4.44	5.44	0.129	0.272	4.54	7.48
Bagda	Medium low land	5.5-7.7	5.2-6.6	3.50	1.69	4.32	4.94	0.119	0.247	4.71	7.69
Poisa	High low land	5.3-7.0	5.3-6.4	2.00	2.16	5.08	9.51	0.155	0.475	6.29	6.16
Magra	Medium low land	5.5-6.7	5.3-5.8	2.12	2.92	5.19	6.81	0.145	0.341	3.45	3.88
	Low land	5.1-7.5	5.3-6.0	2.37	3.68	5.22	17.77	0.119	0.888	5.36	5.20
Harta	Medium	4.7	5.3-6.1	13.30	4.45	18.90	18.93	0.182	0.934	8.00	4.17

Name of soil series and land type		pH range		EC		SOM%		TN%		P(ppm)	
		1999	2022	1999	2022	1999	2022	1999	2022	1999	2022
Soil series	Land type	Upazilla: Agailjhara, Barishal									
	low land										
	Low land	5.1-5.7	5.2-5.6	3.45	3.46	6.60	13.73	0.115	0.687	2.50	5.47
Satla	Low land	4.4-5.0	5.5-5.9	9.20	1.37	29.82	17.94	0.154	0.897	7.75	6.67

Table 12.2: Nutrient changing pattern (average values) of S, K, Ca, Mg in different soil series between the year 1998 and 2022

Name of soil series and land type		S (ppm)		K (cmole+/kg)		Ca (cmole+/kg)		Mg (cmole+/kg)			
		1999	2022	1999	2022	1999	2022	1999	2022		
Soil series	Land type	Upazilla: Agailjhara, Barishal									
Sara	High land	15.0	6.1	0.12	0.09	11.25	10.43	31.12	4.06		
	Medium high land	80.75	11.1	0.17	0.25	20.75	20.10	2.70	3.45		
Gopalpur	Medium high land	62.20	12.08	0.22	0.25	15.90	13.61	3.05	2.87		
Muladi	Medium high land	106.50	9.83	0.39	0.22	17.0	13.60	3.38	2.87		
Batajor	Medium high land	112.19	11.61	0.31	0.23	15.29	11.08	2.58	2.12		
	Medium low land	142.68	16.68	0.27	0.25	14.17	15.26	2.47	2.75		
Wazirpur	Medium low land	113.18	18.13	0.30	0.31	14.32	18.76	2.51	3.48		
Bagda	Medium low land	88.85	16.13	0.23	0.23	12.0	11.89	2.41	2.00		
Poisa	High low land	150.47	19.87	0.25	0.23	12.19	17.47	2.00	2.87		
Magra	Medium low land	105.63	27.83	0.28	0.28	12.91	19.62	2.58	2.77		
	Low land	136.36	27.86	0.31	0.27	13.36	25.78	2.24	3.95		
Harta	Medium low land	555.0	33.97	0.65	0.31	31.50	23.43	5.25	3.83		
	Low land	158.0	34.87	0.32	0.29	13.88	27.80	2.40	4.14		
Satla	Low land	458.25	27.5	0.59	0.25	38.13	21.16	6.44	3.37		

Table 12.3: Nutrient changing pattern (average values) of B, Zn, Cu, Fe, Mn in different soil series between the year 1998 and 2022

Name of soil series and land type		B(ppm)		Zn(ppm)		Cu(ppm)		Fe(ppm)		Mn (ppm)	
		1999	2022	1999	2022	1999	2022	1999	2022	1999	2022
Soil series	Land type	Upazilla: Agailjhara, Barishal									
Sara	High land	0.15	0.35	0.71	0.12	2.00	1.47	54.0	69.72	18.6	12.26
	Medium high land	0.14	0.25	0.21	0.25	2.22	1.70	19.12	82.71	7.28	10.79
Gopalpur	Medium high land	0.28	0.61	0.68	0.46	4.02	1.75	47.76	76.57	10.4	15.27
Muladi	Medium high land	0.33	0.48	0.36	0.43	5.55	1.96	83.20	80.42	19.25	14.72
Batajor	Medium high land	0.67	0.75	0.97	0.72	4.07	1.67	77.66	77.44	13.20	11.68

Name of soil series and land type		B(ppm)		Zn(ppm)		Cu(ppm)		Fe(ppm)		Mn (ppm)	
		1999	2022	1999	2022	1999	2022	1999	2022	1999	2022
Soil series	Land type	Upazilla: Agailjhara, Barishal									
	Medium low land	0.65	0.81	0.40	0.66	4.91	2.12	92.55	81.87	12.40	16.07
Wazirpur	Medium low land	0.62	0.83	0.76	0.54	5.13	4.74	96.92	84.04	13.65	15.36
Bagda	Medium low land	1.45	0.80	0.28	0.80	2.53	2.76	80.86	82.32	9.48	12.21
Poisa	Medium low land	0.74	0.69	0.59	0.71	3.88	2.86	102.71	82.82	12.67	12.77
Magra	Medium low land	1.02	0.36	1.32	0.68	3.94	2.70	107.40	84.06	14.40	9.82
	Low land	1.25	0.54	0.89	0.70	4.40	3.01	139.54	83.94	10.18	11.15
Harta	Medium low land	8.80	0.30	0.76	0.49	1.50	2.86	10.40	82.38	2.24	11.76
	Low land	1.75	0.32	1.87	0.61	6.25	2.07	206.8	84.71	8.0	9.63
Satla	Low land	7.52	0.81	2.54	0.44	1.20	3.39	433.17	396.36	5.60	12.34