

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

LOK SABHA
UNSTARRED QUESTION NO. 2544
TO BE ANSWERED ON THE 14TH DECEMBER, 2021

HARMFUL EFFECT ON SOIL FERTILITY

†2544. SHRI ARUN KUMAR SAGAR:
SHRI SUNIL DATTATRAY TATKARE:
DR. AMOL RAMSING KOLHE:
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DR. SUBHASH RAMRAO BHAMRE:
SHRI KULDEEP RAI SHARMA:

Will the Minister of AGRICULTURE AND FARMERS WELFARE कृषि एवं किसान कल्याण मंत्री
be pleased to state:

- (a) whether the Government has evaluated the fertility of soil across the country and if so, the norms adopted for the purpose and the extent of micronutrients deficiency noticed, State/UT-wise;
- (b) whether fertility of soil is also lost due to over use of chemical fertilizers, if so, the details thereof;
- (c) whether the Government has conducted any research in this regard, if so, the outcome of the said research;
- (d) the details of the schemes and projects under implementation to check the declining fertility of agricultural land and improve the fertility of soil for increasing agricultural production in the country including Maharashtra and Tamil Nadu; and
- (e) the follow-up action taken and success achieved thereunder during each of the last three years and the current year?

ANSWER

MINISTER OF AGRICULTURE AND FARMERS WELFARE

कृषि एवं किसान कल्याण मंत्री (SHRI NARENDRA SINGH TOMAR)

- (a): Soil Health Card (SHC) scheme is implemented to evaluate the fertility of soil across the country by adopting uniform norms of soil sampling in a grid of 2.5 ha in irrigated areas and 10ha in rainfed areas; uniform testing of 12 parameters i.e. major nutrients (N, P&K),

secondary nutrients (S), micro nutrients (Zn, Fe, Cu, Mn& B) and other parameters on pH, EC & Organic Carbon. During 2019-20, a pilot project was implemented under which soil sampling was done on farm holding bases with farmers participation. The State/ UT-wise extent of micronutrients deficiency is given at **Annexure-I**.

(b) & (c): As such, there is no harmful effect of chemical fertilizers on soil health with balanced and judicious use. However, investigations carried out by Indian Council of Agricultural Research (ICAR) under All India Coordinated Research Project on 'Long Term Fertilizer Experiments' have indicated that continuous/over use of nitrogenous fertilizer alone had deleterious effect on soil health and crop productivity showing deficiencies of other major and micro nutrients. Even with recommended doses of NPK, deficiency of micro and secondary nutrients has become yield limiting factor over the years. Therefore, Government recommends soil test based balanced and integrated nutrient management through conjunctive use of both inorganic and organic sources of plant nutrients to prevent deterioration of soil fertility.

(d) & (e): Government is implementing Soil Health Card (SHC) scheme since 2015 to provide soil test based fertilizer use recommendations to the farmers in all States/ UTs including Maharashtra and Tamil Nadu. Soil health card provides nutrient status of the soil along with prescription about balanced and integrated use of inorganic and organic fertilizers to maintain good soil health that results in increase in production. The number of farmers provided with soil health cards during last 3 years, State/ UT-wise is given at **Annexure-II**.

Annexure-I

State wise percentage of Soil Samples found deficient in Micro Nutrients

S.No.	State	Total No. of Samples	Boron(B)	Copper(Cu)	Iron(fe)	Manganese(Mn)	Sulphur(S)	Zinc(Zn)
			% Deficient	% Deficient	% Deficient	% Deficient	% Deficient	% Deficient
1	Andaman And Nicobar Islands	4,093	3.08	11.34	0.22	0.42	68.68	10.29
2	Andhra Pradesh	1,465,147	17.21	4.71	28.36	9.71	10.61	35.61
3	Arunachal Pradesh	21,883	0.08	8.01	0.62	12.78	22.39	25.03
4	Assam	278,719	89.99	0.83	0.76	4.97	2.46	7.81
5	Bihar	474,490	47.42	21.63	22.33	22.61	44.27	24.59
6	Chhattisgarh	949,751	27.74	3.63	10.33	3.32	35.69	43.04
7	Delhi	1,090	14.40	0.83	6.70	12.11	22.48	0.92
8	Goa	18,929	17.75	0.60	0.11	0.41	9.03	5.18
9	Gujarat	1,688,834	49.98	6.18	25.12	4.86	21.92	31.69
10	Haryana	1,356,297	18.65	2.78	39.83	40.42	7.21	28.40
11	Himachal Pradesh	107,849	1.74	2.48	8.88	17.49	7.13	8.63
12	Jammu And Kashmir	148,118	4.07	16.38	24.54	35.07	22.04	27.76
13	Jharkhand	69,796	17.66	4.49	6.39	9.14	21.86	20.40
14	Karnataka	1,650,073	53.04	7.49	53.62	16.36	36.92	61.65
15	Kerala	133,503	37.58	3.36	2.67	5.20	27.59	7.47
16	Ladakh	4,805	7.12	5.27	23.66	28.30	7.49	29.12
17	Madhya Pradesh	1,705,871	28.38	6.24	22.47	9.80	25.84	46.34
18	Maharashtra	2,785,554	44.33	2.78	65.94	13.74	51.55	53.03
19	Manipur	2,362	16.13	7.87	1.10	0.97	17.99	12.36
20	Meghalaya	41,110	0.04	6.47	4.98	17.93	0.12	18.24
21	Mizoram	10,229	0.00	0.00	0.00	0.00	0.10	0.03
22	Nagaland	12,023	0.08	6.55	0.21	6.90	2.23	32.85
23	Odisha	584,775	3.58	0.22	0.23	0.22	3.89	3.10
24	Puducherry	7,168	34.63	0.67	8.78	1.53	0.00	6.56
25	Punjab	779,267	1.63	0.50	10.73	44.25	13.78	13.33
26	Rajasthan	1,499,352	0.00	4.87	52.22	8.36	16.09	51.02
27	Sikkim	10,319	47.67	11.52	7.97	7.23	8.57	31.98
28	Tamil Nadu	1,354,982	53.53	3.69	33.09	23.59	36.46	29.70
29	Telangana	1,068,820	21.13	8.57	39.98	19.96	17.33	36.67
30	The Dadra And Nagar Haveli And Daman And Diu	2,429	1.98	1.03	3.95	1.32	0.58	7.70
31	Tripura	30,967	17.81	1.45	1.41	1.85	5.29	20.17
32	Uttar Pradesh	4,864,001	29.89	4.36	26.55	16.20	37.97	30.93
33	Uttarakhand	140,058	46.93	10.74	16.11	17.53	24.78	18.90
34	West Bengal	1,150	17.91	1.04	1.39	11.13	67.04	4.87
All India		23,273,814	31.26	4.93	33.55	15.73	28.80	36.92

Note: Statement prepared by NIC on bases of data uploaded by States / UTs on soil health portal for the cycle-II (2017-19).

State-wise number of farmers provided with Soil Health Cards during last three years

Sl. No.	States/UTs	2018-19	2019-20	2020-21
1	Andaman & Nicobar	3894	1007	3000
2	Andhra Pradesh	3462629	226487	0
3	Arunachal Pradesh	10266	5432	53
4	Assam	1157702	67493	0
5	Bihar	4151316	123866	305223
6	Chhattisgarh	2811066	65341	387
7	D&N Haveli	2838	0	0
8	Goa	6066	9281	6556
9	Gujarat	4372845	63591	0
10	Haryana	2497185	30261	18972
11	Himachal Pradesh	56433	19613	5168
12	J & K	546930	56357	159890
13	Jharkhand	320914	14572	0
14	Karnataka	38538	73221	40104
15	Kerala	773204	171207	118022
16	Ladakh	16500	2103	0
17	Madhya Pradesh	5388000	127000	133000
18	Maharashtra	2792042	201837	0
19	Manipur	10357	10357	10010
20	Meghalaya	139741	45286	8531
21	Mizoram	11986	2119	0
22	Nagaland	12000	27304	0
23	Odisha	925635	431418	52056
24	Puducherry	53	32	64
25	Punjab	580000	580568	19196
26	Rajasthan	73660	23104	33347
27	Sikkim	3300	2936	0
28	Tamil Nadu	3533971	101144	32750
29	Telangana	472987	110664	165527
30	Tripura	18034	15614	6467
31	Uttar Pradesh	17472000	255517	20000
32	Uttarakhand	445556	13645	6700
33	West Bengal	612500	4520	0
Total		52720148	2882897	1145023

Note: -

- i. During 2020-21, soil testing was done by states under state programme (except Uttar Pradesh).
- ii. During current year (2021-22) States to issue SHCs on need base.
