7 - Quality Control

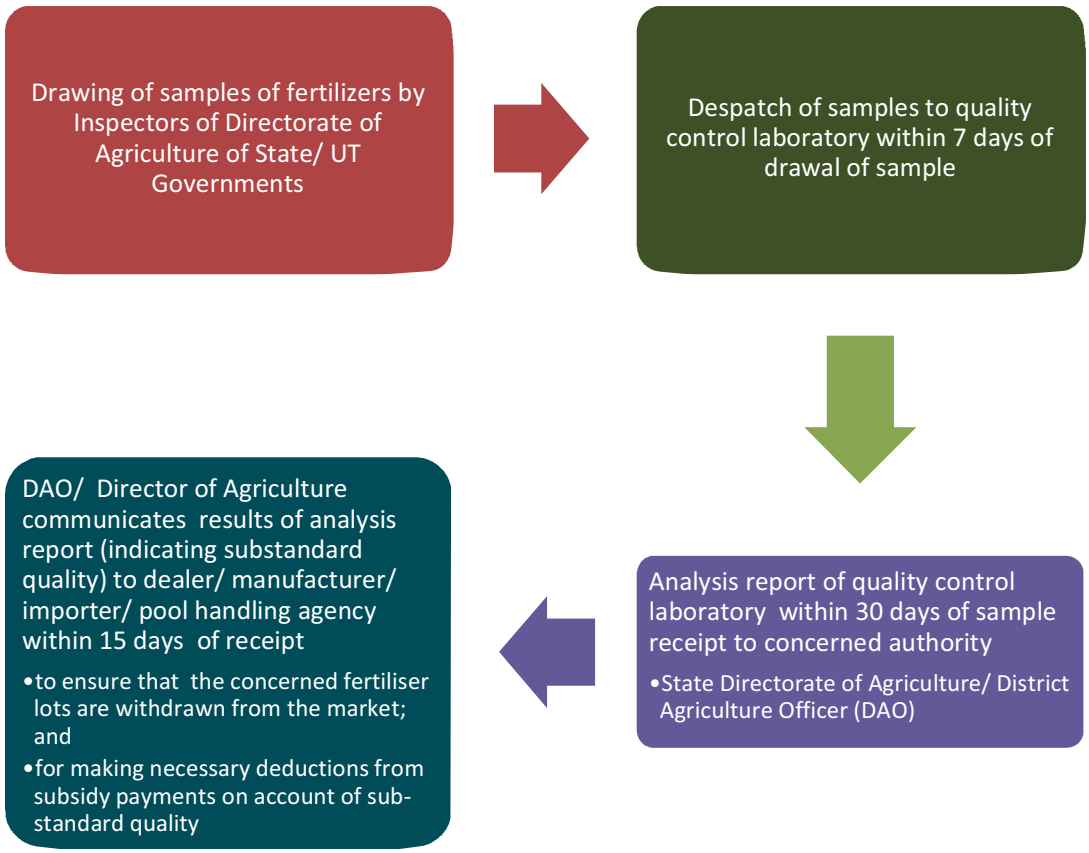
7.1 Background

Regulation of quality of fertilizer is governed by the FCO, 1985. The fertilizer quality control laboratory structure in India consists of

- A Central Fertilizer Quality Control and Training Institute at Faridabad and its regional laboratories at Mumbai, Chennai and Kalyani (Calcutta), and
- 67 Fertilizer Quality Control Laboratories in 22 States/UTs.

The procedure for drawing and analysis of samples and follow-up action thereon is as follows:

Chart 7.1 – Process for drawing, analysis and reporting of quality of fertilizer samples



7.2 Inadequate capacity for testing fertilizer samples

As of March 2009, there were 268120 sales outlets in the country. The minimum requirement of fertilizers samples to be tested for ensuring quality was 5,36,240 to cover each sale outlet during Kharif and Rabi. However, the annual capacity of the existing quality control laboratories was only 1,32,965 against which 1,04,498 samples were actually tested during 2008-09; details are given below:

Table 7.1 - Details of All India Total Sale Points, Total Laboratories, Samples Analysed

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
No. of sale points	2,82,468	2,88,756	2,92,692	2,71,215	2,58,718	2,68,120
Minimum no. of samples required to be tested	5,64,936	5,77,512	5,85,384	5,42,430	5,17,436	5,36,240
No. of laboratories	67	67	67	68	68	71
Capacity of laboratories (samples)	1,24,778	1,24,730	1,22,488	1,29,250	1,29,331	1,32,965
No. of samples analysed	1,04,647	1,08,859	1,11,745	1,16,142	1,06,378	1,04,498
Percentage of samples drawn and analysed to minimum requirement	18.52	18.84	19.08	21.41	20.55	19.48
No. of samples found non- standard	5,785	6,535	6,728	6,956	5,933	5,729
Percentage of samples analysed and found non-standard	5.5	6.0	6.0	6.0	5.6	5.5

7.3 Other deficiencies in Testing of Quality of Fertilizer

Field scrutiny revealed the following deficiencies in testing of fertilizer quality:

- Many of the fertilizer quality control laboratories were deficient in terms of physical and human infrastructure. Many essential items of testing equipment were either not available, or were non-functional. As regards staff, there were shortage in availability of staff vis-à-vis the sanctioned number of posts, and many staff members had not received the necessary training at CFQCT&I Faridabad, without which they would not be statutorily qualified to discharge their duties under the FCO.
- There was a significant shortfall in the actual number of samples tested vis-à-vis the targets as well as the capacity of the laboratories.

- The stipulated time limits for sending of samples to the quality control laboratories, sending of analysis reports by the laboratories to the concerned authorities and corrective action thereon were not adhered to in most States, with huge delays. As a result, even when sub-standard quality fertilizer was detected, by the time the analysis reports reached the concerned authorities and action was initiated, the balance stock of the fertilizer lot (pertaining to the sub-standard sample) had already been sold to unsuspecting farmers, who unknowingly used such sub-standard fertilizers.
- Recoveries on account of fertilizer subsidy on substandard fertilizer were not made in full in many cases.

A summary of State-wise findings on quality control given below: details are given in the State Specific Chapters.

Recommendation – 5

The fertilizer quality control infrastructure in the country should be upgraded through setting up of new laboratories, upgradation of existing laboratories infrastructure and recruitment of suitably qualified staff. Timelines should be specified for ensuring adequate capacity for seasonal testing of all sale outlets. If deemed necessary, adequate financial assistance could be provided to the State Governments for this purpose.

State Government Departments and quality control laboratories should be held accountable for timeliness in drawal of samples, sample analysis, and communication of sample results. IT should be used for collation and wide dissemination of sample results; in addition, display of sample results on the notice boards of Block Panchayats may be considered.

Table 7.2 – State-wise findings on fertilizer quality control

Sl. No.	Name of State	Irregularities/short comings in the quality control labs
1.	Andhra Pradesh	• 41 to 57 per cent of the non-standard samples were declared as standard in re-analysis during 2006-09, casting doubts on the reliability and authenticity of the entire samples and the process itself. • For the years 2006-07 and 2007-08, recoveries recommended in respect of non-standard samples along with **Form J (**particulars of fertilizer samples) were not made available to audit. • For the year 2008-09, out of 329 non-standard cases, details of only 74 cases were furnished to Department of Fertilizer, GoI for recovery. • Legal action was yet to be initiated in 232 cases of non- standard

Sl. No.	Name of State	Irregularities/short comings in the quality control labs
		fertilizers as of November 2009. • The period of cases ranged from 1 to 5 years as seen in the records. However, case wise details of the samples were not made available to audit.
2.	Assam	• The fertilizer quality control laboratory at Guwahati did not achieve targets for testing of fertilizers during 2006-07 to 2008-09. The shortfall ranged from 59 to 93 per cent. • Samples were collected from a lot of very small quantity of fertilizer which ranged between 0.03 MT to 0.20 MT. • In respect of two cases, source of collection of quantity in the lot was not mentioned in Form 'J'.
3.	Bihar	• For 38 districts, there was only one quality control laboratory in Patna. Shortage of laboratories resulted in inadequate testing facilities. • Out of 18640 samples to be drawn in the state, only 1688 (9.05 per cent) samples were drawn, 1578 tested and 110 (6.5 per cent) left without analysis. • In the test-checked districts, the shortage in the samples actually drawn ranged between 36 and 99 per cent in 2006-07, 58 to 99 per cent in 2007-08 and 33 to 99 per cent in 2008-09. • During 2007-08 , out of 6.22 lakh MT of various kinds of fertilizers received in the test checked districts, only 416 samples were taken against 6217 required for testing and 17 were declared as non-standard. • Further in 2008-09 out of 7.46 lakh MT of all fertilizers received, only 464 samples were taken against 7464 required for testing and 10 were declared as non-standard. • In the test-checked districts, no samples were drawn from retail dealers/ co-operative societies, or Central Storage Scheme (CSS) warehouse functioning as buffer of the fertilizer company. • In the test-checked district, fertilizer inspectors were not posted, and the District Agriculture Officers/ Block Agriculture Officers were collecting the samples. • The test results of fertilizers declared as non- standard were not intimated to the dealers. Further, by the time samples were declared as non-standard, the stock had already been sold.

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4.	Chhattisgarh	• The FQCL, at Raipur is the only notified fertilizer testing laboratory in the State of Chhattisgarh. Against the sanctioned strength of 17 posts, only 10 posts were filled. • As per the Manual, against the 25 items of equipment for analysis of chemical fertilizers, only 17 items of equipment were available. • Shortages in analysis of samples ranged between 8 per cent and 32 per cent during the period 2006-09. • 3363 MT fertilizers (DAP, NPK and SSP - amounting to Rs.2.00 crore) declared non-standard were sold to the farmers.
5.	Gujarat	• There were 21 vacancies (Asstt. Director of Agriculture-2, Agriculture Officers-17, Chemist-2) in the three Fertilizer laboratories at Bardoli (4), Junagarh (10) and Gandhinagar (7). • It was noticed that laboratories had conducted scrutiny of only the main components (Urea-Total Nitrogen; DAP-Total Nitrogen, Ammonical Nitrogen, Ammonium Citrate, Phosphate; MOP-Potash) of the fertilizer only as against the requirement of FCO, 1985 that all components should be examined to certify fertilizer as of the prescribed standard. • There was delay in intimation to the dealers of the test results of fertilizers declared as non-standard, by which time, the stock had been sold. Hence, the non-standard fertilizer was used by the farmers without knowing the quality. • 124 court cases for the period 2006-07 to 2008-09 were pending in courts. There was no instance of seizure of the lot of non-standard fertilizer nor was any recovery of subsidy proposed in respect of non-standard fertilizer samples. This resulted in irregular payment of subsidy to the extent of Rs.9.86 crore.
6.	Haryana	• In the Quality Control laboratories at Hissar and Karnal, as against the staff strength of 27 posts, only 22 technical and supporting staff was in position. • There was a shortfall of 33 per cent in samples analysed during years 2006-07, 2007-08, and 2008-09 against the annual capacity of 3400 during 2006-08 and 5100 in 2008-09. • 34 samples collected during April 2006 to November 2008 were declared as non-standard but neither was any action taken to stop sale/use of non-standard fertilizers, nor was recoveries

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		proposed to the Department of Fertilizers. Further, in 23 other cases where the samples were found non-standard, information regarding initiation of action such as disallowance of subsidy, stoppage of sale, etc. was not furnished to audit.
7.	Himachal Pradesh	• Out of two Agriculture Development Officers deployed in the Quality Control laboratory at Sundernagar, one officer posted since November 2006 had not been imparted the requisite technical training at the Central Fertilizer Quality Control Laboratory, Faridabad. In the laboratory at Hamirpur, no Laboratory Assistants were provided during 2006-09. • Against the annual analysing capacity of 1000 samples in each laboratory, percentage achievement was 74, 65 and 60 during the years 2006-07 to 2008-09 respectively. • Although samples of Fertilizers were collected from the 1st sale point dealers, the results were never communicated to them.
8.	Jammu & Kashmir	• An Atomic Absorption Spectrophotometer (AAS) prescribed for analyzing micro-nutrients, purchased in February 2002 for the (Jammu) laboratory was unserviceable. In the Jammu laboratory, vacuum dessicator, Indian standard sieves, sample grinder, top pan balance and deionizer required for testing were not available in the laboratory. In the laboratory at Srinagar, water bath cum shaker, magnetic stirrer, sample grinder, glass water distillation apparatus and de-ionizer required for testing were either not available or were un-serviceable. • As per the Fertilizer (Control) Order 1985 (Sch.1), specification of various fertilizers had been indicated. For checking these specifications, the laboratory was required to conduct tests in respect of these fertilizers. However, audit check of the records and the tests conducted in the laboratory in respect of two districts of Jammu (excluding samples lifted from rake point) and Kathua for the year 2008-09 showed that all the tests were not carried out in the laboratory • Results in respect of 368 samples for the year 2006-07 to 2008-09 sent to the quality control laboratories were not received. The reasons for not analyzing these samples and non-intimation of results, if any, were sought from the laboratory, but were not intimated.
9.	Jharkhand	• Only one Quality Control Laboratory existed in Jharkhand. Out of 26 items of equipment, 13 were functional and two were lying

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		un-installed as of October 2009, and the remaining items of equipment were non-functional since 2007-08. • Against the analyzing capacity of 6045 samples (2015 sample per year) during 2006-09, only 2043 (34 per cent) samples were analysed. • 2586.75 MT of deteriorated DAP involving subsidy of Rs.10.81 crore was sold to farmers without quality tests.
10.	Karnataka	• The required number of technical and supporting staff was not in position. Against the sanctioned strength of 41 posts, 15 positions were vacant in the four laboratories in the State.
11.	Kerala	• As against eight sanctioned posts of analysts (four in each laboratory at Thiruvananthapuram and Pattambi), only seven persons were in position, of which three analysts were not trained at the Fertilizer Quality Control Laboratory and Training Institute, Faridabad and were thus, ineligible for appointment as Fertilizer Analyst as per clause 29A of FCO, 1985. • Shortfalls in testing of the samples ranged from 10 per cent to 36 per cent during 2006-09. • In 66 to 89 per cent of the non-standard cases of sub-standard fertilizers detected during 2006-07 to 2008-09, even preliminary reports were pending, defeating the very purpose of quality testing. • The sampling covered mostly retail dealers and the samples taken were those of straight fertilizers of reputed manufacturers. Samples from mixing units/mixtures/wholesale dealers were seldom taken. For example, all the 60 samples drawn during 2006-07 to 2008-09 in Alathur block and 47 samples out of 53 in Kanjirappally block were from retail dealers only. • A scrutiny of the register maintained by the Agriculture Department for recording the details of non standard fertilizer samples had revealed that 92 per cent of the total non-standard inorganic fertilizer samples for the years 2007-08 and 2008-09 were mixtures.
12.	Madhya Pradesh	• In the two laboratories i.e. Bhopal and Indore, 5 posts of technical staff were found to be vacant. There was shortfall of 24 to 66 per cent in testing of samples vis-à-vis capacity • 2637 MT of MAP of IPL, (received on 21.11.07) was declared non-standard, however, 947 MT had already been sold to the farmers and the remaining 1690 MT of MAP was still lying in the godowns.

Sl. No.	Name of State	Irregularities/short comings in the quality control labs
		• 1097.82 MT non-standard fertilizers were still lying in the godowns since last 1 to 5 years.
13.	Maharashtra	• It was noticed that the DDF had proposed deduction of 1671.80 MT only against 7168.48 MT of non- standard fertilizers of P&K while sending Proforma'B'. • There was a shortfall ranging from 26 per cent to 38 per cent in the analysis of samples in the selected laboratories during 2006-08
14.	Manipur	• There was no testing laboratory in the State, nor was any sample drawn by the CFQCTI, Faridabad or its regional laboratories.
15.	Meghalaya	• 14 samples were drawn by the District Agriculture Officers/ District Horticulture Officers of East Khasi Hills, West Khasi Hills and Jaintia Hills Districts during 2007-08 and 2008-09 of which 4 samples of 2007-08 and 3 samples of 2008-09 were declared as non-standard by the quality control laboratories.
16.	Nagaland	• Neither was there any quality control checking laboratory in the State, nor were samples of fertilizers collected from the distribution chain of dealers to end user during the last three years for quality checks.
17.	Orissa	• There was shortfall in the receipt of samples vis-à-vis the targets in two quality control laboratories at Bhubhaneswar and Sambalpur ranging from 9 to 22 per cent during 2006-09. • Recovery of subsidy of Rs.26.87 lakh was not made on the non-standard fertilizers sold to farmers.
18.	Punjab	• Non-standard 1250 MT of DAP and 234.20 MT of MAP was sold to farmers.
19.	Rajasthan	• Three test-checked Quality Control Laboratories had 18 analysts as per their sanctioned strength, but 4 analysts did not have the prescribed training from the Central Fertilizer Quality Control and Training Institute, Faridabad. • There was shortfall in the analysis of samples ranging from 11 to 38 per cent, vis-à-vis the capacity of the laboratories during 2006-09. • Out of 420 cases of non-standard samples, details of action taken for recovery of subsidy in 253 cases were not provided to audit.

Sl. No.	Name of State	Irregularities/short comings in the quality control labs
20.	Tamil Nadu	• In the 14 FCLs, only 26 posts out of 44 posts of analytical staff were filled up. • In different blocks of 3 test-checked districts of Kancheepuram, Dharmapuri, Thanjavaur, the shortfall in drawal of samples for testing ranged from 34 to 75 per cent during 2008-09. • The shortfall in receipt of samples in FCLs ranged from three per cent (Tiruchirappalli 2007-08) to 52 per cent (Kumbakonam 2008-09). • 2269.58 MT of straight/complex fertilizers declared as non-standard (DAP, NPK, MOP and SSP) was not seized during 2006-09.
21.	Tripura	• No samples were collected for testing from private wholesaler and retail dealers for fertilizer transported by road.
22.	Uttar Pradesh	• Targets of samples of fertilizer to be analyzed during 2006-07 to 2008-09 were not achieved and shortfall ranged from 24 to 37 per cent
23.	Uttarakhand	• Shortfall in the drawal of samples ranged between 31 per cent and 85 per cent during 2006-09. • In 13 cases, recoveries amounting to Rs 16.03 lakh on account of quantities declared non standard were not proposed, while issuing Proforma 'B' during 2006-09.
24.	West Bengal	• Against the sanctioned posts of 43 posts in the three labs, only 34 posts had been filled. • There were shortages of equipments in all the laboratories.

By contrast we noticed that in Andhra Pradesh, in order to maintain secrecy and transparency during the process of fertilizer analysis a Fertilizer Coding Centre (FCC) was established at Hyderabad during 2004. The FCC acts as a centralized coding centre for referring the samples to any one of the existing fertilizer analysis laboratories at random. The samples drawn by the Fertilizer Inspectors received at this Centre are assigned a secret code number, and referred to any of the existing five Laboratories. After analysis, the result sheet is sent by the Assistant Director of Agriculture (ADA), FCO Lab to the ADA, FCC who in turn decodes and incorporates the other particulars of the sample in the analysis report and sends the final report to the Fertilizer Inspector from whom the sample was received.