

Government of Odisha
Department of Agriculture and Farmers' Empowerment
Directorate of Agriculture & Food Production,
Krusha Bhawan, Odisha, Bhubaneswar

No.DAFP-FERT-MISC-0007-2024 -18541 /Agril., dt. 07.05.2024

To,

The Chief District Agriculture Officer (All)
ADA-Soil Chemist (All)
The Regional Manager (Marketing), PPL
Chief Quality Officer, LTC Commercial Company Pvt. Ltd.

Sub: SOP for Soil Sample Collection, Testing, Generation and Distribution of Soil Health Card for the Year 2024-25

Ref: This Directorate Letter No. 15761 dt. 10.04.2024

Sir,

With reference to the subject cited above, it is to inform you that the District wise target for Soil Sample Testing for 2024-25 has already been communicated vide Letter under reference. The entire process starting from soil sample collection to generation & distribution of soil health card will be made through **online mode** in *Agriextension* App and *ADAPT DSS* portal. Accordingly, the Standard Operating Procedure for Soil Sample Collection, Testing, Generation and Distribution of Soil Health Card for the Year 2024-25 is enclosed herewith.

Accordingly you are requested to immediately start the Soil Collection activities in your District such that **at least 70% of the targeted Soil Sample should be collected in Kharif season i.e. before sunset of monsoon.**

Further, along with the SOP issued, Agreement made with Paradeep Phosphate Limited for operation & management of MSTL and Agreement made with LTC Commercial Pvt. Ltd. for operationalization of 19STLs shall also be strictly adhered during execution of the above activities.

Enclosures:

1. SOP for 2024-25
2. Copy of the Agreement with LTC Commercial Company Pvt. Ltd. on 31.05.2022.
3. Copy of the Agreement with Paradeep Phosphate Ltd. on 16.03.2024

Yours faithfully,



Director of Agriculture &
Food Production, Odisha



Standard Operating Procedure for Soil Sample Collection, Testing, Generation & Distribution of Soil Health Card for the Year 2024-25 in the State of Odisha

During 2024-25, entire process starting from soil sample collection to generation & distribution of soil health card in the State will be made through **online mode** in *Agriextension* App and *ADAPT DSS* portal. The standard operating procedures for Soil Sample Collection, Testing, Generation and Distribution of Soil Health Card for the Year 2024-25 is as follows.

A. Target for Soil Testing

1. Presently there are 30 Static Soil Testing Laboratories (STLs), 30 Mobile Soil Testing Laboratories (MSTLs) and 40 Village Level Soil Testing Laboratories (VLSTLs) are operational in the State. Out of the 30 STLs, 19 STLs are operated by out sourcing agency LTC commercial Pvt. Ltd. (**Annexure-I**) and remaining 11 old STLs are operated by Govt. functionaries (**Annexure-II**). All 30 MSTLs are operated by the Paradeep Phosphate Limited.
2. It has been targeted to analyze **5.70 lakh Nos** of soil samples in the State during 2024-25. The district wise and laboratory wise target has been communicated vide Letter No. DAFP-FERT-MISC-007-2024-15761 dt. 10.04.2024 and it shall also be assigned through ADAPT DSS portal from this Directorate level.
3. After completion of target assignment at State level, the districts have to assign the laboratory wise target to the Blocks through ADAPT DSS portal.
4. The Block Agriculture Officer shall prepare the GP wise target and assign it to the concern VAWs/AOs.
5. The VAWs/AOs are responsible for timely achievement of the target for collection of soil samples and SHC distribution to the farmers for the allotted GPs.
6. District wise target for Soil Sample testing is Annexed at **Annexure-III**

B. Soil Sample Collection, Registration and Sending to Labs

1. All Soil samples must be collected through the **Agri Extension App** by capturing the image, Latitude & longitude of the farmers plot.
2. Sample to be analyzed through STLs & MSTLs shall be collected by the Krushak Sathi(s) of the respective GP. In absence of *Krushak Sathi* or in other exigencies VAWs/AOs shall be assigned to collect the Soil samples.
3. Sample to be analyzed through VLSTLs, shall be collected by the respective VLSTLs.
4. Concern Krushak Sathis and VLSTLs shall be provided with log in ID and Pass words for using *Agriextension App* only for the above purpose after registering them in ADAPT portal at CDAO level.
5. GP for soil collection shall be allotted to the respective Krushak Sathis (or VAWs) and VLSTLs in ADAPT portal at CDAO level.

6. The sample collector shall be provided with sampling kit prior to collection of Soil sample. Sampling kit includes polythene sampling bag of 6"x4" size, Information sheet, Label (Sticker), Thread and Polythene sheet (for quartering procedure) etc.
7. Standard format of information sheet, communicated vide Letter No.DAFP-FERT-MISC-0007-2024-16119 DT. 18.04.2024 is enclosed at **Annexure-IV**.
8. For the samples to be analyzed in old STLs, sampling kit shall be provided at Block points by the CDAO/ Soil Chemist. For the samples to be analyzed in outsourced STLs and MSTLs, it will be provided at block points by the LTC commercial Pvt. Ltd and PPL respectively.
9. Soil samples from will be collected as per **operational land holding basis**. One sample shall be collected for a particular plot cultivated by a particular farmer. If a single plot Number is cultivated by multiple farmers, then more than one sample can be collected for that plot number against each farmer.
10. Farmers under marginal, small, semi-medium, medium land holdings and women farmers should be given priority.
11. **Soil testing for any operational holding shall not be repeated within a span of three years.**
12. Before collection of soil sample, it must be ensured that both the plot and the farmer must be registered in **Krushak Odisha** portal.
13. All the information about plot, farmer etc. of a soil sample shall be entered or captured through the Agri Extension App and also to be recorded in the physical information sheet.
14. After successful registration of a sample in the Agri Extension App, a **unique Sample Id** will be generated which must be recorded on the information sheet as well as on the label (sticker).
15. Each sample bag shall be perfectly tied with a tag. A label (sticker), clearly indicating the **sample ID**, Farmer Name, Block Name, GP name etc. must be affixed on the sample bag.
16. **For STL & MSTL samples:**
 - a. After successful collection & registration of Soil samples in the APP, the Krushak Sathi will submit the physical sample along with completely filled information sheet to the BAO through the concerned VAW/AO.
 - b. VAW/AOs to verify 100% of the samples collected by Krushak Sathis. After complete verification, the VAW/AO will submit the physical sample along with the information sheet to the BAO. It must be ensured that the **Sample ID** on each soil sample is clearly recorded and the information sheet against each sample is correctly filled.
 - c. After receiving the physical sample along with the information sheet, BAO will check the details of the physical sample through ADAPT DSS portal against the unique sample ID and if found correct, the sample shall be marked as '**Received**' in ADAPT DSS portal.
 - d. BAO should verify at least 5% of the samples collected by the Krushak Sathis / VAWs.
 - e. The Soil Chemist should prepare the laboratory wise and block wise soil collection plan of the month and communicate it to the Blocks and MSTLs. As per this plan, the BAO will allot the soil samples to that lab in

ADAPT DSS portal.

- f. The samples allotted by the BAOs through ADAPT DSS portal shall be physically collected by the ADA Soil Chemist/ Outsourcing Agencies (LTC/PPL) from the block points for testing in the respective STL/MSTL. During lifting of sample from Block points, It must be ensured that the sample ID of the physical sample must be same with that allotted by the BAO through ADAPT DSS portal. **No physical sample shall be accepted by the Labs without a valid sample ID.**
- g. The physical copy of the information sheet shall be kept at Block level for record purpose.
- h. The Blocks shall be allocated appropriate time schedule to make available their targeted number of soil samples at the block points in such a way as to keep the STLs/ MSTLs uniformly engaged throughout the year.

17. **For VLSTL samples:**

- a. In case of VLSTLs, after successful collection & registration of soil samples, the physical sample will be kept at VLSTL level and completely filled information sheet shall be submitted by the VLSTL to the BAO through the concern VAW/AO.
 - b. VAW/AOs to verify 100% of the samples collected by the VLSTL. After complete verification and satisfaction, the VAW/AO will submit the information sheet to the BAO.
 - c. BAO should verify at least 5% of the samples collected by the VLSTL and on satisfaction the sample shall be assigned to the VLSTL through ADAPT DSS portal for analysis.
18. Sample should be collected in two cycles from Mid March to Mid June and again from October to March. Out of the total target of the District, at least 70% samples shall be collected during the 1st cycle i.e. from Mid March to Mid June .
19. The designated method of sample collection shall be strictly followed for collection of soil samples from the desired layer i.e. 15 cm depth.
20. The VAW/ AO of the concern GP shall guide the Krushak Sathi / VLE regarding Collection and registration of soil sample through the Agri Extension App.

C. **Acceptance of Soil Sample by the Labs**

- 1. Basing on the physical soil sample received, the lab will check the details of the sample against each sample ID and if found correct, then it will be **accepted** by the lab through ADAPT DSS portal. In case of any issues, it should be **reverted** to the concerned BAO.
- 2. After accepting sample in the ADAPT DSS portal, the concerned Soil Chemist / VLSTL shall take immediate action for completing the analysis and generation of SHC.

D. **Analysis of Soil Samples**

1. The samples must be analyzed by following all the standard procedures as prescribed in the Soil Testing manual (GoI manual for soil testing provided) for all **12 parameters** like pH, EC, OC, Available-Nitrogen, Available-Phosphorous, Available-Potassium, Available-Sulphur, Zn, B, Fe, Mn, & Cu.
2. A Soil Testing Manual (Govt. of India), already communicated previously, shall be strictly adhered by all the laboratories for following similar standard procedures of testing soil samples.
3. Standard solutions for Soil Testing would be prepared by the AAO / Technical Assistant under the supervision and guidance of the Soil Chemist.
4. Similarly The AAO/Technical Assistant would also calibrate the instruments and initialize it under the active guidance of the Soil Chemist.
5. Procurement of chemicals and other materials like filter papers etc. of prescribed standard would be checked and ensured by the concerned Soil Chemist before use.
6. The day to day sample wise analysis report shall be recorded in Register.
7. The Soil Chemist concern shall visit each MSTL and VSTL time to time for supervising the analysis procedures followed by these labs.
8. In STLs, the Soil Chemist would also time to time cross check the accuracy of the testing by retesting few random samples by him / herself and the findings or observation should be recorded on a register and incase of variations, appropriate corrective measures should be taken.

E. Generation of Soil Health Cards

1. Once the analysis of a sample is completed, the results so obtained shall be uploaded in the ADAPT DSS portal on real-time basis. The analysis results shall be thoroughly checked by the Soil Chemists before its uploading in the portal.
2. After uploading the test results, recommendations to the farmer will also appear which needs to be thoroughly checked by the Soil Chemist.
3. After that Soil Health Card should be generated in the ADAPT DSS portal both in English and Odia.
4. The Soil health Card shall be printed as follows.
 - a. The Soil Health Card consists of 4 pages.
 - b. It must be printed on a single A4 size paper on both the sides @ 2 pages on each side.
 - c. After printing, it shall be folded from the middle.
 - d. The card must be color printed on standard quality glossy paper of **minimum of 180 GSM**.
5. The Old STLs, MSTLs, Outsourced STLs and VLSTLs shall strictly adhere to the above printing criteria's. The concerned Soil Chemist to monitor it regularly.

F. Distribution of Soil Health Cards

1. In case of STLs:

- a. After printing of the Soil Health Card, it shall be sent to the concern Block

by the CDAO/Soil Chemist (for Old STLs) or by the Agency (for outsource STLs).

- b. After sending the Physical Card to the Block, the STL would also mark it as **"Dispatched"** in the ADAPT DSS portal.
- c. After receiving the physical SHC at Block point, the BAO shall cross check all the individual cards for its correctness and then after mark it as **"Received"** in the ADAPT DSS portal.
- d. Then after BAO shall make necessary arrangement for distribution of the SHC through the Krushak Sathis. In absence of *Krushak Sathi* or in other exigencies it can be distributed through the VAWs/AOs.
- e. A UC against the distribution of SHC shall be submitted by the Krushak Sathi to the BAO through the concerned VAW/AO. After 100% verification, the VAW/AO will submit it to the BAO.
- f. After receiving the UC from the VAW, the BAO would verify 5% of the SHC distributed in the block and then after mark **'Distributed'** in the ADAPT portal.
- g. 1% of distribution of Soil Health Cards in the District shall be verified by the Soil Chemist.

2. In case of MSTL & VSTLs

- a. After printing of cards it will be distributed to the farmers at their doorstep at village level.
 - b. After distributing the SHC to the farmer it should be marked as **"Distributed"** in the ADAPT DSS portal by the concern MSTL/VSTL.
 - c. UC against the distribution of SHC shall also be maintained by the MSTL/VSTL.
 - d. 5% of distribution of Soil Health Cards in the Block shall be verified by the BAO.
 - e. 1% of distribution of Soil Health Cards in the District shall be verified by the Soil Chemist.
3. During distribution of SHC, mandatorily the farmers shall be explained regarding the use of SHC and accordingly use of fertilizers for effective Soil Health Management.
 4. If possible, the cards should be distributed in farmers training/ FFS/ Awareness Campaign/ Field Days etc. in presence of PRI members with proper documentation.
 5. The timeline for distributing Soil Health Cards to the farmers is **25 days** from date of collection of the soil sample.
 6. However, in case of VLSTL, the timeline is as follows.
 - a. Sampling and registration on App: 0-1 days
 - b. Analysis of soil samples: 2-4 days
 - c. Reporting of analytical data in the portal and generation of SHC: 4-5 days.
 7. After distribution of SHC, required extension services should be provided to the farmers for adoption of recommendations.

G. Maintenance of Equipment

1. Maintenance of equipment in proper working conditions shall be ensured by the ADA (Soil Chemist) or the Soil Chemist in Charge through the Annual

Maintenance Contract as per work assigned i.e.

- a. 11 Old STLs: By ADA (Soil Chemist)
 - b. 19 Outsourced STLs: By LTC Commercial Company Pvt. Ltd.
 - c. 30 Mobile STLs: By PPL
 - d. VLSTLs: By entrepreneur
2. The cost of AMC to be met as per work assigned under G (1) (a, b, c &d) above and agreement signed.
 3. All minor repair / servicing of equipment if any has to be borne as per work assigned under G (1) (a, b, c &d) above.
 4. Maintenance and cleanliness of equipment, glassware's and the laboratory should be ensured every day by the ADA (Soil Chemist) or the Soil Chemist in charge along with G (1) (a, b, c). For VLSTL, the same shall be done by the entrepreneur.
 5. The soil testing equipment should be kept in working condition all the year round with appropriate follow up with the AMC contractor/ appropriate technicians of the respective company through service back-up by the respective stakeholders as in G (1) (a, b, c &d) above.
 6. Any equipment going out of order beyond repair should be reported. If found due to deliberate mishandling or negligence, the ADA (SC) shall have to fix responsibility on staffs for such negligence. However, in normal circumstances, the equipment would be replaced through purchase by the Govt. through committee.
 7. New equipment/ Machineries if any will be procured by the District Level Committee (Including CDAO/ Agril. Engineering wing/ KVK expert/ Soil Chemist) for the laboratory, wherever needed. However, the purchase of equipments in STL, Khordha will be finalized by a committee consisting of HOD (Soil Science), OUAT, JDA (QC & Enf.), DDA (Fertiliser), DDA (QC), Officer I/C-Gem Buyer, O/o DA & FP (O), ADA Analytical Chemist, FQCL, ADA-cum-Sr. Analyst, SITL, ADA-Soil Chemist, SITL, BBSR under Chairmanship of the Addl. Director of Agriculture (Extension).

Annexure-I

List of Old Soil Testing Labs (STL) Operated by Govt. Functionaries

Sl No	District	Name of STL	Remarks
1	Balasore	Soil Testing Laboratory Khordha	Functional
2	Bolangir	Soil Testing Laboratory Bolangir	Functional
3	Cuttack	Soil Testing Laboratory Cuttack	Functional
4	Ganjam	Soil Testing Laboratory Ganjam	Functional
5	Kalahandi	Soil Testing Laboratory Kalahandi	Functional
6	Kandhamal	Soil Testing Laboratory Kandhamal	Functional
7	Khurdha	Soil Testing Laboratory Khordha	Functional
8	Koraput	Soil Testing Laboratory Koraput	Functional
9	Mayurbhanj	Soil Testing Laboratory Mayurbhanja	Functional
10	Sambalpur	Soil Testing Laboratory Sambalpur	Functional
11	Sundargarh	Soil Testing Laboratory Sundargarh	Functional

Annexure-II

List of Outsourced Soil Testing Labs (STL) Operated by LTC Comercial Pvt. Ltd.

Sl No	District	Name of STL	Remarks
1	Angul	Soil Testing Laboratory, Angul	Functional
2	Bargarh	Soil Testing Laboratory, Bargarh	Functional
3	Bhadrak	Soil Testing Laboratory, Bhadrak	Functional
4	Boudh	Soil Testing Laboratory, Boudh	Functional
5	Deogarh	Soil Testing Laboratory, Deogarh	Functional
6	Dhenkanal	Soil Testing Laboratory, Dhenkanal	Functional
7	Gajapati	Soil Testing Laboratory, Gajapati	Functional
8	Jagatsinghpur	Soil Testing Laboratory, Jagatsinghpur	Functional
9	Jajpur	Soil Testing Laboratory, Jajpur	Functional
10	Jharsuguda	Soil Testing Laboratory, Jharsuguda	Functional
11	Kendrapara	Soil Testing Laboratory, Kendrapara	Functional
12	Keonjhar	Soil Testing Laboratory, Keonjhar	Functional
13	Malkangiri	Soil Testing Laboratory, Malkangiri	Functional
14	Nawaragnpur	Soil Testing Laboratory, Nawaragnpur	Functional
15	Nayagarh	Soil Testing Laboratory, Nayagarh	Functional
16	Nuapada	Soil Testing Laboratory, Nuapada	Functional
17	Puri	Soil Testing Laboratory, Puri	Functional
18	Rayagada	Soil Testing Laboratory, Rayagada	Functional
19	Sonepur	Soil Testing Laboratory, Sonepur	Functional

District wise Target for Soil Sample Testing

Year: 2024-25

Sl. No.	District	Number of Labs			Target of Soil Samples (in Nos)				
		STL	MSTL	VSTL	STL	MSTL	* Other District STL	VSTL	Total
1	Angul	1	1		10,000	5,000		0	15,000
2	Balasore	1	2	2	10,000	10,000		6,000	26,000
3	Bargarh	1	2	2	10,000	10,000	5,000	6,000	31,000
4	Bhadrak	1	1		10,000	5,000		0	15,000
5	Bolangir	1	2	3	10,000	10,000		9,000	29,000
6	Boudh	1			10,000	1,000		0	11,000
7	Cuttack	1	1	4	10,000	5,000		12,000	27,000
8	Deogarh	1			5,000	0		0	5,000
9	Dhenkanal	1	1		10,000	5,000		0	15,000
10	Gajapati	1			5,000	0		0	5,000
11	Ganjam	1	4	4	10,000	20,000	5,000	12,000	47,000
12	Jagatsinghpur	1		2	10,000	0		6,000	16,000
13	Jajpur	1			10,000	0		0	10,000
14	Jharsuguda	1			5,000	0		0	5,000
15	Kalahandi	1	3	4	10,000	15,000		12,000	37,000
16	Kandhamal	1			10,000	0		0	10,000
17	Kendrapara	1	1		10,000	5,000		0	15,000
18	Keonjhar	1	1		10,000	5,000	5,000	0	20,000
19	Khurdha	1			10,000	0		0	10,000
20	Koraput	1	1	5	10,000	5,000		15,000	30,000
21	Malkangiri	1	1	3	10,000	5,000		9,000	24,000
22	Mayurbhanj	1	3		10,000	15,000		0	25,000
23	Nawarangpur	1		2	10,000	0		6,000	16,000
24	Nayagarh	1		1	10,000	0		3,000	13,000
25	Nuapada	1			10,000	0		0	10,000
26	Puri	1	2		10,000	10,000		0	20,000
27	Rayagada	1			10,000	0		0	10,000
28	Sambalpur	1	1	2	10,000	5,000		6,000	21,000
29	Sonepur	1	1	3	10,000	4,000		9,000	23,000
30	Sundargarh	1	2	3	10,000	10,000		9,000	29,000
Total		30	30	40	2,85,000	1,50,000	15,000	1,20,000	5,70,000

* 5000 samples each from Bargarh, Ganjam & Keonjhar District will be sent to STL-Jharsuguda, STL-Gajapati & STL-Deogarh respectively.

[Signature]
10-04-2024
Deputy Director of Agriculture (Fertilizer)
Directorate of Agriculture & Food Production
Odisha, Bhubaneswar

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ମୃତ୍ତିକା ନମୁନା ସୂଚନା ପତ୍ର

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Countersigned By

କୃଷକଙ୍କ ସ୍ବାକ୍ଷର

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