

Laboratories involved in Khulna Division

- Divisional Laboratory, Khulna
- Regional Laboratory, Jashore
- Regional Laboratory, Jhenaidah
- Regional Laboratory, Kushtia

Proforma for sending information to prepare annual progress report 2022-2023, Divisinal laboratory, Khulna.

**Table-1.
Working Scientists and Staffs of Khulna Division.**

Name of the Laboratories	Designation	Post		
		Total	Fill	Vacant
Officers				
Khulna Division (Including Khulna, Jashore, Jhenaidah and Kushtia Laboratory)	Chief scientific officer (CSO)	01	-	01
	Principal scientific officer (PSO)	04	03	01
	Senior scientific officer (SSO)	09	02	07
	Scientific Officer (SO)	15	08	07
Staffs				
Khulna Division (Including Khulna, Jashore, Jhenaidah and Kushtia Laboratory)	Senior Lab Technician	01	01	-
	Administrative Officer	01	-	01
	Laboratory Assistant	01	01	-
	Computer Operator	02	02	-
	UDA Cum Accountant	01	01	-
	Office Assistant Cum Computer Typist	02	-	02
	Store Keeper	03	01	02
	Office Assistant cum Store Keeper	01	01	-
	Driver	01	01	-
	Laboratory Attendant	06	05	01
	Office Assistant	04	01	03
	Guard	04	02	02
	Mali	01	-	01
	Cleaner	04	01	03
Grand Total		61	30	31

**** Outsourcing – 02**

Table-2. Analyzed soil samples in static laboratory

Sources of soil sample	No. of sample	No. of ingredient
Farmers		
Direct	1,147	9,192
DAE	85	744
SRDI	18	162
SRDI		
Upazila land and soil resource utilization guide	1,376	17,242
Others	16	154
Research institute		
BARI		
BRRI		
Others	40	470
University (Teacher/Student)	98	957
GOs	276	1,755
Project (DAE)	2	28
NGOs	41	120
Private		
Quality control	37	168
Total	3,136	30,992

Table 2.1 Soil pH status of farmer's samples

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
1250	-	-	22	499	725	4	-
%	-	-	1.8%	39.9%	58.0%	0.3%	

Table 2.2 Soil EC status of farmer's samples

Sample	Non Saline	Very Slightly Saline	Slightly Saline	Medium	Strongly	Very strongly
	0.0-2.0	2.1-4.0	4.1-8.0	8.1-12.0	12.1-16.0	>16.0
330	198	87	30	5	6	4
%	60.0%	26.4%	9.1%	1.5%	1.8%	1.2%

Table 2.3 Soil OM status of farmer's samples

Sample	Very Low	Low	Medium	High	Very High
	<1.0%	(1.0-1.7)%	(1.7-3.4)%	(3.4-5.5)%	>5.5%
1250	159	631	446	14	-
%	12.7%	50.5%	35.7%	1.1%	-

Table 2.4 Total N status of farmer's samples

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
1250	185	1029	34	2	-	-
%	14.8%	82.3%	2.7%	0.2%	-	-

Table 2.5 Available P status of farmer's samples

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
1250	47	115	217	216	260	395
%	3.8%	9.1%	17.4%	17.3%	20.8%	31.6%

Table 2.6 Exchangeable K status of farmer's samples

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
1250	33	338	409	313	98	59
%	2.6%	27.1%	32.7%	25.1%	7.8%	4.7%

Table 2.7 Available S status of farmer's samples

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
1250	280	205	225	163	138	239
%	22.4%	16.4%	18.1%	13.0%	11.0%	19.1%

Table 2.8 Available Zn status of farmer's samples

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<0.45	0.451-0.90	0.91-1.35	1.351-1.80	1.81-2.25	>2.25
1250	68	290	289	129	156	318
%	5.4%	23.2%	23.1%	10.3%	12.6%	25.4%

Table 2.9 Available B status of farmer's samples

Sample	Very Low	Low	Medium	Optimum	High	Very High
	<0.15	0.151-0.30	0.31-0.45	0.451-0.60	0.61-0.75	>0.75
1250	25	132	219	163	222	489
%	2.0%	10.6%	17.5%	13.0%	17.8%	39.1%

Table-3. Analyzed plant samples

Source of sample	No of sample	No of ingredient
	-	-
Total	-	-

Table- 4. Analyzed water samples

Source of sample	No. of sample	No. of ingredient
Farmer direct	12	15
BFRI	15	165
Student	22	88
Others	25	50
Total	74	318

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

Division	Laboratory	Name of Upazila	Sample	Status
Khulna	Divisional laboratory, Khulna**	Kulaura, Moulabhibazar	215	Sent
		Potuakhali Sadar, Potuakhali	137	Sent
	Regional Laboratory, Jashore	Avoyagar, Jashore	109	Sent
		Keshobpur, Jashore	111	Sent
	Regional Laboratory, Jhenaidah	Kotchadpur, Jhenaidah	102	Sent
		Shibpur, Norsingde	176	Sent
		Baliakandi, Rajbari	120	Sent
		Boalmari, Foridpur	132	Pending
	Regional Laboratory, Kushtia	Meherpur Sadar	120	Sent
		Gangni, Meherpur	154	Pending
Total			1,376	

** Union Sohaika analysis – 338

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

MSTL	Season	Working area					
		District	Upazila/Block	Sample		Card	
Rupsa	Rabi/2022			Rabi	Kharif	Rabi	Kharif
		Kushtia	Kushtia Sadar	50	-	50	-
		Chuadanga	Chuadanga Sadar	50	-	50	-
		Jhenaidah	Jhenaidah Sadar	51	-	51	-
		Jashore	Keshabpur	49	-	49	-
		Narail	Kalia	53	-	53	-
		Khulna	Dumuria	58	-	58	-
		Satkhira	Taala	50	-	50	-
	Bagerhat	Bagerhat Sadar	55	-	55	-	
	Kharif/2023	Chuadanga	Parkrishnopur union, Damurhuda	-	50	-	50
		Jhenaidah	Ganna Union, Jhenaidah Sadar	-	50	-	50
		Jashore	Jhikargacha	-	49	-	49
		Khulna	Digholia	-	50	-	50
	Total			416	199	416	199
Grand Total			615		615		

Table 6.1 EC (Salinity) status of analyzed soil samples

MSTL	Sample	EC(dS/m)					
		NS	VSS	SS	MS	StS	VStS
		0.0-2.0	2.1-4.0	4.1-8.0	8.1-12.0	12.1-16.0	>16.0
Rabi/2022	163	104	20	29	7	2	1
	%	63.8%	12.3%	17.8%	4.3%	1.2%	0.6%
Kharif/2023	50	25	7	10	5	1	2
	%	50.0%	14.0%	20.0%	10.0%	2.0%	4.0%

Table 6.2 pH (Salinity) status of analyzed soil samples

MSTL	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
Rabi/2022	416	0	2	7	93	314	0	0
	%	0	0.5%	1.7%	22.3%	75.5%	0	0
Kharif/2023	199	0	0	0	51	148	0	0
	%	0	0	0	25.6%	74.4%	0	0

Table 6.3 Available P status of analyzed soil samples

MSTL	Sample	Very low	Low	Medium	Optimum	High	Very high
		<5.25	5.25-10.5	10.51-15.75	15.76-21.0	21.1-26.25	>26.25
Rabi/2022	416	23	56	57	46	53	181
	%	5.6%	13.5%	13.7%	11.0%	12.7%	43.5%
Kharif/2023	199	3	12	22	36	11	115
	%	1.5%	6.0%	11.0%	18.1%	5.5%	57.8%

Table 6.4 Exchangeable K status of analyzed soil samples

MSTL	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
Rabi/2022	416	7	70	95	105	45	94
	%	1.7%	16.8%	22.8%	25.3%	10.8%	22.6%
Kharif/2023	199	11	29	53	42	24	40
	%	5.5%	14.6%	26.6%	21.1%	12.1%	20.1%

Table 6.5 Available S status of analyzed soil samples

MSTL	Sample	Very low	Low	Medium	Optimum	High	Very high
		<7.5	7.51-15.0	15.1-22.5	22.51-30	30.1-37.5	>37.5
Rabi/2022	416	68	78	64	41	20	145
	%	16.3%	18.8%	15.4%	9.9%	4.8%	34.8%
Kharif/2023	199	0	64	44	17	11	63
	%	0	32.2%	22.1%	8.5%	5.5%	31.7%

Table-7. Prepared and distributed fertilizer recommendation card

Name of Client	No of card
Soil test based	898
OFRS based	369
Upazila land and soil resource utilization guide based	-
Total	1267

Khulna Divisional Laboratory

8. Training

Table-8.1 Training provided by the laboratories

Topic	No. of trainee
Soil samples collection and balanced fertilizer use	50
Soil samples collection and balanced fertilizer use & identification of adulterated fertilizer	240
Total	290

Table- 8.2 Training received by the laboratory staff

Topic	No. of trainee
Officer	
1. Rules & Regulations for Organizational Management (NATA)	01 (05 Days)
2. Conduct & Discipline Course (RPATC)	02 (05 Days)
3. Management of Problematic Soil for DAE & SRDI Officials (GKBSP)	02 (02 Days)
4. Training on web portal Management on Zoom Platform (SRDI)	01 (01 Days)
Total: 04	06 (13 Days)
Staff	
1. Training on newly created three laboratories strengthening program	03 (02 Days)
Total: 01	03 (02 Days)

Jashore Laboratory

Table-8.1 Training provided by the laboratories

Topic	No. of trainee
Soil samples collection and balanced fertilizer use	25
Identification of Adulterated fertilizer	25
Total	50

Table- 8.2 Training received by the laboratory staff

Topic	No. of trainee
Officer	
Human Resource Development (NATA)	01 (05 Days)
Training on web portal Management on Zoom Platform	01
Total	02
Staff	
Training on newly created three laboratories strengthening program	1
Total	1

Jhenaidah Laboratory

Table-8.1 Training provided by the laboratories

Topic	No. of trainee
Soil samples collection and balanced fertilizer use	25
Identification of Adulterated fertilizer	25
Total	50

Table- 8.2 Training received by the laboratory staff

Topic	No. of trainee
Officer	
Training on web portal Management on Zoom Platform	1
Total	1
Staff	
Fundamental training	1
Information and Communication Technology ICT Course	1
Training on newly created three laboratories strengthening program	1
Total	3

Kushtia Laboratory

Table-8.1 Training provided by the laboratories

Topic	No. of trainee
Soil samples collection and balanced fertilizer use	2*25=50
Identification of Adulterated fertilizer	-
Total	50

Table- 8.2 Training received by the laboratory staff

Topic	No. of trainee
Officer	
Training on web portal Management on Zoom Platform	01
Total	01
Staff	
Training on newly created three laboratories strengthening program	01
Total	01

Table-9. Source and quantity of analyzed fertilizer samples

Name of fertilizers	Source	Amount		
		Total	Standard	Sub-standard
Urea	DAE (Registration)	18	18	-
	DAE (UAO)	7	7	-
	Port	9	9	-
Total		34	34	-
TSP	Port	1	1	-
	DAE (UAO)	28	27	1
Total		29	28	1
DAP	DAE (Registration)	-	-	-
	DAE (UAO)	30	30	-
Total		30	30	-
MoP	DAE (Registration)	-	-	-
	DAE (UAO)	19	19	-
Total		19	19	-
Gypsum	Private	2	2	-
	DAE (UAO)	20	6	14
	Port	1	1	-
Total		23	9	14
MgSO ₄	Port	1	1	-
	DAE (UAO)	57	53	4
	Private	1	1	-
Total		59	55	4
ZnSO ₄ Monohydrate	Police	4	-	4
	DAE (UAO)	205	-	205
	Private	8	-	8
	DAE (DD)	2	-	2
Total		219	-	219
ZnSO ₄ Heptahydrate	Port	1	1	-
	DAE (UAO)	14	8	6
	Private	6	2	4
	Police	1	-	1
Total		22	11	11
Chelated zinc	DAE (Registration)	1	-	1
	DAE (UAO)	8	2	6
	Port	1	1	-
Total		10	3	7
Solubor boron	Private	1	1	-
	DAE (UAO)	53	39	14
Total		54	40	14
Boric acid	Private	1	1	-
	DAE (UAO)	22	4	18
Total		23	5	18
Fertibor/Borfa boron	DAE (Registration)	-	-	-
	DAE (UAO)	3	2	1
Total		3	2	1

Organic fertilizer	JUST	4	1	3
	DAE (UAO)	8	4	4
	Private	4	1	3
Total		16	6	10
K ₂ SO ₄	DAE (Registration)	-	-	-
	DAE (UAO)	1	1	-
Total		1	1	-
(NH ₄) ₂ SO ₄	DAE (Registration)	-	-	-
	DAE (UAO)	1	1	-
Total		1	1	-
NPKS	KUET	19	19	-
	DAE (UAO)	5	2	3
Total		24	21	3
Dolomite	DAE (Registration)	-	-	-
	Police	1	1	-
Total		1	1	-
Grand Total		568	266	302

Table- 10. Quality of analyzed fertilizer sample

Name of fertilizer	Amount		
	Total	Standard	Sub-standard
Urea	34	34	-
TSP	29	28	1
DAP	30	30	-
MoP	19	19	-
Gypsum	23	9	14
MgSO ₄	59	55	4
ZnSO ₄ monohdrate	219	-	219
ZnSO ₄ heptahydrate	22	11	11
Chelated zinc	10	3	7
Solubor boron	54	40	14
Boric acid	23	5	18
Fertibor/Borfa Boron	3	2	1
Organic fertilizer	16	6	10
K ₂ SO ₄	1	1	-
MAP	-	-	-
(NH ₄) ₂ SO ₄	1	1	-
NPKS	24	21	3
Dolomite	1	1	-
Silvamix port	-	-	-
Nutraphos-N	-	-	-
Nutraphos - 24	-	-	-
	-	-	-
Grand Total	568	266	302

Table- 11. Revenue earned

Source	(Tk.)
Soil	3,04,432/-
Water	12,440/-
Plant	-
Fertilizer	4,37,451/-
Total	7,54,323/-

Table-12: Change in soil analytical data of Upazila land and soil resource utilization guide updating program compare to previous recent one**Table-12.1 Change in soil analytical data of pH, SOM, N and P. (Khulna Divisional Lab)**

Name of soil series and land type	pH range		EC range		SOM%		TN%		P(ppm)	
	2005	2023	2005	2023	2005	2023	2005	2023	2005	2023
Upazila-1: Potuakhali Sadar, Potuakhali										
Ramgoti HL	7.9	5.8-6.8	2.1	0.7-1.6	1.47	1.62	0.082	0.094	4.14 (O)	7.61 (O) 6.78 (B)
Ramgoti MHL	5.3-8.2	5.3-7.3	1.1-8.1	1.3-8.6	1.38	1.50	0.089	0.087	4.91 (O) 3.33 (B)	6.76 (O) 4.94 (B)
Jhalkathi MHL	4.2-7.8	4.4-7.0	0.8-10.6	0.9-11.2	1.72	1.89	0.115	0.110	5.37 (O) 2.88 (B)	8.24 (O) 3.95 (B)
Barishal MHL (Normal)	4.0-7.1	4.7-5.6	1.2-9.9	1.1-7.0	1.91	1.85	0.130	0.107	2.87 (O) 2.23 (B)	2.92 (B)
Barishal MHL (Late)	4.8	-	2.0	-	2.06	-	0.134	-	1.51 (B)	-
Polimati MHL	7.4-8.0	6.3-7.1	1.6-5.4	1.8-3.8	1.19	1.37	0.062	0.074	6.44 (O)	6.38 (O) 3.17 (B)
Polimati MLL	-	7.3-7.7	-	1.6-4.1	-	1.27	-	0.107	-	7.51 (O)

Table-12.2 Change in soil analytical data of K, S, Ca and Mg. (Khulna Divisional Lab)

Name of soil series and land type	K(cmole+/kg)		S(ppm)		Ca(cmole+/kg)		Mg(cmole+/kg)	
	2005	2023	2005	2023	2005	2023	2005	2023
Upazila-1: Potuakhali Sadar, Potuakhali								
Ramgoti HL	0.26	0.23	117.75	63.19	18.0	25.22	1.75	5.02
Ramgoti MHL	0.24	0.20	134.32	165.02	13.66	27.20	2.20	5.23
Jhalkathi MHL	0.31	0.31	153.09	150.01	9.22	22.86	4.01	5.83
Barishal MHL (Normal)	0.36	0.37	164.35	138.64	10.54	23.18	4.38	6.21
Barishal MHL (Late)	0.13	-	148.48	-	6.50	-	1.75	-
Polimati MHL	0.25	0.24	116.33	57.09	18.83	14.80	2.00	6.20
Polimati MLL	-	0.20	-	72.10	-	23.18	-	6.67

Table-12.3 Change in soil analytical data of B, Zn, Cu, Fe and Mn. (Khulna Divisional Lab)

Name of soil series and land type	B(ppm)		Zn(ppm)		Cu(ppm)		Fe(ppm)		Mn(ppm)	
	2005	2023	2005	2023	2005	2023	2005	2023	2005	2023
Upazila-1: Potuakhali Sadar, Potuakhali										
Ramgoti HL	0.68	0.61	0.16	0.35	2.32	4.14	17.40	86.13	57.24	18.22
Ramgoti MHL	0.66	0.86	0.30	0.27	3.34	3.69	27.09	53.57	25.35	15.15
Jhalkathi MHL	0.71	0.89	0.68	0.63	6.54	6.52	138.44	142.15	32.31	23.18
Barishal MHL (Normal)	0.61	1.08	0.87	0.82	8.25	7.09	189.04	173.14	38.20	28.48
Barishal MHL (Late)	0.70	-	1.08	-	8.54	-	255.01	-	44.90	-
Polimati MHL	0.59	0.99	0.27	0.16	3.05	3.24	18.13	19.09	39.70	6.12
Polimati MLL	-	0.90	-	0.25	-	3.62	-	21.32	-	6.93

Table-12.1 Change in soil analytical data of pH, SOM, N and P. (Jhenaidah Lab)

Name of soil series and land type	pH range		Exchangeable Acidity		SOM%		TN%		P(ppm)	
	1999	2021	1999	2021	1999	2021	1999	2021	1999	2021
Upazila-1: Shibpur, Norsingde										
Tejgong HL	4.7-6.5	4.8-6.0	0.38	0.74	1.68	1.63	0.11	0.09	32	17.36
Blabo HL	4.6-6.5	4.7-6.4	0.34	0.48	1.62	2.74	0.09	0.15	25	31.73
kolma MHL	4.6-6.2	4.7-5.3	0.45	0.34	2.21	2.66	0.15	0.15	8	16.49
Khilgon MHL	5.8	4.8-5.2	0.58	0.56	2.36	2.99	0.15	0.17	1	6.29
Khilgon MLL	5.0-6.2	4.8-5.6	0.74	0.71	2.56	2.82	0.18	0.16	2	6.34
Khilgon LL	5.1-5.7	4.7-6.5	0.38	1.03	3.98	2.36	0.18	0.13	4	3.91
Sherpur HL	5.5	5.7	-	-	1.83	1.07	0.13	0.06	36	5.63
Sonatala HL	4.6-6.0	4.5-5.8	0.23	0.22	1.95	2.10	0.13	0.12	14	32.05
Sonatala MHL	4.5-6.3	4.9-5.9	0.28	0.28	1.71	1.82	0.10	0.10	35	14.04
Shilmondi HL	5.2	5.6	0.20	-	2.19	2.37	0.14	0.13	3	23.29
Shilmondi MHL	4.9-6.4	4.2-6.4	0.10	0.31	1.92	1.79	0.11	0.10	14	11.54
Shilmondi MLL	5.2-6.4	5.0-5.9	0.04	0.34	2.05	2.19	0.12	0.12	32	6.78
Tengachar HL	4.9-5.2	5.2-5.4	2.05	0.24	1.55	1.93	0.12	0.11	25	44.45
Naraibug MLL	5.0-7.5	4.7-6.5	0.09	0.11	3.05	3.06	0.17	0.17	13	5.90
Nararbug LL	5.4-6.4	4.6-6.1	0.20	0.26	3.01	3.68	0.14	0.21	5	5.42
Khalerchar VLL	4.9	5.3-5.6	0.30	0.04	4.81	3.85	0.13	0.22	4	2.23
Ghorargaw VLL	5.4	5.7	0.20	-	4.38	2.95	0.24	0.17	3	8.05

** Nitrogen can not be compared because it is analyzed in two different methods (Ammonium Nitrogen and Total Nitrogen).

Table-12.2 Change in soil analytical data of K, S, Ca and Mg. (Jhenaidah Lab)

Name of soil series and land type	K(cmole+/kg)		S(ppm)		Ca(cmole+/kg)		Mg(cmole+/kg)	
	1999	2021	1999	2021	1999	2021	1999	2021
Upazila-1 Shibpur, Norsingde								
Tejgong HL	0.24	0.23	16	30.20	3.32	2.34	1.49	0.88
Blabo HL	0.32	0.16	11	29.46	2.56	5.11	0.91	1.11
kolma MHL	0.11	0.15	32	40.40	4.0	4.29	1.48	1.08
Khilgon MHL	2.9	0.11	35	25.35	2.4	4.77	9.00	1.93
Khilgon MLL	0.13	0.10	47	39.60	6.4	6.80	2.36	1.89
Khilgon LL	0.13	0.17	50	39.27	6.0	8.22	0.92	2.72
Sherpur HL	0.10	0.07	10	46.98	5.5	3.59	1.80	1.85
Sonatala HL	0.11	0.17	22	41.30	4.4	5.35	1.95	1.08
Sonatala MHL	0.19	0.11	16	23.77	5.1	3.84	2.0	1.0
Shilmondi HL	0.08	0.15	1	47.03	5.0	1.71	2.45	0.55
Shilmondi MHL	0.11	0.15	25	28.65	6.7	9.52	2.46	1.50
Shilmondi MLL	0.17	0.14	67	38.50	6.7	7.06	2.73	1.93
Tengachar HL	0.07	0.12	22	28.33	3.75	3.01	1.53	0.94
Naraibug MLL	0.16	0.17	50	35.49	9.2	8.55	3.57	2.19
Nararbug LL	0.12	0.20	71	28.61	8.5	9.9	3.25	2.87
Khalerchar VLL	0.15	0.22	252	25.39	16.5	10.4	4.20	2.90
Ghorargaw VLL	0.16	0.11	73	19.89	12.5	4.44	4.55	1.48

Table-12.3 Change in soil analytical data of B, Zn, Cu, Fe and Mn. (Jhenaidah Lab)

Name of soil series and land type	B(ppm)		Zn(ppm)		Cu(ppm)		Fe(ppm)		Mn(ppm)	
	1999	2021	1999	2021	1999	2021	1999	2021	1999	2021
Upazila-1: Shibpur, Norsingde										
Tejgaon HL	0.29	0.61	1.7	2.38	1.9	0.94	113	84.62	46	75.58
Blabo HL	0.47	0.74	1.52	2.51	1.0	1.36	107	91.23	37	66.57
kolma MHL	0.35	0.78	2.41	2.77	3.4	2.40	133	91.12	32	44.50
Khilgon MHL	0.36	0.65	0.80	2.59	3.8	2.2	86	125.05	120	59.14
Khilgon MLL	0.42	0.54	2.57	2.57	4.5	2.79	157	113.25	31	51.19
Khilgon LL	0.46	0.56	-	2.21	5.5	3.54	175	96.23	18	48.79
Sherpur HL	0.30	0.61	-	2.26	1.8	3.91	122	107.20	22	48.61
Sonatala HL	0.32	0.57	1.12	1.79	2.5	3.04	167	92.35	20	47.49
Sonatala MHL	0.29	0.52	1.39	1.42	2.1	3.06	138	96.32	22	41.02
Shilmondi HL	0.38	0.70	0.9	0.28	4.0	3.20	140	102.86	11	23.36
Shilmondi MHL	0.42	0.80	1.1	2.34	2.9	3.43	118	114.02	19	41.49
Shilmondi MLL	0.41	0.77	1.2	1.59	2.9	2.45	119	150.11	30	47.76
Tengachar HL	0.28	0.68	1.4	1.61	1.9	2.45	207	86.45	21	51.66
Naraibug MLL	0.54	0.51	1.1	1.42	5.2	3.72	160	144.17	22	50.02
Nararbug LL	0.85	0.85	1.19	1.45	6.9	3.34	191	149.02	23	51.81
Khalerchar VLL	2.96	0.75	1.4	2.14	2.5	5.90	488	170.58	15	57.12
Ghorargaw VLL	0.92	0.44	1.3	0.51	12.8	1.99	227	122.55	29	43.58

Table 12.1: Nutrient changing pattern (average values) of pH, SOM, TN, P of **Meherpur Sadar** Upazila between 1991 and 2023. (**Kushtia Lab**)

Name of soil series and land type	pH range		SOM%		TN%		P(ppm)	
	1991	2023	1991	2023	1991	2023	1991	2023
Sara HL	6.75	6.9	1.7	2.04	-	-	40	43.55
Gopalpur HL	6.9	7.0	1.4	2.09	-	-	25	46.57
Gopalpur MHL	7.4	7.2	1.8	2.05	-	-	33	52.52
Iswardi HL	7.4	7.3	1.39	1.84	-	-	25	24.06
Iswardi MHL	7.3	7.2	1.67	2.49	-	-	22	34.35
Ghior MHL	7.5	7.1	2.9	2.56	-	-	26	47.66
Ghior MLL	7.3	6.6	2.2	2.25	-	-	35	52.12
Ramdia MLL	7.1	7.0	1.81	2.31	-	-	31	42.2

** Nitrogen can not be compared because it is analyzed in two different methods (Ammonium Nitrogen and Total Nitrogen).

Table 12.2: Nutrient changing pattern (average values) of S, K, Ca, Mg of **Meherpur Sadar** Upazila between 1991 and 2023. (**Kushtia Lab**)

Name of soil series and land type	S(ppm)		K(cmole+/kg)		Ca(cmole+/kg)		Mg(cmole+/kg)	
	1991	2023	1991	2023	1991	2023	1991	2023
Sara HL	22	30.78	0.21	0.27	11.0	15.4	1.4	1.9
Gopalpur HL	22	34.39	0.47	0.36	19.1	23.4	2.4	3.0
Gopalpur MHL	30	29.27	0.20	0.33	21.7	19.3	2.6	3.0
Iswardi HL	25	40.08	0.28	0.36	29.4	30.0	2.7	3.9
Iswardi MHL	19	42.5	0.24	0.43	33.1	27.7	5.0	3.7
Ghior MHL	49	39.28	0.42	0.47	24.4	34.6	3.1	4.7
Ghior MLL	44	44.17	0.48	0.58	19.9	30.6	2.6	4.4
Ramdia MLL	41	59.0	0.37	0.48	9.2	35.5	2.3	5.3

Table 12.3: Nutrient changing pattern (average values) of B, Zn, Cu, Fe, Mn of **Meherpur Sadar** Upazila between 1991 and 2023. (**Kushtia Lab**)

Name of soil series and land type	B(ppm)		Zn(cmole+/kg)		Cu(ppm)		Fe(ppm)		Mn(ppm)	
	1991	2023	1991	2023	1991	2023	1991	2023	1991	2023
Sara HL	0.71	0.45	1.9	1.52	2.4	2.8	33	23.0	18	17.6
Gopalpur HL	0.68	0.41	2.1	1.33	3.3	3.9	30	23.8	18	18.5
Gopalpur MHL	0.66	0.42	1.6	1.53	3.6	4.1	37	20.6	22	30.2
Iswardi HL	0.56	0.37	1.9	0.96	2.5	4.3	19	24.4	13	19.7
Iswardi MHL	0.71	0.51	1.8	1.05	4.2	4.7	33	23.8	19	19.8
Ghior MHL	0.6	0.51	1.6	1.18	7.8	6.1	43	28.1	23	20.0
Ghior MLL	0.6	0.5	1.5	0.9	6.5	4.0	39	25.9	23	20.9
Ramdia MLL	0.62	0.75	1.3	0.87	8.6	4.9	50	16.7	35	25.7

Table12.1: Nutrient changing pattern(average values) of pH, SOM, TN, P in different soil series between the year 2018 and 2022. **(Jashore Lab)**

Name of soil series and land type	pH range		EC range		SOM%		TN%		P(ppm)	
	2022	2018	2022	2018	2022	2018	2022	2018	2022	2018
Keshobpur, Jashore										
Sara HL	6.6-8.3	6.63-8.22	0.48-7.26	0.84	1.94	2.00	0.113	0.100	30.87	15.19
Gopalpur HI	6.9-8.1	7.15-8.17	0.57-4.21	0.97	2.41	2.65	0.140	0.133	29.71	25.12
Gopalpur MHL	7.8-8.6	7.82-8.33	0.69-7.72	0.85	2.02	2.30	0.111	0.115	18.73	15.29
Iswardi HL	7.9-8.1	7.28-8.20	0.76-2.57	0.83	2.95	2.97	0.171	0.149	48.59	14.02
Iswardi MHL	6.7-8.9	7.91-7.95	0.53-4.75	1.03	1.92	3.64	0.110	0.182	30.10	21.63
Ghior MHL	7.1-8.2	7.25-8.01	0.61-5.31	1.34	2.20	3.52	0.124	0.176	28.72	16.60
Ghior MLL	6.7-8.2	7.25-8.19	0.64-9.61	1.54	1.86	3.26	0.101	0.163	47.07	16.32
Narail MLL	7.3-8.4	6.55-7.80	0.82-12.19	4.30	2.04	4.39	0.119	0.219	27.91	23.42
Ramadia MLL	7.8	7.75-8.05	2.21	2.84	1.24	3.14	0.072	0.157	28.53	20.48
Ramadia LL	7.9	7.90-8.12	1.25	2.99	2.36	3.03	0.137	0.152	45.94	10.26
Harta MHL	6.3-7.0	6.26-6.90	3.85-6.20	2.41	6.42	7.16	0.257	0.358	54.60	13.80
Harta LL	6.2	6.6-6.75	1.88	2.13	4.85	6.83	0.192	0.342	6.98	16.98
Satla, MHL	6.4	4.83	4.51	14.04	6.47	32.92	0.263	1.646	13.70	17.92
Satla, LL	4.9	4.35	2.50	15.10	10.32	32.49	0.359	1.674	4.82	18.40

Table12.2: Nutrient changing pattern(average values) of K, S, Ca, Mg in different soil series between the year 2018 and 2022. (Jashore Lab)

Name of soil series and land type	K (cmole+/kg)		S (ppm)		Ca (cmole+/kg)		Mg (cmole+/kg)	
	2018	2022	2018	2022	2018	2022	2018	2022
	Keshobpur, Jashore							
Sara HL	0.16	0.25	24.33	9.45	157.99	10.11	18.93	2.24
Gopalpur HI	0.16	0.30	37.42	39.11	153.47	12.88	15.49	3.06
Gopalpur MHL	0.13	0.28	36.58	40.94	167.65	12.12	15.01	2.81
Iswardi HL	0.20	0.48	42.31	36.38	156.06	14.57	18.65	4.31
Iswardi MHL	0.50	0.34	58.15	42.41	147.63	13.04	16.31	3.06
Ghior MHL	0.38	0.42	37.75	47.45	270.08	15.41	26.27	464
Ghior MLL	0.36	0.41	36.19	32.73	224.04	14.14	20.41	4.61
Narail MLL	0.58	0.60	33.49	28.49	154.14	14.73	15.39	5.58
Ramadia MLL	0.41	0.54	38.71	52.90	220.75	18.17	20.85	4.98
Ramadia LL	0.46	0.42	18.65	39.55	217.50	13.08	22.04	4.95
Harta MLL	0.58	0.53	28.48	59.52	96.44	17.77	12.75	5.97
Harta LL	0.56	0.63	22.57	40.74	102.37	9.30	13.34	7.18
Satla, MLL	0.50	0.84	13.88	23.48	149.75	12.14	13.22	7.30
Satla, LL	0.45	0.52	40.24	51.73	158.00	26.26	14.34	7.11

Table12.3: Nutrient changing pattern(average values) of B, Zn, Cu, Fe, Mn in different soil series between the year 2014 and 2023. **(Jashore Lab)**

Name of soil series and land type	B (ppm)		Zn (ppm)		Cu (ppm)		Fe (ppm)		Mn (ppm)	
	2018	2022	2018	2022	2018	2022	2018	2022	2018	2022
Keshobpur, Jashore										
Sara HL	0.33	0.56	1.16	1.59	1.78	1.36	23.22	15.92	10.40	3.53
Gopalpur HI	0.31	0.73	1.22	1.37	2.65	1.96	25.30	24.30	8.97	3.24
Gopalpur MHL	0.42	0.54	0.93	1.40	1.85	1.87	18.12	23.91	5.12	2.94
Iswardi HL	0.37	0.59	0.93	2.16	2.3	3.25	28.88	32.86	8.77	2.59
Iswardi MHL	0.21	0.77	0.81	1.68	5.36	2.58	44.76	28.64	12.39	3.25
Ghior MHL	0.67	0.94	1.54	1.69	3.58	3.56	35.60	36.10	7.19	4.19
Ghior MLL	0.67	0.72	1.08	1.69	3.10	3.23	31.71	36.99	6.33	3.51
Narail MLL	0.63	0.72	1.59	1.66	4.36	3.53	88.87	36.78	11.16	4.59
Ramadia MLL	0.42	0.65	0.79	0.78	3.61	3.31	32.21	31.22	6.75	3.98
Ramadia LL	0.53	0.69	0.59	3.71	3.77	4.96	21.40	46.73	5.67	2.71
Harta MLL	0.68	0.91	4.93	1.78	4.53	4.07	129.20	50.20	15.06	12.24
Harta LL	0.55	1.13	3.63	1.74	3.87	1.40	113.41	49.56	18.01	16.62
Satla, MLL	0.71	1.20	0.49	4.05	0.19	7.86	388.13	53.81	15.28	32.03
Satla, LL	0.39	1.44	2.16	1.24	0.11	4.68	416.73	56.64	25.14	23.67

Table-13. Target was in 2022-2023 fiscal years

Division	Laboratory	Soil	Plant	Water	Fertilizer	FRC	Revenue Tk.
		(No.)					
Khulna	Divisional Laboratory, Khulna	1,300	-	-	250	1,020	-
	Regional Laboratory, Jashore	320	-	-	250	85	-
	Regional Laboratory, Jhenaidah	840	-	-	-	440	-
	Regional Laboratory, Kushtia	805	-	-	-	400	-
Total		3,265	-	-	500	1,945	-

Table 14. Achievement (No.) in 2022-2023 fiscal years

Division	Laboratory	Soil	Plant	Water	Fertilizer	FRC	Revenue Tk.
		(No.)					
Khulna	Divisional Laboratory, Khulna	1,161	-	52	253	869	3,96,552/-
	Regional Laboratory, Jashore	324	-	12	315	91	2,77,834/-
	Regional Laboratory, Jhenaidah	759	-	-	-	370	34,452/-
	Regional Laboratory, Kushtia	892	-	-	-	405	45,485/-
Total		3,136	-	64	568	1,735	7,54,323/-

Table-15. Achievement (%) in 2022-2023 fiscal years

Division	Laboratory	Soil	Plant	Water	Fertilizer	FRC	Revenue Tk.
		(%)					
Khulna	Divisional Laboratory, Khulna	89.3	-	-	101.2	85.2	-
	Regional Laboratory, Jashore	101.2	-	-	126.0	107.0	-
	Regional Laboratory, Jhenaidah	90.4	-	-	-	74.1	-
	Regional Laboratory, Kushtia	110.8	-	-	-	101.0	-
Total		97.9	-	-	113.6	91.8	-

Table-16. Target for 2023-2024 fiscal years

Division	Laboratory	Soil	Plant	Water	Fertilizer	FRC	Revenue Tk.
		(No.)					
Khulna	Divisional Laboratory, Khulna	880	-	-	250	980	-
	Regional Laboratory, Jashore	320	-	10	250	85	-
	Regional Laboratory, Jhenaidah	800	-	-	-	550	-
	Regional Laboratory, Kushtia	815	-	-	-	350	-
Total		2,815	-	10	500	1,965	-