IN THE SUPREME COURT OF INDIA

CIVIL APPELLATE JURISDICTION

I.A. NO. OF 2011

IN

WRIT PETITION (c) NC. 213 OF 2011

IN THE MATTER OF:-

DEMOCRATIC YOUTH FEDERATION OF INDIA Petitioners/Appellant

Versus

UNION OF INDIA & Ors. Respondents

AFFIDAVIT

I, Dr. R.S. Dhaliwal, Scientist "E", ICMR, Ansari Nagar, New Delhi do hereby solemnly affirm and state as under:-

1. That I am one of the members of the Joint Committee and conversant with the facts of the case as derived from the official record as such competent to swear this Affidavit on behalf of the Respondents.
2. That at the time of hearing of the above Writ Petition on 13-5-2011, this Hon'ble Court appointed a Joint Committee headed by the Director General of ICMR and the Commissioner (Agriculture) to conduct a scientific study on the question whether the use of Endosulfan would cause any serious health hazard to human beings and would cause environmental pollution. In compliance thereof the committee is submitting herewith a Interim report dated 4-8-2011 along with this Affidavit.

DEPONENT

VERIFICATIION:

Verified at New Delhi on this 04th day of August, 2011that the contents of the above affidavit are true and correct to the best of my knowledge and belief based on the record of the case and nothing material has been concealed therefrom.

INTERIM REPORT OF JOINT EXPERT COMMITTEE ON ENDOSULFAN

Members :

List of members of Joint Expert Committee is given in **Annexure-I.**

Background

1. The Supreme Court of India while hearing the writ petition (civil) No.213 of 2011 of Democratic Youth Federation of India Vs. Union of India and others) through its order dated 13th May, 2011 appointed a Joint Committee headed by Director General of ICMR and the Agriculture Commissioner to conduct a scientific study on the question whether the use of Endosulfan would cause any serious health hazard to human beings and would cause environmental pollution. The Committee was expected to submit its interim report within 8 weeks from the date of issue and also would suggest any alternative to endosulfan. H'ble Supreme Court vide order dated 15.7.2011 has further directed that interim report may cover the issue of export of existing stock of endosulfan.

2. Supreme Court mandated that the two earlier committees become a single joint committee which was done vide letter No. D.O.No.68/21/2009 NCD-I(Vol.3) dated 1st June 2011 of Secretary(DHR) to Agricultural Commissioner.

3. In addition to the meeting of the Joint Committee the individual Expert committees of Agriculture and Health had conducted several area specific activities. The Agriculture committee had looked into the alternatives available and the Health Committee looked into the Health aspects of endosulfan

4. This Joint Committee has met thrice on 23rd June, 2011, 7th July, 2011 and 3rd August, 2011 to jointly review the progress made by earlier Committees and formulate a combined interim report.

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The Committee under Agriculture Commissioner had undertaken :

1. Meeting of the Committee on 16th May, 2011
2. Proformae sent to all states for gathering data
3. Brainstorming meeting held on 3rd June, 2011
4. Meeting of the committee to discuss the export of the existing stock on 28th July 2011

The Committee under Dr.V.M. Katoch, Secretary(DHR) & DG, ICMR had also undertaken the following activities :

1. Had met three times to discuss the various queries being raised regarding the health effects of endosulfan as reported by NIOH in the report submitted to NHRC in 2002.
2. The NHRC has also directed ICMR to conduct a scientific study in other states with high use of pesticides including endosulfan.
3. The Committee has progressed towards collection of data about endosulfan use in the country and formulate a draft protocol for conducting the epidemiological study.
4. A sub-group constituted under Dr.P.K. Nag, Director, NIOH has finalised the protocol. The data from these studies would require a minimum period of 2 years before any meaningful conclusions can be drawn.
5. The Committee visited Calicut Medical College and Kasargod on 24th and 25th May, 2011 and also Puttur and Kasargod on 30th and 31st July 2011 respectively.
   (i) Reviewed the data of recent study conducted by the Calicut Medical College on 24th May, 2011 and advised the Calicut team regarding analysis of the data generated by them.
      a. The study was carried out in two Panchayats of Kasargod district of Kerala (1/11 of endosulfan affected areas vs. 1/26 of non-affected areas (where no aerial spray was done).
      b. The study was conducted for the last one year period with a recall memory of one year and focused on humans as well as domestic animals and covered hospitalization, morbidities, reproductive health(Life time events) and surgeries during life time. The School study included past morbidity(Recall and reported), Present morbidity by examination and cause of mortality for last ten years.

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(ii) Got the report reviewed by Dr. Arvind Pandey, Director, National Institute of Medical Statistics has suggested additional statistical analysis on the data.

(iii) During the visits to Kasargod and Puttur the Committee interacted with doctors working in that area as well as some affected people to get first hand impressions of local people and health personnel.

The detailed report of this visit is provided in **Annexure II(a) and (b)**.

6. Subsequently Dr. Arvind Pandey visited Calicut Medical College on 5-6th July; 2011 along with Dr.H.N.Saiyed and Dr.R.S. Dhaliwal. During the meeting the statistical aspects and analysis of data were discussed and some additional suggestions given. The detailed report is in **Annexure-III(a)**.
7. As per recommendations of meeting held on 7th July, 2011, the Principal Investigator from Medical College, Calicut came with data to National Institute for Medical Statistics, New Delhi for joint analysis. Report of this joint analysis carried out during 1-3 August is annexed at **Annexure III (b)**.

8. The environmental sampling results of the study conducted by Kerala State Council for Science and Technology which was expected to be available by the end of June has been provided to ICMR vide letter No. 27736/G1/2011/H&FWD dated 18.07.2011 from Principal Secretary to Government of Kerala (Health and Family Welfare Department). Important findings are :
   (i) The soil and sediment samples showed persistence of endosulfan in 10 of the 11 Panchayats in some of the samples of soil and/or sediment.
   (ii) None of the water samples had endosulfan more than 1ppb.
   (iii) As per the report of Dr.VS Vijayan, Former Chairman, Kerala Biodiversity Board
      a. The biodiversity of the flora in the region has declined between 40-70%
      b. The fauna has shown disappearance of several species including nilgiri langur, jackal, wild cat, squirrels and others.
      c. Honey bees which were abundant became almost completely absent during the period of spray.

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d. Many species of birds like flycatcher, babblers, small sunbird and others are missing in the plantations.

The report and data collected by the Agriculture Commissioner's Committee was reported. The main points are :

(a) The major users of endosulfan based on 2009-10 data including Haryana, Punjab, Bihar and Maharashtra did not report any negative effect of endosulfan use on crops human health, animal soil and water with the exception of Kerala and Karnataka.

(b) Since no unusual effects or clustering of any cases have been reported therefore no detailed focused study have been undertaken in the other states.

(c) Under the National Project on Pesticides residues monitoring of the Department of Agriculture and Cooperation, ICAR conducts regular monitoring of agricultural commodities from whole-sale markets , including egg, diary and meat products. Under this system 21 centres across the country do a weekly sampling of 19 commodities on a regular basis. Out of nearly 50645 samples only 721 have been found to have detectable pesticides of which only 20 (0.04%) samples were found to be above MRL (Maximum Residue Limit). Data on endosulphan residues in various commodities shows negligible violation of MRL values.

(d) **The recommendation by this Committee, wherein restriction on endosulfan has been suggested only in Kerala and Karnataka, since none of the other states have reported adverse health effects.**

(e) **Alternative pesticides to endosulfan are available, but are more costly and not as safe as endosulfan for crop pollinators.**

The detailed report with recommendations is at **Annexure IV.**

Overall important observations are :

I. Thirty one selected health conditions were examined during this survey carried out during 2010, of which twelve main conditions earlier reported to be associated with endosulfan were analysed in the report by Calicut Medical College. Out of these reproductive morbidity, sexual maturity, congenital anamolies and cancer in younger ages were observed to be higher in the affected area

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a) Reproductive morbidities in respect of infertility, abortions and Intra Uterine Deaths are more frequent in the areas which were aerially sprayed with endosulfan. Infertility in the women 30years and older was significantly higher but amongst younger age group (20-29) infertility was comparable with the unsprayed area indicating that the probable effect of endosulfan is gradually coming down.

b) The Sexual Maturity Rating data shows delayed onset of puberty amongst boys and girls, however, this catches up at later age.

c) The incidence of cancer deaths below age 50 years was high (2.1 per 1000 population) in the exposed population as compared to 0.33 per 1000 population in the control area.

d) The prevalence of congenital abnormality amongst school children above 12 years of age (before the ban of endosulfan spray) was significantly higher in study area as compared to control area.

II. Comparison with the earlier study by NIOH

a. Compared to NIOH study carried out in 2001, the study group shows higher scores for development of pubic hair, penis development and testicular volume amongst the boys of comparable age group. This shows that the difference between the children from study and control area has decreased.

b. Compared to NIOH study the congenital malformations has come down from 4.6% to 2.2% in study area as compared to the drop from 2.4% to 1.6% in the control area.

Both (a) and (b) above indicate waning of the probable effect of endosulfan.

III. The environmental monitoring data has become available. It has been observed that soil and sediment samples show persistence of endosulfan in the area. However the water samples do not have endosulfan. The biodiversity of the area has also been affected.

IV. The main observations of Agriculture Committee are

a. The restriction on endosulfan is supported by data from Kerala and Karnataka only whereas none of the other states have reported endosulfan associated adverse health effects so far which is already part of future investigations planned.

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b. Monitoring of endosulfan residues in various commodities across the country shows that only a small percentage (0.04%) of samples have pesticide residues above maximum residue limits.

c. The Committee recommends that export may be allowed to utilize the existing stocks of technical and formulated product available with the manufacturers of endosulfan in the country

d. Alternative pesticides to endosulfan are available, but are more costly and not as safe as endosulfan for crop pollinators

4/8/11

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ANNEXURE-I

Members

Dr. V.M. Katoch Secretary(DHR) & Director General, ICMR	Chairman
Dr. Gurbachan Singh Agriculture Commissioner, Ministry of Agriculture New Delhi.	Co-Chair
Dr. H.N. Saiyed Expert Member (Health Effects)	
Dr. P.S. Chauhan Expert Member (Health Effects)	
Dr(Lt Col) ATK Rau Pediatric Hematologist - Oncologist Professor and Head Dept of Pediatrics MS Ramaiah Medical College Bangalore – 560054	
Dr. P.K. Nag Director, NIOH, Ahmedabad	
Dr. Y.K. Gupta Prof. of Pharmacology, AIIMS, New Delhi.	
Dr. P.K. Seth Expert Member (Health Effects)	
Dr. R.S. Dhaliwal Member-Secretary (Health Effects)	

Dr. Y.K. Yadav
Plant Protection Advisor
Deptt. of Agriculture & Cooperation
(Agriculture Committee)

Dr. T. Rajendran
Asstt. Director General(Plant Protection)
ICAR, New Delhi.

Dr. Chhanda Chowdhry
Rep. Ministry of Environment & Forests
New Delhi.

ANNEXURE-II(a)

Report of Visit of Expert Group on Endosulfan to Calicut and Kasargod, Kerala.

An ICMR Expert team led by Dr VM Katoch, Secretary, Department of Health Research and DG, ICMR visited Calicut and Kasargod on 24th and 25th May, 2011 respectively. Members of team included; Prof YK Gupta (AIIMS); Dr PK Seth (Ex Director ITRC, Lucknow); Dr PS Chauhan (Ex AEC); Col ATK Rao, Prof and Head Oncology (Ramaiaiah MC, Bangalore); Dr HN Saiyed (Ex Director, NIOH); Dr Bela Shah, Head NCD; Dr PK Nag (Director, NIOH) and Dr RS Dhaliwal, Sci E, NCD. Others who participated from Medical College Calicut, Govt of Kerala, Doctors, NGOs are listed in Appendix 1. Dr M. Asheel and Dr.Jose Dicruz working in the area participated in the deliberations on both the days.

Dr. Gurbachan Singh, Agriculture Commissioner could not attend.

Study carried out by Medical College, Calicut had three components 1.Community based study :Epidemiological study on the health status of population in endosulfan affected areas; 2.School based study: health status of adolescents in areas exposed to endosulfan spraying and 3.Biomonitoring : estimation of endosulfan residues in human blood, Corresponding to this the endosulfan residues in soil, water was also carried out by other state agency in the same areas KSCSTE-p53.)all conducted during 2010-11).

Important points discussed at the review of Endosulfan study by Medical College, Calicut at Calicut as well as field visit to Kasargod district are :

1) The study was carried out in two Panchayats of Kasargod district of Kerala (1/11 of endosulfan affected areas vs. 1/26 of non-affected areas (where no aerial spray was done).
2) The study was conducted for the last one year period with a recall memory of one year and focused on humans as well as domestic animals and covered hospitalization, morbidities, reproductive health(Life time events) and surgeries during life time. The School study included past morbidity(Recall and reported), Present morbidity by examination and cause of mortality for last ten years.
3) The study reports that ill-health in the animals were more in the affected area compared with un-affected area (3.5% vs. 0.5%)
4) Thirty one selected health conditions were examined during this survey of which Twelve main conditions were reported in this report. Out of

these behavioral problems, kidney diseases, history of infertility and liver disease was higher in the affected area as compared with un-affected area; whereas all others including seizures, Cancer, etc. were similar in both affected area and un-affected area. Prevalence of various health conditions like reproductive health morbidities – infertility, abortion, IUD, NND associated with endosulfan had decreased during the last years specially in the population born after the ban on endosulfan.

5) It was pointed out that there has been some migration of population in the last ten years among different areas and there were observations that some of them still showed higher risk of various health conditions linked with endosulfan over-exposure. It was clarified that in both areas there was limited migration which was negligible and data has already been collected.
6) The Committee observed that the results are quite impressive and appreciated the efforts made to conduct this study. However, better analysis of the following aspects was suggested:-

V. Statistically the size of population survey may be examined to know the level of confidence in the results for wider applicability in a large population. If needed, study may be expanded. Expert help from ICMR, AEC was assured for this purpose. The Sample size for Epi study is 6107 in exposed area, and 3742 in control area. For the School study sample size is 386(study) + 259(control). This can be evaluated statistically for its significance.

VI. The data about the hormonal changes should be re-classified according to the age and sex (since even a few months age difference may alter the levels). Hormones were done only in children 12-15 years and therefore the reporting should be analysed accordingly. These should then be analysed for links with the disease conditions observed.

VII. Results may be presented by appropriate methods with which outliers (cases with highly abnormal findings) are delineated clearly.

VIII. The data about the congenital anomaly observed in the schools (age group between 10 to15 years) and in those who were born after the ban on endosulfan, as well as its persistence in the environment should be critically examined as overall current differences did not appear to be significant. All were born before the ban ; age >12. It was commented that there could have been a selection bias since those with severe deformities could not attend schools, only those with less severe anomaly can attend schools.

IX. As Goitre was found to be substantially higher in the study area (affected area) as well fairly high in the un-affected area, the

statistical analysis to assess the impact of such factors has to be very thorough. Only Grade 2 may be considered for analysis since the number of mild cases is very large.

X. The data about the sexual maturity in children may be presented and discussed.

XI. Regarding the data of endosulfan residues in the human blood, it was suggested to re-classify the patients and healthy individuals according to the likely years of exposure (10 to 15 years, 15 to 20 years and so on) and present that as mean -/+ SD and co-relate with clinically and symptomatically. It was clarified that the primary analysis showed that the differences are statistically significant between healthy and patients with diseases attributed to endosulfan

XII. It was suggested that while interpreting the results it should be remembered that due to the small sample size the finding were only suggestive but not conclusive.

XIII. Since one of the important outcome was congenital anomalies, it was essential to rule out consanguinity as an important confounder. It was clarified that both areas were ethnically and culturally similar. Consanguinity was not common and equally distributed in both groups- data already collected. Considered - Matching of confounding variables have been done.

XIV. A suggestion of retrospective analysis of the birth weights over the last 15 years was made to see if there has been any change after the spraying was stopped in 2000. This data should be available from various government and private hospitals in the area.

XV. An important lead was the presence of high levels of endosulfan without any apparent disease which could be due to genetic differences. This could be followed up with a study of 3 groups, high levels and disease, high levels but no disease and low levels and disease. Such a study could provide insights into the genetic polymorphism in metabolizing and handling of this pesticide by the body and its relationship with the exposure period.

XVI. Committee decided that the interim report be prepared after reanalysis of data as suggested above and also linking the observations with results of analysis of environmental samples which were expected in four weeks.

In the **field visit to Kasargod on 25th May, 2011**, discussions were organized with most of the doctors working in that area, NGOs and other people who have experience of dealing with the endosulfan problem. Various Specialists from the local General Hospital and other stake-holders inter-acted with the Expert Group. Collector of District received the delegation and facilitated discussion. A presentation was made by Dr. Mohd. Asheel, who presented the results of the survey and identified behavioral, neurological and endocrinal abnormalities as major problems. He also summarized the steps taken by Govt of Kerala including issuing the smart cards, palliative care, physiotherapy and rehabilitation. The Committee found these measures to be good and appreciated the steps being taken. Important impressions of different individuals are:-

a) Prof. M.A. Rehman - He pointed out that in a village where endosulfan was dumped, children with the deformities as well as other abnormalities have continued to occur in the age group of 2 to 10 years.
b) Dr. Ravindran- He did not find difference in the profile of affected area population compared with population of un-affected area where he was working till recently. Liver conditions, Cancer of the head and neck were common observations.
c) Dr. Thomas - He has observed high incidence of oral cancer (but mostly in the cases with habit of betel chewing) and also presence of congenital deafness in a substantial number of children of 10 to 20 years of age group in this area.
d) Dr. Prasad - He has also observed several cases of deafness and seizures in children of more than 10 years of age.
e) Dr. Gopal - He is working in the area for the last 1-1/2 years and he has seen substantial number of children with mental retardation.
f) Dr. Vasanthi has been working in the area for the last 5 years and works in area which was very close to the area of Dr. Mohan Kumar, who had earlier brought to the focus 10 to 15 years back. She observed a decline in the endosulfan associated conditions during these five years.
g) Dr. Manoj (Physiotherapist) - He has found these cases mostly in the 10-15 years of age group, some young cases have been occurring which appear to be of muscular type and not endosulfan associated type.
h) Dr. Sandhya - She has been working in the area for the last 1 ½ year and has experience of seeing many cases but she did not have an experience to compare with the past cases.
i) Dr. Shobha narrated the story of a family with three cases of locomotor disability.

j) Dr. Anjali and Dr. Arvind - They are part of Kerala Government Special Endosulfan Team lead by Dr. Mohd. Sheel which gave an over-view about the current status of the cases and measures taken by Government of Kerala in providing medical assistance including physiotherapy.

k) Dr. Janardhan Naik - He had the opinion that most of the cases appear to have multifactoral etiology such as Thyroid deficiencies which are also present in the other areas. He had the opinion that all the persons affected with the chemicals including other pesticides should be given equal attention.

l) Dr. Keshav Nath has an experience of working in close coordination with Dr. Mohan Kumar and has an observation that physiotherapy was helpful in most of the cases particularly those with the severe disability. According to him, number of cases have come down during the last ten years after the endosulfan ban was imposed.

m) Dr. Shafir, Medical Officer of Mobile Medical Unit - According to him most of these cases are more than 10-15 years old.

n) Dr. Rajamohan commented that there has been no fresh cases where he has been working. Most of the cases are old cases.

o) Dr. Mohan Kumar - He has the maximum experience of working with affected people and had initially established the association. He narrated the events and shared his experiences of findings linkages with water bodies in the vicinity of cashew nut plantations where the spray was done, Events observed in Padre village; he himself having high endosulfan levels in his blood; no new child case in these villages where he practices, problem in nearby Puttur (Karnataka); problems of cancer and other conditions in the areas where endosulfan was dumped; social stigma (he suggested to use terms endosulfan affected areas rather than people and respect for privacy). He suggested that affected persons/ areas deserve special attention for better care, rehabilitation and remediation of environment. He desired that longer period should be spent by experts with people for this purpose.

p) While the situation was assessed by a survey carried out during NIOH investigations and also by the Govt. of Kerala by camp approach between 2003-2006, the follow up records of individual cases were not readily available for comparison. The Committee has suggested to trace the history of cases detected in the NIOH survey, Govt. of Kerala surveys and subsequently to determine the clinical outcome.

q) The Committee felt that since neurobehavioural disorders were the predominant affectation it was important that properly trained counsellors were available locally. Such a training could be obtained from NIMHANS for 2-3 weeks. An effort could also be

made for a tailor made counseling module, with the help of NIMHANS, for the victims in Kasargod. An important aspect of such disorders was differentiating the organic component from the psychological component. Identification of individuals where the organic disease was persisting and the individuals who had the organic disease initially but now only the psychological component is persisting was needed. This was important since the management of these cases would be very different.

r) The social impact in the form of stigma also need to be addressed through proper counseling and remedial measures, and building confidence among the community so that the next generation of impacted people are not marginalized and are able to lead a normal life.

s) Committee also agreed to the visit of Experts to affected areas in Kasargod as well as Kayyur in July, 2011 to interact with people for suggesting studies for any improvements/ remedial measures as may be considered necessary.

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LIST OF PARTICIPANTS OF THE MEETING ON ENDOSULFAN HELD ON 24TH & 25TH May, 2011 AT CALICUTT

PARTICIPANTS (CALICUTT MEDICAL COLLEGE, CALICUT)
(DATED 24TH May, 2011

1. Dr.S. Jayasankar, Addl. Director, Kerala Health Service
2. Dr.Mohammod Asheel, Asstt. Nodal Officer, Endosulfan Rehabilitation Programme, Govt. of Kerala
3. Dr.Josa G. Dckol, DMO (H), Kasargod
4. Dr.N.T. Mathew, Deputy Controller, (LR)
5. Dr.A.V. Gopalan, Prof., Paeditrics, Medical College Calicutt
6. Dr.Udaya Bhaskaran, Prof., Med. MCH, Calicut
7. Dr. Mohandas Nair, MO (Incharge) Ass. Prof., Pediatrics, Medical College, Calicutt
8. Dr.Jayasree V., Deputy DHS, Thiruvanthapuram
9. Dr.Bing George, Asst. Prof. Dptt. of Community Medicine, Med. College, Calicut
10. Dr.Sudhiraj T.S., Lecturer, Deptt. of Community Medicine , Med. College, Calicut
11. Dr. Shiv Kumar. Asstt. Prof. Deptt. of Community Medicine , Med. College, Calicut
12. Dr.Jayakrishnan T, Asstt. Prof. Deptt. of Community Medicine , Med. College, Calicut
13. Dr. Thomas Bine, Prof., Deptt. of Community Medicine , Med. College, Calicut
14. Dr.M.K. Sreeji T.H., Deputy Secretary, Health Family Wefare Deptt.
15. Dr.C. Prabha Kumari, Prof. & Head, Community Medicine, Govt. Medical College, Calicut
16. Dr.V.K. Jayadev, Asstt. Prof. Commm. Medicine, Calicut Medical College, Calicutt

PARTICIPANTS (KASARGOD) (DATED 25TH MAY, 2011)

1. Dr.Ravindram V., Eriyanat, Nellikkat Poalla Post
2. Dr.K.Keshav Naik, Medical Officer, & Civil Surgeon, EHC Muliyar, Moliyar
3. Dr.Harish V., Haritham, Nileshwal p.O., Kasargod,
4. Prof. M.A. Rahman, ISAS, Moolayil, Kasaragod
5. Dr.Suku C., M.O., CHC Panathady, PO Rajapuram, Kasaragod
6. Dr.K,K. Thomas, ENT Surgeon, General Hospita, Kasaragod
7. Dr.Prasanth. V. PHC Vaninagarm nmakaje Panchayath
8. Dr.Vimanthi K., General Hospital Kasargod
9. Dr. Bisu George, Astt. Prof. Deptt. f Community Medicine, Medical College, Calicutt
10. Dr.Jayasree. V., Dy. DHS (MH), Directorate of Health Service, Thiruvanthpuram
11. Dr. Manoj Kumar KP, Physiatrist, General Hospital, Kasargode
12. Siby John, Reporter, Malayala Mensam
13. Anand CH, Asst. Editor, Information & Public Relation deptt., Kasargod.
14. Mohmmad Husain, Kasargod
15. Dr.Sandhya M.N. Medical Officer, PHC, Beller
16. Dr. Gopalakrishna, CHC, Badiadka
17. Dr.Shobha A., Gynaecologist , Govt. General Hospital, Kasaragod
18. Dr.Anjali K., Medical Officer, Endosulphan Mobile Unit. Punje
19. Dr. Arun. N., Medical Officer, Endosulfan Mobile Unit, Badidika,
20. Dr. Janardhana Naik CU, Sr. Meical Officer, ART Centre, General Hospital, Kasaragod
21. Narayanan Karicheru, Bureau Chief, Janayngom Daily, Kasaragod
22. Jaleel Padanna, Sub Editor, Media one TU, Vadakepuram, P.O. Padanna, Kasaragod
23. Rahman Aloor, Bureau Chief, Thejas Daily, Kasaragod
24. Shameer Hameedah, Reporter Madhyamam Dialy
25. Dr. Jamaludeen N., M/O PHC Chengela
26. Dr. Rajmohan, PHC, Kayyur
27. Dr. Shafeer Babu, MO, Mobile Medical Unit

Annexure II(b)

REPORT OF VISIT BY SECRETARY(DHR) TO PUTTUR, KARNATAKA AND KASARGOD, KERALA ON 30-31ST JULY, 2011

Dr. V.M. Katoch, Secretary(DHR) and Director General, ICMR lead the team of experts consisting of Dr. A.T.K. Rao, Dr. P.S. Chauhan, Dr. H.N. Saiyed, Dr. P.K. Nag and Dr. R.S. Dhaliwal.

This team visited Civil Hospital, Puttur on 30th July, 2011 to interact with the Govt. and private practitioners to get first hand information regarding people suffering from the health effects of aerial spraying of endosulfan. A meeting was arranged in Civil Hospital wherein medical officers from the PHC under this district participated along with some of the local health practitioners including Dr. Poornima Rao(Gynecologist), Dr. J.C. Adiga (Medical Specialist), Dr. Pai (General Practitioner and Health Activist). Dr. V. Mohan Kumar from Kasagod also participated in this meeting.

The group was informed that in Dakshin Karnataka also aerial spraying of endosulfan has been done from late 1970s till 2000 on the cashew plantation by Karnataka Cashew Development Corporation. As a result, cases similar to those of Kasargod are also seen in some of the Talukas of this district.

Dr. J.C. Adiga mentioned that there have been several cases of mental retardation specially among the adolescents and high prevalence of kidney stone is also reported from this area. He also mentioned that there is a high prevalence of brain aneurysms which usually present with subarachnoid haemorrhages.

Dr. Poornima Rao also informed that there have been several cases of repeated abortions from the areas of cashew plantations which belong to all the sections and classes of the society. She had also found there was high frequency of congenital anomalies from the individuals coming from these areas. Most of the children born were of normal weight.

Dr. Nityanandan Pai also informed that the Karnataka Govt. has already held camps to identify individuals suffering from the health effects due to aerial spraying of endosulfan and are already providing some compensation and other health facilities to the individuals. A list of such individuals is already available with the Karnataka Govt. It was also highlighted that this situation has given rise to a lot of social stigma and the girls from these areas are facing difficulty during marriage and later for child bearing probably as a result the aerial spraying of endosulfan.

Dr. Devraj from Panaje had also compiled a list of disabled (physical and mental) individuals under his PHC which has also been communicated to the Karnataka Govt. It was suggested that future studies in this area could take the rural areas of Mangalore District as controls for comparing with the aerialy sprayed districts of Dakshin Karnataka. It was also suggested that Dr.Gangadhar Nayak from the National Research Centre for Cashew, Puttur, which is under ICAR can also be involved as a resource person for future study.

On 31st July, 2011 a field visit was made. The first place visited was a school at Perla village for the affected children. The team saw 15 children of various age groups which were having mental retardation, epilepsy and cerebral palsy. These children were given special education as well as being cared for during the day at the school. The team was informed that the target for the school was 70 children but it could take care of 28 due to the constraints of infrastructure and staff. It was suggested that to increase the number children cared for it may be considered to start two batches may be on alternate day so that within the existing constraints the number of children who would get some special education can be enhanced. The staff caring for these children should be well trained at premier national institutes so that proper care and education can be imparted to these children. The specialized training component should be taken up on priority by the district and state authorities. This should be followed up by Dr. Mohammad Asheel who is looking after the health needs of the Kasargod district. It was also suggested that for all the children attending the school a detailed proforma should be developed to grade the level of mental retardation. This would help to identify the special needs of these children and accordingly the caretakers should be trained. This proforma could be administered to all the special schools in the district catering to similar cases. These could also provide reliable baseline data for future studies.

This was followed by visit to some of the houses in Vaninagar of Padre village. The cashew plantations were also visited wherein the natural springs and streams flowing through the plantations were noted. The social stigma for the girls in this area was also highlighted during the interaction with the residents during this visit.

ANNEXURE-III(a)

REPORT OF THE VISIT OF THE TEAM TO CALICUT MEDICAL COLLEGE TO ADVISE ON THE STATISTICAL ISSUES ON 5-6TH JULY 2001

The investigators acknowledged that the comments sent earlier on the suggested detailed statistical analysis had been received but reanalysis as advised after the visit by team headed by Secretary, DHR could not be completed.

The issue of "purposive sampling" of the control area was discussed and it was suggested that instead of this term, it should be mentioned that the area was selected keeping in mind the drifting of the sprayed endosulfan through wind, rivers and streams. Another issue was the reversed sex ratio in the exposed area as compared to the control area and the state of Kerala. This needs to be examined with other confounders like migration, reduced fertility and effect of other chemicals including pesticides on the female hormonal system in utero.

Drinking water sources were also different in the two area with a large chunk nearly 1/3rd in the control area belonging to others which are mainly comprised of surface water sources. This needs to be presented more clearly. Details of the animal events can also be presented in a tabular form as it was found to be more in the exposed area.

Analysis of the physical disability amongst those who were under 20 years of age is presented in Table 7. The odds of disability among 10-19 years is significantly greater in affected area as compared to the control area (OR 6.7, CI 0.87-51.5, p=0.025). However the odds of disability amongst those who are under 9 years(i.e. born after the ban on aerial spraying of endosulfan) is comparable in both the areas suggesting that the effects of aerial spraying have worn off.

The reproductive morbidity specially infertility, abortion and IUD also shows a similar trend with age groups 20-29 showing lower prevalence as compared to the 30-39 group which was exposed during the earlier spraying period(Tables 8b & 8c). However the statistical tests of significance are yet to be applied to this data.

Menopause was found to set in earlier in the sprayed area amongst the women in the age group 50-60 yrs who are expected to have been in their reproductive age during the earlier years of endosulfan spraying (1980s). It was also noted that there was a wide variance in the exposed population and the raw data needs to be re-looked for the median values and distribution patterns.

It has also been inferred that the cancer is occurring at an earlier age in the exposed population but no child was reported to have died of cancer. However, this aspect needs to be analysed further for its significance.

The data from school children was suggested to be analysed with the date of birth and computing the age in days since a small difference in age can make a significant difference in the hormonal level, height and weight during the pubertal spurt. It was suggested that analysis

should compare with the graphs of NIOH study to see whether the slope of SMR has changed over the time.

No conclusions could be drawn from the data on blood endosulfan levels since comparative data from the unexposed areas is not available at present.

The environmental monitoring data was not available and therefore could not be correlated.

Annexure III(b)

Report of joint Statistical analysis carried out during 1-3 August at NIMS, New Delhi

The physical disability among those who were under 20 years of age as presented in table 7 of the report was analyzed. The occurrence of disability among 10-19 years age group was greater in the affected area as compared to the control area. However, the differences were not found to be statistically significant.

The reproductive morbidity including infertility, abortion and IUD in the age group 20-29 is higher in affected area as compared to the control area. However, it was significant in case of abortion only. When we compare the above amongst the age group 30–39 years, the infertility, abortion and IUD are also higher in affected area than the control and it was statistically significant in case of infertility and abortion indicating that the probable effect of endosulfan is gradually coming down.

The SMR data showed delayed onset of puberty amongst boys and girls in the affected area as compared to control area. Further, compared to NIOH study carried out in 2001, the present study group showed higher scores of development of pubic hair, penis development and testicular volume amongst the boys in affected area.

The incidence of cancer deaths below age 50 years was high (2.1 per 1000 population) in the exposed population as compared to 0.33 per 1000 population in the control area.

The prevalence of congenital abnormality amongst school children above 12 years of age (before the ban of endosulfan spray) was significantly higher in affected area as compared to the control area. Compared to NIOH study the congenital malformations have come down from 4.6% to 2.2% in the affected area as compared to the drop from 2.4% to 1.6% in the control area.

ANNEXURE-IX

22

सत्यमेव जयते

Dr. Gurbachan Singh
Tel / Fax:2338 3549
E-mail : ag.comm@nic.in

कृषि आयुक्त
भारत सरकार
कृषि मंत्रालय
(कृषि एवं सहकारिता विभाग)
कृषि भवन, नई दिल्ली-110001
Agriculture Commissioner
Government of India
Ministry of Agriculture
(Department of Agriculture & Cooperation)
Krishi Bhawan, New Delhi-110001

D.O. No. AC/2011/36

2nd August, 2011

Dear Dr. Katoch,

I will be out of the country on official engagement from 3rd to 5th August, 2011. Therefore, I will not be able to participate in the meeting scheduled on 3rd August. However, most of the information on the subject alongwith necessary Annexures was submitted during the first joint committee meeting held on 7th July 2011. In light of the suggestions made during that meeting and the recent directions of the Hon'ble Supreme Court regarding views of the committee on export of the stocks of endosulfan already in the country, a meeting of the committee constituted by DAC was held on 28th July, 2011 (A copy of the proceedings is enclosed). An updated version based upon several meetings held in the past under the chairmanship of Agriculture Commissioner and also suggestions made by yourself and other honourable members of the joint committee meetings on 23rd June and 7th July 2011 has been prepared and enclosed. The five recommendations may be debated and considered for inclusion in the consolidated report of the joint committee. My colleagues Dr. Yadav and Dr. Shukla will be attending tomorrow's meeting and will offer further inputs and clarifications.

With regards,

Yours Sincerely,

(Gurbachan Singh)

Dr. V.M. Katoch,
Secretary(Deptt. of Health Research) &
DG (ICMR),
Ansari Nagar,
New Delhi.

Ministry of Agriculture
Government of India
(Department of Agriculture & Cooperation)
Krishi Bhawan, New Delhi – 110 001

Subject: Report on Endosulfan

The Hon'ble Supreme Court of India in a Writ Petition No. 213 of 2011 filed by Democratic Youth Federation of India V/s Union of India and Others has passed an ad-interim order dated 13.5.2011 for ban on production, use and sale of endosulfan. The Hon'ble Supreme Court appointed a joint committee headed by the Director General of ICMR and the Commissioner Agriculture to conduct a scientific study on the question whether the use of endosulfan would cause any serious health hazards to human beings and would cause environmental pollution.

Department of Agriculture and Cooperation (DAC) had also constituted a committee under the chairmanship of Agriculture Commissioner with representatives from ICAR/Ministry of Environment & Forestry/ICMR/Dte. of PPQ&S to review alternative pesticides to Endosulfan with a view to assess their suitability for use in agriculture with regard to the cost, potential health hazards, efficacy against target pests and such other factors as may be relevant including effect on honey bees (**Annexure-I**). The committee met on 16.5.2011 and decided that a format would be sent to Directors of Agriculture and Horticulture of States, Vice Chancellors and Directors of Research State Agriculture Universities, Deputy Director Generals of Crop Science, Horticulture and Natural Resource Management Divisions of ICAR to obtain the information at the earliest in the prescribed proforma. Further, it was decided to hold a Brain Storming session on 3rd June, 2011 in Krishi Bhawan, New Delhi with the participation of relevant officials of States, ICAR, DAC, Manufacturers, Pesticides Associations, Experts and Scientists. The minutes of the committee meeting are at **Annexure-II**.

As per the decision of the committee, a communication was sent to all concerned alongwith the proforma (**Annexure-III**).

The information received from various departments mentioned above was compiled (**Annexure-IV**) and discussed during the brain storming session held on 3rd June, 2011 in Committee Room No. 1, Krishi Bhawan, New Delhi under the Chairmanship of Agriculture Commissioner. Similarly, some information was also collected from the participants through a proforma circulated in the meeting which is enclosed at **Annexure-V.** The minutes of the brain storming session are enclosed at **Annexure-VI.**

1. The major points emerged from the discussions are as under:-

   (i) Thirty two participants from twenty states- Andhra Pradesh, Assam, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Kerala, Karnataka, Maharashtra, Madhya Pradesh, Manipur, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal participated in the meeting and provided information in the prescribed format.

   (ii) All participants, except Kerala and Karnataka, were in favour of continued use of endosulfan for the reasons being broad spectrum, cheaper, most popular among farmers, safe to pollinators, no reports on resistance/ resurgence or ill effects on human beings, animals and environment.

   (iii) The participants from Kerala supported complete ban of endosulfan because of health problems in Kasaragod District as a result of continuous aerial spraying of the pesticide by Plantation Corporation of Kerala. Similarly, Karnataka representative reported some adverse effects on human health in Puttur and Belathangdi Taluka of Dakshin Karnataka.

   (iv) The major endosulfan consuming States such as Haryana (650 metric tonnes), Punjab (600 metric tonnes), Bihar (500 metric tonnes) and Maharashtra (450 metric tonnes) did not report any

negative effect of endosulfan use on crops, human health, animals, soil and water etc.

(v) Almost all states agreed that endosulfan is comparatively safer to pollinators, honey bees, parasite predators and economical in comparison to most of the other alternate pesticides.

(vi) All states reported that alternative pesticides for endosulfan are available, but are costly and are not as safe as endosulfan for pollinators/honey bees

(vii) In most of the states no systematic scientific studies have been conducted in the past on this aspect because no adverse effects of endosulfan have been experienced in those states.

2. Under the Central Sector Scheme, Monitoring of Pesticide Residues implemented by Department of Agriculture & Cooperation through the Indian Council of Agricultural Research Network Project on Pesticide Residues, 50645 samples of various commodities such as vegetables, fruits, cereals, pulses, spices, fish, meat/egg, tea, milk, butter and water were analyzed between October, 2006 to March, 2011. Out of these 721 samples were reported having the endosulfan pesticide residue in detectable form. However, the residue reported above Maximum Residue Limit (MRL) was in 20 samples only coming to nearly 0.04% of the total samples analyzed. The state-wise analysis is given in **Annexure VII.**

3. The list of alternative pesticides for endosulfan against various insect pests on different crops as per approved level claims under the Insecticides Act, 1968 supplied by CIBRC Secretariat is enclosed at **Annexure-VIII.**

4. Quantity of endosulfan used in various states and reported by them during 2009-10 is enclosed at **Annexure-IX.**

5. Sh. Surjit Khalsi, D-225, Defence Colony, New Delhi has also submitted statement to Hon'ble Chief Justice of India, New Delhi and a copy endorsed to Agriculture Commissioner **(Annexure-X).** It is stated that he is using endosulfan for spraying of crops through tractor mounted sprayers from the age of 15 years alongwith his uncle and brothers in 45 acres farming land in Punjab and no harmful effects are found so far.

6. The above information was shared during two meetings convened under the joint chairmanship of Director General ICMR and Agriculture Commissioner on 23rd June, 2011 and 7th July, 2011. The joint committee prepared a preliminary reply and requested the honourable Supreme Court to give an additional six weeks time to file the interim report. However, the honourable Supreme Court vide order dated 15.7.2011 has extended the time to file interim report by three weeks and has further directed that interim report may cover the issue of export of existing stock of endosulfan.

7. In light of honourable Supreme Court's directions regarding issue of export of existing stock of endosulfan, Agriculture Commissioner called a meeting of the committee constituted by DAC on 28th July, 2011. Proceedings of the committee meeting are enclosed as **Annexure XI.**

Recommendations:

Agriculture Commissioner organized following meetings of the committee constituted by Department of Agriculture and Cooperation and open house brain storming session with all the stake holders:-

(a) Meeting of the committee constituted by DAC on 16th March, 2011
(b) Proforma sent to all states for getting information on endosulfan
(c) Brainstorming session with states, pesticides organizations, ICAR and other experts/scientists on 3rd June, 2011

(d) Sharing the information with joint committee members in joint meetings on 23rd June, 2011 and 7th July 2011
(e) Meeting of the committee constituted by DAC on 28th July, 2011

Based upon written material supplied by the states and suggestions received in the meetings and brain storming session, following recommendations are made for inclusion in the Joint Interim Report:

1. Except Kerala and Karnataka, most of the states desired that ban on endosulfan may not be imposed because no negative impact of this pesticide on crops, human and animal health and environment has been reported in these states. Most of these states further reported that no systemic studies have been conducted/initiated to ascertain the negative impact of endosulfan on crops, animal and human health and environment because no ill effects of this pesticide have been reported.
2. Under the Central Sector Scheme implemented by the Department of Agriculture and Cooperation and executed through the Indian Council of Agricultural Research, monitoring of pesticide residues in various commodities such as vegetables, fruits, cereals, pulses, spices, fish, wheat, egg, tea, milk and water is being undertaken regularly. This scheme was initiated during 2005-06 with the participation of various laboratories representing Ministry of Agriculture, Indian Council of Agricultural Research, Ministry of Health and Family Welfare, Ministry of Environment and Forests, Council of Scientific and Industrial Research, Ministry of Chemicals and Fertilizers, Ministry of Commerce and State Agricultural Universities across the country. Between the period October 2006 to March 2011; 50,645 samples have been analyzed throughout the country. Of these samples, 721 samples are reported having the endosulfan pesticide residue in detectable form. However, the endosulfan residue reported above Maximum Residue Limit (MRL) was in 20 samples only. This comes to about 0.04% of the total analyzed samples.
3. Since negative impact of endosulfan application on human health has been reported in some parts of Kerala and Karnataka due to unscientific use, therefore, the use of endosulfan in these states may be kept on hold. Kerala Agricultural University in collaboration with medical experts of other concerned departments/organizations need to initiate systematic studies to

know the actual effect of endosulfan on crops/animals and human being, soil and water and its future implications.

4. Alternative pesticides to endosulfan are registered and are available in the country. However, most of these alternate pesticides are reported costly and more toxic to pollinators/honey bees and also need more care during handling and use.
5. As per the information provided by the Industry to CIBRC Secretariat 194914 Kg. of technical and 818518.50 litres of formulation of endosulfan is available at present in their stock which has shelf life of two years. The committee recommends that export may be allowed to utilize the stock of technical and formulated product available with the manufacturers of endosulfan in the country. In case the export or use of endosulfan is not permitted in the country, it may be more difficult to dispose off the existing stocks and may pose environmental hazards, if not stocked/disposed properly.

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ANNEXURE - I

F. No. 13035/20/20..
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation

Krishi Bhavan, New Delhi.
Dated the 4th May, 2011

OFFICE MEMORANDUM

Subject: Constitution of Committee to review alternative pesticides to Endosulfan.

It has been decided to constitute an Committee with the following members to review alternative pesticides to Endosulfan with a view to assess their suitability for use in agriculture with regard to cost, potential health hazard, efficacy against target pests and such other factors as may be relevant including effect on honeybees:

(I) Agriculture Commissioner, DAC	-	Chairman
(II) Plant Protection Adviser, DPPQ&S, DAC	-	Member-Secretary
(iii) Representative from ICAR	-	Member
(iv) Representative from MoEF	-	Member
(v) Representative from ICMR	-	Member

2. The Committee shall co-opt such experts as it deems necessary and submit its report within three months.

3. This issues with the approval of Agriculture Minister.

(Vandana Jain)
Deputy Secretary to Government of India
Tel: 2338 2937

To:

1. The Secretary, Ministry of Environment & Forests (MoEF), New Delhi with the request to nominate a representative on the Committee.
2. The Director General, Indian Council of Agricultural Research (ICAR), New Delhi with the request to nominate a representative on the Committee.
3. The Director General, Indian Council of Medical Research (ICMR), New Delhi with the request to nominate a representative on the Committee.
4. The Agriculture Commissioner, Department of Agriculture & Cooperation (DAC), New Delhi.
5. The Plant Protection Adviser, Directorate of Plant Protection, Quarantine & Storage (DPPQ&S), Faridabad-121 001 (Haryana).

Minutes of the meeting held under the chairpersonship of Dr. Gurbachan Singh, Agricultural Commissioner to review alternative pesticides to Endosulfan on 16.5.2011

Under the background of direction of the Hon'ble Supreme Court regarding the banning of Endosulfan for its use and manufacture for eight weeks, Agriculture Commissioner, Deptt. of Agriculture & Coopn., convened a meeting of experts to explore the need to provide advisory to states on the recommendation of alternate pesticide of Endosulfan in the coming *Kharif* crop on priority keeping in view the efficacy, cost and hazards of alternate pesticides to health (human/animals) and environment, as compared to Endosulfan.

List of Participants:

1. Dr. Gurbachan Singh - Agriculture Commissioner
2. Dr. KK Sharma - Coordinator (Pesticide Residue)
3. Shri S.G. Rahate - Plant Protection Adviser
4. Dr. Sushil K. Khurana - Addl. Plant Protection Adviser
5. Dr. Tanvir Kaur - Dy. D.G., ICMR
6. Dr. O.M. Bombawale, Director, NCIPM
7. Dr. T.P. Rajendran , ADG(PP), ICAR
8. Dr. R.M. Shukla, - Joint Director, DPPQ

Director, National Centre for Integrated Pest Managment submitted the alternate pesticides to be used in place of Endosulfan. Presently Endosulfan has the label claim for 18 crops. It was decided that the format would be sent to Director(Agiriculture) Director(Horticulture) of States, Vice Chancellors and Director (Res) of the State Agricultural Universities, Dy Director General (CS), Dy Director General (Hort), Dy.Director General (NRM), to obtain the information at the earliest in the prescribed proforma.

It was decided to hold a Brain Storming session on 3rd June, 2011 in ICAR Committee Room No.1 at Krishi Bhavan, at 10.30 AM with the participation of relevant officials of States, ICAR, DAC, manufacturers, Pesticide Associations, expert Scientists.

ANNEXURE-III 31

सत्यमेव जयते

Dr. Gurbachan Singh
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कृषि आयुक्त
भारत सरकार
कृषि मंत्रालय
(कृषि एवं सहकारिता विभाग)
कृषि भवन, नई दिल्ली - 110001
Agriculture Commissioner
Government of India
Ministry of Agriculture
(Department of Agriculture & Cooperation)
Krishi Bhawan, New Delhi - 110 001

D.O. No. AC/2011/29

Dated: May 19, 2011

Dear Prof. Kannan,

As you may be aware that Hon'ble Supreme Court of India in a Writ Petition No. 213 of 2011 filed by Democratic Youth Federation of India Vs Union of India and others has passed an ad-interim order dated 13.5.2011 inter-alia banning with immediate effect the production, use and sale of endosulfan all over India. Further, vide the aforesaid order, the Hon'ble Supreme Court appointed a Joint Committee headed by Director General, ICMR and Agriculture Commissioner to conduct a scientific study on the questions whether the use of endosulfan would cause any serious health hazards to human beings and would cause environmental pollution. Pursuant to the aforesaid directions, DAC had already written to all State Governments for issuing suitable instructions to Licensing Officers notified under section 12 of the Insecticides Act, 1968 and to Insecticides Inspectors appointed under section 20 of the Insecticides Act 1968 for strict implementation of the order of Hon'ble Supreme Court.

2. In the aforesaid context, DAC has also constituted a Committee under the Chairmanship of Agriculture Commissioner with representatives from ICAR/MoEF/ICMR/DPPQ&S to review alternative pesticides to endosulfan with a view to assess their suitability for use in agriculture with regard to the cost, potential health hazard, efficacy against target pests and such other factors as may be relevant including effect on honeybees. For the Committee to progress ahead in the tasks mandated to it, certain critical information in the enclosed format would be required from all State Governments, SAUs and ICAR. Hence, I shall be grateful, if you would please provide the information in the enclosed format at the earliest in the next 3-4 days.

3. A meeting with all State Governments, ICAR, SAU experts and Manufacturer Associations alongwith other stakeholders has been scheduled to be organized on 3.6.2011 at 10.30 A.M. at ICAR's Committee Room No.I, Krishi Bhawan, New Delhi. In addition to sending the requisite information in the enclosed format, you are also requested to please depute your representative in this meeting during which the information sent by you would be deliberated upon and final recommendations could be arrived at.

With regards,

Yours sincerely,

(Gurbachan Singh)

Letters issued -
20/5/2011
PPS to A.C.

Encl: as above

To

1. Vice Chancellors, SAU and Central Agricultural Universities.
2. DDG(Horticulture)/ DDG(Crops)/ DDG(NRM), ICAR, New Delhi
3. Directors of Agriculture/Horticulture
   All State Governments/UTs
4. Chairman, Tea Board

Annexure-IV

Compiled Information on use of Endosulfan submitted by various state/UT,Deptt. of Agriculture/Horticulture/SAUs/Central Universities/ICAR

Name of State/UT	Endosulfan used or not	Alternatives available or not	Reported adverse effect on human beings/animals	Effect on Honey bees/ pollinators/natural enemies	Effect on environment
Andhra Pradesh-ANGRAU	Yes	Yes	-----	-----	----
Assam-AAU,Jorhat	Yes	Yes	Not reported	Not studied	Not reported
Bihar-RAU,Bihar	Yes	Yes	Information not available	Moderately toxic	---
Chhattisgarh-Dte.Hort./Agri. **IGKV,Raipur-Only yield base data given.**	Yes	Yes	Not reported	Not reported	----
Gujrat AAU,Anand JAU,Junagarh Dte.Agri SDAU,Sardar krushi nagar Navsari A.U.	Yes Yes Yes Yes yes	Yes Yes Yes Yes yes	--- Not studied --- NIL Works on residue status not carried out	Moderately toxic Safe --- NIL Moderately toxic to honey bees but less toxic to natural enemies.	--- Not studied --- Nil Works on residue status not carried out
Haryana Dte. Agri./HAU,Hisar	Yes	Yes	No	Comparatively safe	No
Himachal Pradesh-Dte.Hort. CSKHPKVV	Yes Yes	Yes Yes	Not reported Not reported	Safe Not reported	Not reported Not reported
Jharkhand Dte. of Agri.	Yes	Yes	N.A.	Moderate Safe	N.A.

Jammu & Kashmir Division-UAS&T Dte.Hort. Dte. of Agri Kashmir	Yes Yes No	Yes Yes NA	Not studied Yet to be ascertained --	Moderately toxic Insignificant --	Not studied Yet to be ascertained --
Karnataka Dte.Hort./ UAS-Dharwad/ UAS-Raichur/ Deptt. Agri.	Yes No Yes Yes	Yes No Yes Yes	Unsafe Not reported No Reported in Puttur and Belathangdi taluks of Dakshin Kannada Distt.	Unsafe Safe but to be reviewed Safe safe	Unsafe Not reported No Reported in Puttur and Belathangdi taluks of Dakshin Kannada Distt
Kerala-KAU	No	Yes	NA	NA	NA
Maharashtra PDKV,Akola Dr.BSKKV,Dapoli.	Yes Yes	Yes yes	NIL So far no evidence	NIL Comparatively safe	NIL So far no evidence.
Manipur-Dte.Agri./ Central A Uni. Deptt.of hort.	No Yes ----	Yes Yes yes	NIL No report ----	NIL Least/Less toxic ------	NIL No report ------
Mizoram Dte. of Hort.	Crops are Agri. Deptt. not perview of Hort.Deptt	Crops are Agri. Deptt. not purview of Hort.Deptt	Crops are Agri. Deptt. not purview of Hort.Deptt	Crops are Agri. Deptt. not purview of Hort.Deptt	Crops are Agri. Deptt. not purview of Hort.Deptt
Nagaland Dte. of Hort.	Hort. Deptt. not purchasing/using Endosulfan	---	----	---	----
Punjab PAU,Ludhiana Dte. Agri.	Yes -----	Yes ----	Nil ------	Nil ---	Nil ----
Rajasthan Dte. of Hort. MPUA&T,Udaipur	Yes yes	Yes yes	--------- Not studied	---- Not studied	----- Not studied
Tamil Nadu-TNAU	Yes	Yes	-------	No scientific data available	------

Uttar Pradesh BHU, GBPUA&T,Pantnagar Dte. of Agri.	Yes Yes yes	Yes Yes yes	No specific report Not studied/known No report is available	Comperatively safe Not studied/known Less toxic & safer to honey bees.	No specific report Not studied/known No report is available
West Bengal Dte. of Horti.	No	Yes	---	----	----
Uttarakhand Dte. of Horti.	Yes	NA	NA	NA	NA
IARI,New Delhi	Yes	Yes	No documentary evidence	No documentary evidence	No documentary evidence
ICAR,New Delhi,Hort.Div.	Yes	Yes	No information	Safe	No information

ANNEXURE-V

Information collected during meeting by circulation of format

Thirty two participants from twenty states- Andhra Pradesh, Assam, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu &Kashmir, Kerala, Karnataka, Maharashtra, Madhya Pradesh, Manipur, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand, and West Bengal have provided information through the format. All participants except Kerala are in favour of continued use of Endosulfan for the reasons being broad spectrum, cheaper, most popular among farmers, safe to pollinators, no reports on resistant, resurgence or ill effects on human beings, animals and environment. The participants from Kerala supported complete ban of Endosulfan because of health problems in Kasaragod District as a result of continuous aerial spraying of Endosulfan by PCK.

Annexure-VI

MINUTES OF THE MEETING HELD UNDER THE CHAIRMANSHIP OF DR.GURUBACHAN SINGH, AGRICULTURAL COMMISSIONER TO REVIEW ALTERNATIVE PESTICIDES FOR ENDOSULFAN

A Meeting was held under the Chairmanship of Dr.Gurubachan Singh, Agricultural Commissioner to review the alternative pesticides for Endosulfan on 3rd June, 2011 at 10.30 A.M. in Committee Room No.1, ICAR, Krishi Bhawan, New Delhi. The list of participants from various Departments is enclosed at Annexure-

At the outset Chairman welcomed the participants and briefed about the background of the meeting. He emphasized that the information on use of Endosulfan, availability of eco-friendly alternatives, economics and effect on human health, animal, soil, water and the environment may be provided.

The State-wise discussions held are as under:

1. PUNJAB: Representative from PAU informed that Endosulfan has been used in the State for 40 years for control of various pests. The product is effective and there is no report of resistance, resurgence and ill-effects on human health, animals and the environment. The product is safe to honeybees and natural parasites and predators. At the same time, it is economic in comparison to other alternatives. Further, in 4,000 samples of food commodities analyzed for monitoring, residues of Endosulfan have been reported below MRL. Director of Agriculture, Punjab Govt. informed that there is no ill effects reported on use of Endosulfan, even the maximum consumption of Endosulfan in cotton crop before introduction of BT. cotton approximate 110 MT annually.
2. HARYANA: Representative from Department of Agriculture, Horticulture and scientist from CCS, HAU, Hissar, informed that Endosulfan is an effective broad spectrum insecticide, acaricide and widely used by the farmers. It is safer to honeybees, natura enemies, human beings, animals and environment. Alternates for this insecticide are available but

comparatively very costly. No case of pesticide poisoning from Endosulfan has been reported. Director Horticulture of Haryana Govt. informed that they are not using Endosulfan on horticulture crops. No study has been made on ill effect of Endosulfan on animal and human beings.

3. UTTAR PRADESH: Scientist from Sardar Ballabhbhai Patel University of Agriculture & Technology, Meerut and BHU Varanasi informed that Endosulfan is used in maize, mustard, vegetables, wheat, gram, mango, sugarcane and is also an important component of IPM. Safer to honeybees and natural enemies and no adverse effect has been reported in the State. Alternates are also available but also at very high cost.
4. KARNATAKA: Representative from UAS, Bangalore, informed that Endosulfan has been in use for more than 40 years. It is safe to pollinator, predators, natural enemies. No economic alternatives are available and no adverse effects on human health, animals and environment is reported but no study was undertaken by state Govt.
5. HIMACHAL PRADESH: Representative from State informed that this insecticide has been in use for last 40 years in vegetables, oil seeds and fruits. No adverse effect of this insecticide has been reported on human health, animals and environment and this is very safe to honeybees. Residues of this insecticide in vegetables have been reported below detectable limits. No better economic substitute is available.
6. JAMMU & KASHMIR: Endosulfan is used in paddy, maize, mustard, apple and is very effective and safe insecticide. It is reported moderately toxic to honeybees. No adverse reports on human health, animals and environment have been reported. Residue in apple reported to be below MRL.
7. DELHI: Representative from Delhi Govt. informed that no adverse effect have been reported about Endosulfan and consumption is very less about 15-20 MT.
8. RAJASTHAN: The representative of Rajasthan informed that this insecticide is widely used Wheat, cotton, maize, paddy, gram, etc. This is a safer, cheaper and eco-friendly insecticide. No adverse effects have been reported. No study made on animal and human beings.

9. MANIPUR: Scientist from Central Agricultural University, Endosulfan is liked by the farmers for controlling sucking pests in many crops. It is best insecticides for safety of pollinator, predators and parasites. Residues of this insecticide have been reported below MRL.

10. KERALA: The representative of Kerala Govt. informed that Endosulfan has been used for more than twenty years as aerial spray. There were some reports from Kasargod during 2001. Some studies were conducted by state department and further reviewed by various Committees of State as well as Central Govt., but the adverse effect on human being could not be established due to Endosulfan. However, as a precautionary measure State as well as centre the use of Endosulfan in Kerala State has been kept on hold since 2005.

Scientist from KAU informed that in spite of ban on use of Endosulfan in Kerala, the residues of this insecticide are still found in cardamom.

11. ASSAM: Scientist from AAU,Jorhat informed that this product is being used for controlling various pest in tea,cotton,rice. No adverse effects have been reported on human beings and environment. It is moderately toxic to honey bees. No other concern is there in Assam state regarding the issue of Endosulfan however there is no study made.

12. UTTARAKHAND: Representative from hoeticulture deptt. informed that this product is used for control of various pest in fruits, vegetables, rice etc. No adverse effects on human beings, animals and environment have been reported.

12. WEST BENGAL: - Scientist from BCKV informed that 1700 samples analysed for residue have the report of Endosulfan in about 1.0% samples which are below the MRLs. No adverse effects on human beings, animals and environment have been reported.

13. TAMIL NADU: Representative from Tamil Nadu reported that the product is being used against sucking pests, bollworms, in various crops. It is safe to honey bees, no resistant and no ill effect on human beings,

animals and environment. It is reported as best molecule for insecticide resistant management.

14. GUJRAT: It is used in the state since 1977 on groundnut, pea, and vegetables and reported safe to pollinators & natural enemies. Reported best molecule for insecticide resistant management. No poisoning cases have been reported in the state. No residue has been detected in milk, butter and water. Alternatives available are highly toxic to honey bees.

15. ANDHRA PRADESH: Representative from A.P.Government informed that Endosulfan is being used since last forty years for control of various pest on cotton,rice,pulses,vegetables,fruits etc. This is third major chemical liked by farmers and safe to pollinators, human beings and animals and has no environmental concern. Scientist from ANGRAU supported the information given by his counter part and also reported that in vegetables few samples have the residue of Endosulfan but the below the MRL. It fits best in IPM, alternates are costly and no health hazards reported in the state.

16. CHHATTIS GARH: The pesticide is used in the state in low quantity, alternates available are not economic, no reports on resistant, resurgence and ill effects on human beings and environment. The representative is not in favour of ban of Endosulfan. Consumption of Endosulfan is 20MT.

17. ORRISSA: Scientist from OUAT informed that Endosulfan is in low use approximately 7% of total consumption of pesticide in the state for control of various pests of vegetables, cotton, jute, rice etc. It is cheap & effective as well as safer to honey bees. No adverse effects have been reported on human health and environment.

18. MAHARASHTRA: The representative informed that Endosulfan is a broad spectrum, cheaper, safe insecticide for control of various pests and there is no specific concern regarding the use of Endosulfan specially poisoning, residue & ill effects.

19. MADHYA PRADESH: The representative stated that Endosulfan is being used in the state from last forty years as broad spectrum insecticide very popular among the farmers. It is safer to honey bees and there are

no reports on resistant, resurgence and ill effects on human being & environment.

20. AINP ON PESTCIDE RESIDUE, ICAR, NEW DELHI: Dr.K.K.Sharma, Net work Co-coordinator reported that under the pesticide monitoring scheme of DAC ,various samples of food commodities such as vegetables, fruit, meat, soil, water etc are being analyzed for pesticidal residue. During last six year 49000 samples have been analyzed out of which 9% samples were having the residue out of which 1.5% exceeds the MRLs.

21. PESTICIDE ASSOCIATIONS:

(A). CROP LIFE INDIA: The president informed that various reviews have been conducted by the regulatory authorities for Endosulfan based on scientific knowledge available nationally/internationally all have recommended continue use of Endosulfan. Any further decision on this product should be based on science.

(B). CROP CARE FEDERATION OF INDIA: The president informed that the problem of Endosulfan use has been created by environment activists through some cooked data from some laboratories. There is no problem in use of Endosulfan in any state except Padre Village in Kerala. The health records of factory workers are available which shows no adverse effect on health.

(C). PESTICDE MANUFACTURE AND FORMULATORS ASSOCIATION OF INDIA: The president informed that there is no health concern in use of Endosulfan worldwide but this molecule has been withdrawn by the manufacturers due to no interest in generating fresh data on this molecule. While taking any further decision the availability of stock of technical as well as formulations of Endosulfan with Pesticide Industry may be kept in mind.

Another presentation was made by Dr. Mithyantha regarding chemistry, toxicity, of the molecule. The salient points mentioned in the presentation were about the unique chemistry, safety to pollinators,

natural enemies, human beings, animals & environment; cost effectiveness, broad spectrumness etc.

(D). ENDOSULFAN MANUFACTURE & FORMULATORS ASSOCIATION: Dr.Dhuri made a presentation on various aspects of ill effects reported in Padre Village of Kerala based on facts of earlier reports/ studies. It was summarized that these ill effects are yet to be proved through epidemiological studies.

The meeting ended with the vote of thanks to the chair.

List of participants:

S.No.	Name	Designation & Address
I.	State Department of Agriculture/Horticulture:	
1.	Sh. Surinder Pal Singh	Deptt. of Agri. Haryana.
2.	M. Balaram Nair	Deptt. of Agri. Andhra Pradesh.
3.	Dr. R.K. Singh	Deptt. of Horticulture, Uttarakhand
4.	Dr. K. Prathapan	State Deptt. of Horticulture, Kerala
5.	Sh. Pushpangadan V.V.	Addl. Dir. Of Agri., Kerala
6.	Sh V.R. Solanki	Jt. Dir. Of Agri. (PP), Dte. of Agri., Rajasthan, Jaipur.
7.	Sh. A.P. Saini	F.J.S. O/o Joint Director Agriculure, Govt. of Delhi
8.	Dr. S.K. Srivastava	PCCDL, New Delhi
9.	Sh. Shadiq A. Wani	Skuast, Shalimar, Srinagar
10.	Dr. Duni Chand Sharma	CSK, Himachal Pradesh
11.	Dr. B.S Sehrawat	Joint Director Horticulture
12.	Sh. S.R. Verma	Joint Director Agriculture, Raipur, Chhattisgarh
13.	Sh. Jagroop Singh Yadav	Director, Horticulture, Rajasthan
14.	Dr. S. S. Jamwal	Jt. Director of Agri. (Extn.), Jammu (J&K)
15.	Sh. Ghawate V.N.	Chief QC Officer, Commissioner of Agriculture, Pune
16.	Sh. Bharat Modi	Joint Director of Agriculture, Gujarat
17.	Sh. R. Paliwal	Jt. Dir. (PP), Deptt. of FWXAD, Bhopal, M.P.
18.	Sh. Rajendra Kumar	Deptt. of Horticulture and Food Processing, Madhya Pradesh
19.	Dr. Y.P. Singh	Asstt. Entomoloist, HETC, Saharanpur
20.	Dr. B.S. Sidhu	Director Agriculture, Punjab
II.	State Agricultural Universities:	
21.	Dr. S.K. Panda	Prof. Deptt. of Ento., College of Agri., Bhubneshwar
22.	Dr. D.J. Pophaly	Prof. & Head Ento., IGKV, Raipur (CG)
23.	Dr. Balwinder Singh	Senior Pesticide Anayst, Deptt. of Entomology. PAU, Ludhiana
24.	Dr. Paresh G. Shah	Pest. Res. Lab., Anand Agri. University, Anand (Gujarat)
25.	Dr. M.B. Patel	Prof. & Head, Deptt. of Ento., NMCA, Navsari (Gujarat)
26.	Dr. S. Chandrasekaran	Prof of Ento. TNAU, Coimbatore
27.	Dr. Hemanta Banerjee	Prof. & OIC, AINP on Pesticide Residues, BCKV, West Bengal
28.	Dr. L.K. Hazarika	Dean, Faculty of Agriculture, Assam Agri. University, Jorhat
29.	Dr. Naseema Beevi	Kerala Agri. University, Kerala
30.	Dr. M. Premjit Singh	Director (Extension Education), Central Agri. Uni., Imphal
31.	Dr. R.P. Singh	Instt. Of Agri. Science, B.H.U., Varanasi

32.	Dr. A.K. Chakraborty	Prof. & Head, Deptt. of Ento., UAS, GKVK
33.	Dr. H.B. Singh	Prof., Deptt. of Plant Patho., BHU, Varanasi
34.	Dr. Gaje Singh	Sardar Vallab Bhai Patel Agri. Uni., Modipuram, Meerut
35.	Dr. S.P. Singh	Prof. & Head, Deptt. of Ento., CCSHAU, Hisar
36.	Prof. Akhtar Haseeb	Deptt. of Plant Protection, AMU, Aligarh
37.	Dr. Beena Kumari	Sr. Analytical Chemist, CCSHAU, Hisar
38.	Dr. S.S. Randhawa	Director of Research, GADVASU, Ludhiana
39.	Dr. R.K. Gupta	Associate Professor, SKUAST, Jammu
40.	Dr. T.V.K. Singh	Principal Scientist Res., ANGRAU, Hyderabad
41.	Dr. S.B. Das	Pr. Scientist (Ent.), Deptt of Ento., COA, JNKVV, Jabalpur
42.	Mr. S.S. Munje	Asstt. Prof., Dr. PDKV, Akola
III.	**Ministry of Agriculture, Govt. of India – DAC/ICAR:**	
43.	Dr. K.K. Sharma	Network Coordinator, Pesticide Residues, IARI, New Delhi
44.	Sh. G.T. Gujar	Head, Divn. Of Ento., IARI, New Delhi
45.	Dr. V.K. Yadava	APPA & Secretary, CIB&RC
46.	Dr. T.P. Rajendran	Asstt. Dir. Gen. (PP), ICAR
47.	Sh. Om Bambawale	Director, NCIPM
48.	Dr. S. Rajan	Asstt. Director General (Hort.)
49.	Dr. B.S. Phogat	Dte. of PPQ&S
50.	Dr. R.M. Shukla	Dte. of PPQ&S
IV.	**Pesticide Manufacturers' Association:**	
51.	Sh. R.D. Shroff	Chairman, Crop Care Federation
52.	Sh. P.K. Mazumdar	Crop Life India
53.	Sh. Pradeep Dave	Pesticide Manufacturers & Formulators Association of India
54.	Sh. S.P. Parmar	Punjab Chemicals & Crop Protection Ltd., Chandigarh
55.	Dr. S. Kundu	Excel Crop Care Ltd., Mumbai
56.	Dr. M.C. Pandey	Excel Crop Care Ltd., Delhi
57.	Dr. A.V. Dhuri	Endosulfan Mfg. & Formulators Association
58.	Dr. M.S. Mithmantha	Crop Care Federation
59.	Sh. Raj Kumar Singh	Reg. Executive Director, PMFAI
60.	Sh. Pradeep Sinha	Excel Crop Care Ltd.
61.	Sh. Padmendra S. Rawat	United Phosphorus Ltd.
62.	Sh. P.P. Mathur	CCFI
63.	Sh. Siddharth Singh	Dhanuka Agritech Ltd.
64.	Sh. Uttam Gupta	Crop Life India

ANNEXURE-VII 44

ALL INDIA NETWORK PROJECT ON PESTICIDE RESIDUES

Division of Agricultural Chemicals, B-2 Block, LBS Building
Indian Agricultural Research Institute, New Delhi –110 012

Dr. K.K.Sharma
Network Coordinator

Ph. (Off) 25846396, (Resi.) 27860746
E-mail: kksaicrp@yahoo.co.in

No. AINP/105
Date: 30.7.2011

Dr. Gurbachan Singh
Agriculture Commissioner
Department of Agriculture and Cooperation
Ministry of Agriculture, Krishi Bhawan, New Delhi – 110 114

Subject: Residues of endosulfan regarding ...

Sir,

Please refer to meeting held on 28.7.2011 in the chamber of Agriculture Commissioner, DAC on the above cited subject. The desired information pertaining to central sector scheme, "Monitoring of Pesticide Residues at National Level" for the period 2006-2011 is attached as annexure.

Yours faithfully

(K.K.Sharma)

Copy to :

1. The Secretary DARE and DG, ICAR, Krishi Bhawan, New Delhi
2. The Joint Secretary (PP), DAC, Krishi Bhawan New Delhi
3. The Director, IARI, New Delhi
4. The Assistant Director General (PP), ICAR, Krishi Bhawan, New Delhi
5. The Joint Director (Reseach), IARI, New Delhi

Background of the scheme

The Department of Agriculture and Cooperation, Ministry of Agriculture is regularly monitoring the pesticide residues in food commodities and environmental samples under the central sector scheme, "Monitoring of Pesticide Residues at National Level". The scheme was initiated during 2005-06 with the participation of various laboratories representing Ministry of Agriculture, Indian Council of Agriculture Research, Ministry of Health and Family Welfare, Ministry of Environment and Forest, Council of Scientific and Industrial Research, Ministry of Chemical and Fertilizer, Ministry of Commerce and State Agricultural Universities across the country.

The main objectives of the scheme include:

- To test pesticide residues and other contaminants in food commodities and environmental samples like soil and water
- To identify crops and regions having preponderance of pesticide residues in order to focus extension efforts for Integrated Pest Management (IPM) and Good Agriculture Practices (GAP)
- To strengthen infrastructure at Quarantine stations to prevent entry of food and food commodities which have pesticide residues above maximum residue limit (MRL).
- Testing / Certification of pesticide residue in export / import consignments

The participating laboratories are:

1. Project Coordinating Cell, All India Network Project on Pesticide Residues, LBS Building, Indian Agricultural Research Institute, New Delhi
2. Dept. of Entomology, Punjab Agricultural University, Ludhiana, Punjab
3. ICAR Unit No.-9, BTRS Building, Anand Agriculturai University, Anand, Gujarat
4. Dept. of Entomology, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra
5. Dept. of Entomology, College of Agriculture, Kerala Agricultural University, Vellayani, Kerala
6. Division of Soil Sci. & Agril. Chemistry, IIHR, Hessaraghatta Lake Post, Bangalore,Karnataka
7. Dept. of Entomology, RAU, Agricultural Research Station, Durgapura Jaipur Rajasthan

8. College of Agriculture, Department of Entomology, Acharya N.G. Ranga Agricultural University, Rajendranagar, Hyderabad ,Andhra Pradesh
9. Dept. of Agricultural Entomology, Tamil Nadu Agricultural University, Coimbatore ,Tamil Nadu
10. Institute of Pesticide Formulation Technology (IPFT), Sector – 20, Udyog Vihar, Gurgaon, Haryana
11. National Institute of Occupational Health, P. E. No. 2031, Meghani Nagar, Ahmedabad , Gujarat
12. Western Region Referral Laboratory, Department of Veterinary Public Health, Bombay Veterinary College, Parel, Mumbai, Maharashtra
13. MPEDA, MPEDA House, Panampilly Avenue, Kochi , Kerala
14. Pesticide Toxicology Laboratory, Indian Institute of Toxicology Research, Mahatma Gandhi Marg, Lucknow, Utter Pradesh
15. Trace Organic Laboratory, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi
16. National Environmental Engineering Research Institute, Nehru Marg, Nagpur, Maharashtra
17. Regional Plant Quarantine Station, Haji Bunder Road, Sewri, Mumbai, Maharashtra
18. Regional Plant Quarantine Station, G.S.T. Road, Meenambakkam, Chennai , Tamil Nadu
19. AINP on Pesticide Residues, Directorate of Research, Research Complex Building, Kalyani, Nadia, West Bengal
20. Dept. of Entomology, Dr. Y.S.P. Univ. of Horticulture & Forestry, Nauni, Solan, Himachal Pradesh
21. National Plant Quarantine Station, Rangpuri, New Delhi

State-wise status of Pesticide Residues in different Food Commodities and Environmental Samples

(October, 2006-March, 2011)

Name of the Laboratory	State of sample location	Sample analysed	Samples with detected Residues	Samples with detected endosulfan residues	Samples above MRL PFA/CODEX	Samples with endosulfan residues above MRL PFA/CODEX
AAU, Anand	Gujarat	2501	496	92	97	0
AAU, Jorhat	Assam	342	47	0	2	0
ANGRAU, Hyderabad	Andhra Pradesh	3075	182	52	14	0
BVC, Mumbai	Maharashtra	1520	195	22	11	3
BCKV, Kalyani	W. Bangal	1986	148	23	16	1
CPCB, Delhi	Delhi	2773	147	1	0	0
IIHR, Bangalore	Karnataka	2111	228	20	56	0
IITR, Lucknow	Uttar Pradesh	2276	385	42	122	1
IPFT, Gurgaon	Haryana	2628	121	15	41	1
KAU, Vellayani	Kerala	2821	142	4	82	0
MPEDA, Kochi	Kerala	1740	20	1	0	0
MPKV, Rahuri	Maharashtra	2781	109	29	24	0
NEERI, Nagpur	Maharashtra	2700	43	13	0	0
NIOH, Ahmedabad	Gujarat	2754	274	42	36	1
NPQS, Delhi	Uttar Pradesh	696	36	12	5	0
P. C. Cell, New Delhi	Delhi	2505	532	167	85	4

Name of the Laboratory	State of sample location	Sample analysed	Samples with detected Residues	Samples with detected endosulfan residues	Samples above MRL PFA/CODEX	Samples with endosulfan residues above MRL PFA/CODEX
PAU, Ludhiana	Punjab	2871	208	61	46	3
RAU, Jaipur	Rajasthan	2621	142	24	35	0
RPQS, Chennai	Tamilnadu	2516	284	54	49	1
RPQS, Mumbai	Maharashtra	2100	81	15	11	0
TNAU, Coimbatore	Tamilnadu	2794	51	18	13	5
Dr. YSPUHF, Solan	Himachal Pradesh	2534	359	14	34	0
	Total	50645	4230	721	779	20

Commodities monitored : Vegetables, Water, Fruits, Rice, Wheat, Pulses, Milk, Animal Feed, Fish/ Marine, Meat, Spices, Tea, Eggs, Honey and Soil

Annexure-VIII

Crop-wise and pest-wise approved uses and alternatives of Endosulfan

Crop	Insect Pest	Alternate Insecticide*
(A) Endosulfan 35% EC		
Paddy	Gall midge	Carbofuran 3%CG,Cabosulfan 6%GR,Carbosulfan 25%EC, Chlorpyriphos 10%GR, Chlorpyriphos 20%EC, Chlorpyriphos 1.5%DP,Etophenprox 10%EC, Fipronil 5% SC, Lambda-cyhalothrin 2.5% EC, Lambda-cyhalothrin 5% EC, Methyl Parathion 50% EC,Phorate 10%CG, Quinalphos 5%GR, Thiamethoxam 25%WG,
	Hispa	Carbofuran 3%CG, Chlorpyriphos 20%EC, Lambda-cyhalothrin 2.5% EC, Lambda-cyhalothrin 5% EC, Malathion 50% EC, Methyl Parathion 50% EC, Phorate 10%CG,Quinalphos 25% EC, Quinalphos 25% Gel,Triazophos 20%EC &40%EC
	Stem borer	Acephate 75%SP, Azadirachtin 0.15% NSK, 0.3%EC & 5% Neem Extract,Benfuracarb 3%GR, Carbofuran 3%CG, Carbosulfan 6%GR & 25%EC,Cartaphydrochloride 4%GR &50%SP,, Chlorantraniliprole 18.5%SC &0.4%GR, Chlorpyriphos 1.5%DP,10%GR, 20%EC , 50%EC & 1.5%DP, Deltamethrin 1.8%EC & 11%EC,Etophenprox 10%EC, Fipronil 5%SC ,0.3%GR &80%WG, Flubendiamide 20%WG & 39.35%SC, Lambda-cyhalothrin 4.9%CS, 2.5%EC &5%EC, Methyl parathion 50%EC, Monocrotophos 36%SL,Phorate 10%CG,Phosalone 35%EC,Phosphamidon 40%SL,Quinalphos 25%Gel, 5%GR,,20%AF &25%EC, Thiacloprid 21.7%SC,Triazophos 20%EC &40%EC, Thiamethoxam 25%WG,. Phosphamidon 40%+Imidacloprid 2%SP,
	White jassid	Nil
Gram	Pod Borer	Azadirachtin 0.03%WSP,Carbaryl 10%DP,Chlorpyriphos 1.5%DP, Deltamethrin 2.8%EC, Emamectin benzoate 5%SG, Ethion 50%EC, Monocrotophos 36%SL, Novaluron 10%EC,*NPV of H.a.* 2%AS,Quinalphos 25%EC,&1.5%DP.
	Aphid	Nil

Cotton	Aphid	Acetamiprid 20%SP, Azadirachtin 0.03%WSP, Buprofezin 25%SC,Carbaryl 5%DP,Carbosulfan 25%DS, Chlorpyriphos 20%EC, Clothiadin 50%WDG, Deltamethrin 1.8%EC & 2.8%EC,Difenthiuron 50%WP,Dimethoate 30%EC, Fenvalerate 20%EC,Fipronil 5%SC,Fluvalinate 25%EC,Imidacloprid 70%WG,48%FS,70%WS,30.5%SC &17.8%SL, Malathion 50% EC, , Methyl Parathion 50% EC &2%DP,, Monocrotophos 36% SL, Oxydemeton methyl 25% EC, Phorate 10%CG, Profenophos 50%EC,Quinalphos 1.5%DP,Thiacloprid 21.7%SC, Thiamethoxam 25 %WG &30%FS, Acephate 25%+Fenvalerate 3%EC ,Acephate 50%+Imidacloprid 1.8%SP,Cypermethrin 3%+quinalphos 20%EC,
	Jassids	Acephate 75%SP, Azadirachtin 0.03%WSP,& 5% Neem ext.conc.,Acetamiprid 20%SP, Buprofezin 25%SC, Carbaryl 5%DP,Carbosulfan 25%DS,Cypermethrin 25%EC, Clothiandin 50%WDG,Deltamethrin 1.8%EC &2.8%EC, Diafenthiuron 50%WP, Dimethoate 30%EC,Fenvalerate 20%EC,Fipronil 5%SC,Fluvalinate 25%EC,Imidacloprid 70%WG,48%FS,70%WS,30.5%SC &17.8%SL,Lambda-cyhalothrin 2.5%EC &5%EC,Malathion 50%EC,Methyl parathion 2%DP &50%EC, Monocrotophos 36% SL, Phorate 10%CG,Phosalone 35%EC &4%DP,Profenophos 50%EC, Quinalphos 25% EC,Thiacloprid 21.7%SC, Thiamethoxam 25% WG. Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP, Cypermethrin 3%+Quinalphos 20%EC, Indoxacarb14.5%+Acetamiprid 7.7%SC,
	Whitefly	Acetamiprid 20 SP, Azadirachtin 0.15% EC,, 0.03WP& 5%extract,Bifenthrin 10%EC,Buprofezin 25%SC, Chlorpyriphos 20%EC, Clothiandin 50%WDG,Deltamethrin 1.8%EC &2.8%EC,Diafenthiuron 50%WP, Ethion 50%EC,Fenpropathrin 30%EC,Fipronil 5%SC,Imidacloprid 48%FS,70%WS &17.8%SL,Malathion 50%EC, Monocrotophos 36%SL,Phorate 10%CG,Thiaclopric 21.7%SC,Thiamethoxam 30%FS, 70%CS &25%WG, Triazophos 40% EC,*Verticillium lecanii* 1.15%WP. Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP, Deltamethrin1%+Triazophos 35%EC, Indoxacarb14.5%+Acetamiprid 7.7%SC,
	Thrips	Phorate 10%CG,Phosalone 4%DP,Profenophos 50%EC,Quinalphos 1.5%DP,Thiacloprid 21.7%SC,Thiamethoxam 70%WS &25%WG,Buprofezin 25%SC,Carbosulfan 25%DS,Cypermethrin 25%EC,Deltamethrin 1.8%EC&2.8%EC,Diafenthiuron 50%WP,Dimethoate 30%EC,Fenvalerate 20%EC,Fipronil 5%SC,Imidacloprid 70%WG,40%FS,30.5%SC &17.8%SL,Lambda-cyhalothrin 2.5%EC &5%EC, Malathion 50%EC,Methyl parathion 2%DP &50%EC,Monocrotophos 36%SL, Thiamethoxam 25%WG, Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP,

	Leaf roller	Nil
Mustard,	Aphid	Chlorpyriphos 20% EC Dimethoate 30% EC, Malathion 50% EC, Methyl Parathion 2%DP , Monocrotophos 36 SL. Oxydemeton methyl 25%EC,Phorate 10%CG, Phosphamidon 40%SL.
	Gall midge	Nil
Bhindi	Aphid	Azadirachtin 5% Neem ext.conc.,Carbofuran 3%CG,Dimethoate 30%EC,Imidacloprid 70%WG,48%FS,70%WS &17.8%SL,Malathion 50%EC,Permethrin 25%EC,Thiamethoxam 70%WS.
Chillies	Aphid	Carbosulfan 25%EC,Fipronil 5%SC,Imidacloprid 70%WS &17.8%SL,Lambdacyhalothrin 5%EC,Oxydemeton methyl 25%EC,Phorate 10%CG,Phosalone 35%EC,Quinalphos 25%Gel ,25%EC & 1.5%DP.
Wheat	Aphid,	Quinalphos 25 EC, Thiamethoxam 25%WG,Thiometon 25 EC,
	Termites	Thiamethoxam 30%FS.
	Pink borer/ Armyworm	Dichlorvos 76%EC, Methylparathion 50%EC.
Jute	Semilooper,	Azadirachtin 0.03% WSP, Quinalphos 1.5%DP & 25%ECQuinalphos 25 EC ,Phosalone 35 EC
	Bihar hairy caterpillar	Azadirachtin 0.03% WSP
Tea	Aphid,	Phosalone 35%EC,
	Hairy caterpillar	Deltamethrin 2.8%EC,Profenophos 50%EC,Quinalphos 20%AF
	Milly bug/ Tea mosquito	Profenophos 50%EC,Thiamethoxam 25%WG
	Scale insects.	NIL
Maize	Pink borer/Stem borer	Carbofuran3%CG, Phorate 10%CG.

	Aphid	NIL
Mango	Hopper,	Buprofezin 25%SC,Carbaryl50%WP,Deltamethrin2.8%EC,dimethoate 30%EC,Imidacloprid 17.8%SL, Lambda-cyhalothrin 5%EC,Malathion 50%EC,Monocrotophos 36%SL,Oxydemeton methyl 25%EC, Thiamethoxam 25%WG.
	Fruit fly,	NIL
	Termite	NIL
Ground nut	Jassid,	Imidacloprid 17.8%SL, Quinalphos 25%EC
	hairy caterpillar,	Carbaryl 50%WP,Dichlorvos 76%EC, Trichlorofon 5%GR,Dust & 50%EC
	Semilooper	NIL
(B) Endosulfan 4% DP		
Cotton	Aphid	Acetamiprid 20%SP, Azadirachtin 0.03%WSP, Buprofezin 25%SC, Carbaryl 5%DP,10%DP,Carbosulfan 25%DS, Chlorpyriphos 20%EC, Clothiadin 50%WDG, Deltamethrin 1.8%EC & 2.8%EC,Difenthiuron 50%WP,Dimethoate 30%EC, Fenvalerate 20%EC,Fipronil 5%SC,Fluvalinate 25%EC,Imidacloprid 70%WG,48%FS,70%WS,30.5%SC &17.8%SL, Malathion 50% EC, Methyl Parathion 50% EC &2%DP,, Monocrotophos 36% SL, Oxydemeton methyl 25% EC, Phorate 10%CG, Profenophos 50%EC,Quinalphos 1.5%DP,Thiacloprid 21.7%SC, Thiamethoxam 25 %WG &30%FS, Acephate 25%+Fenvalerate 3%EC,
	Jassids	Acephate 75%SP, Azadirachtin 0.03%WSP,& 5% Neem ext.conc.,Acetamiprid 20%SP, Buprofezin 25%SC, Carbaryl 5%DP,&85%WP,Carbosulfan 25%DS,Cypermethrin 25%EC, Deltamethrin 1.8%EC &2.8%EC, Diafenthiuron 50%WP, Dimethoate 30%EC,Fenvalerate 20%EC,Fipronil 5%SC,Fluvalinate 25%EC,Imidacloprid 70%WG,48%FS,70%WS,30.5%SC &17.8%SL,Lambdacyhalothrin 2.5%EC &5%EC,Malathion 50%EC,Methyl parathion 2%DP &50%EC, Monocrotophos 36% SL, Phorate 10%CG,Phosalone 35%EC &4%DP,Profenophos 50%EC, Quinalphos 25% EC,Thiacloprid 21.7%SC, Thiamethoxam 25% WG. Acephate 25%+Fenvalerate 3%EC, Acephate

	50%+Imidacloprid 1.8%SP, Cypermethrin 3%+Quinalphos 20%EC, Indoxacarb14.5%+Acetamiprid 7.7%SC,
Thrips	Buprofezin 25%SC,Carbaryl 10%DP &85%WP,Carbosulfan 25%DS,Cypermethrin 25%EC,Deltamethrin 1.8%EC&2.8%EC,Diafenthiuron 50%WP,Dimethoate 30%EC,Fenvalerate 20%EC,Fipronil 5%SC,Imidacloprid 70%WG,40%FS,30.5%SC &17.8%SL,Lambdacyhalothrin 2.5%EC &5%EC, Malathion 50%EC,Methylparathion 2%DP &50%EC,Monocrotophos 36%SL,Phorate 10%CG,Phosalone 4%DP,Profenophos 50%EC,Quinalphos 1.5%DP,Thiacloprid 21.7%SC,Thiamethoxam 70%WS &25%WG, Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP,
Whiteflies	Acetamiprid 20 SP, Azadirachtin 0.15% EC,& 0.03WP,Bifenthrin 10%EC,Buprofezin 25%SC, Chlorpyriphos 20%EC, Clothiandin 50%WDG,Deltamethrin 1.8%EC &2.8%EC,Diafenthiuron 50%WP, Ethion 50%EC,Fenpropathrin 30%EC,Fipronil 5%SC,Imidacloprid 48%FS,70%WS &17.8%SL,Malathion 50%EC, Monocrotophos 36%SL,Phorate 10%CG, Profenophos 50%EC,Thiacloprid 21.7%SC,Thiamethoxam 30%FS, 70%CS &25%WG, *Verticillium leconii* 1.15%WP. Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP, Deltamethrin1%+Triazophos 35%EC, Indoxacarb14.5%+Acetam prid 7.7%SC,
Bollworms,	Acephate 75%SP, Alphacypermethrin 10%EC&SC,Acetamiprid 20 SP, Alphacypermethrin 10 EC, Azadirachtin 0.15%EC,0.3%EC , 0.03% EC &5%Ext. conc,B.t.k, B.t.k. 5%WP,Beta cyfluthrin 2.45%SC, Beauveria bassiana 1.15%WP,Bifenthrin 10%EC, Carbaryl 5%DP,10%DP, &85%WP,Chlorantraniliprole 18.5%SC, Chlorpyriphos 20%EC &50%EC,Cypermethrin 10%EC &25%EC,Deltamethrin 1.8%EC, 2.8%EC,11%EC & 25%tab, Diaflubenzuron 25%WP,Emamectin benzoate 5%SG,Ethion 50%EC,Fenpropathrin 10%EC &30%EC, Fenvalerate 20% EC,,0.4%DP&2%conc.,Fipronil 5%SC,Flubendiamide 39.35%SC,Fluvalinate 25%EC, Indoxacarb 14.5% SC, & 15.8%EC, Lambdacyhalothrin 4.9%CS & 5% EC, Lufenuron 5.4%EC,Methomyl 40%SP,Monocrotophos 36%SL,Novaluron 10%EC,NPV of H.a.0.43%AS,Permethrin 25%EC,Phenthoate 50%EC,Phosalone 35%EC, Profenofos 50%EC,Pyridalyl 10%EC,Quinalphos 20%AF,Spinosad 45%SC,Thiodicarb 75%WP, Triazophos 40%EC. Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP,Cypermethrin 3%+Quinalphos 20%EC,Chlorpyriphos 16%+Alphacypermethrin 1%EC, Deltamethrin1%+Triazophos 35%EC,Ethion 40%+Cypermethrin 5%EC, , Indoxacarb14.5%+Acetamiprid 7.7%SC,Profenophos 40%+Cypermethrin 4%EC

	Leaf roller	NIL
Paddy	White Jassids/ leaf hopper	Carbosulfan 25%EC,Deltamethrin 11%EC, Etophenprox 10%EC, Fenobucarb(BPMC) 50%EC,Fipronil 0.3%GR & 5%SC,Imidacloprid 30.5%SC & 17.8%SL, Oxydemeton methyl 25%EC,Phorate 10%CG,Phosphamidon 40%SL,Thiamethoxam 25%WG, Triazophos 20%EC & 40%EC.
	Stem borer , Gall midge,	As in Endosulfan 35% EC
	Aphid	Nil
Maize	Pink borer/Stem borer	Phorate 10%CG.
Wheat	Aphid,	Quinalphos 25 EC, Thiamethoxam 25%WG meton 25 EC,
	Termites	Thiamethoxam 30%FS.
	Pink borer	As in Endosulfan 35% EC
Gram	Aphid	NIL
	Caterpillar/ Pod borer/ Pea - semilooper	Azadirachtin 0.03%WSP,Chlorpyriphos 1.5%DP, Deltamethrin 2.8%EC, Emamectin benzoate 5%SG, Ethion 50%EC, Monocrotophos 36%SL, Novaluron 10%EC,*NPV of H.a.* 2%AS,Quinalphos 25%EC,&1.5%DP.
Groundnut	Aphid	Chlorpyriphos 20 EC
Mustard	Aphid	Chlorpyriphos 20% EC Dimethoate 30% EC, Malathion 50% EC, Methyl Parathion 2%DP , Monocrotophos 36 SL, Oxydemeton methyl 25%EC,Phorate 10%CG, Phosphamidon 40%SL.
	Gall midge	Nill
Bhindi	Aphid, Jassid	Azadirachtin 5% Neem ext.conc.,Carbofuran3%CG,Dimethoate 30%EC,Imidacloprid 70%WG,48%FS,70%WS &17.8%SL,Lambda-cyhalothrin 5%EC,Malathion 50%EC,Permethrin 25%EC,Thiamethoxam 70%WS
Onion	Aphid, jassid	NIL
Chillies	Aphid, jassid	Imidacloprid 70%WS, Oxydemetonmethyl 25%EC, Phorate 10%CG, Phosalone 35%EC, Quinalphos 25%EC&Gel.

Potatoes	Aphid, jassid	Carbofuran 3%CG
Jute	Bihar hairy caterpillar	Azadirachtin 0.03% WSP
	Yellow mites	NIL
(C) Endosulfan 2% DP		
Arhar	Pod borer	Azadirachtin 0.03%WSP,B.t.k. 5%WP,Benfuracarb 40%EC,Chlorantraniliprole 18.5%SC,Chlorpyriphos 1.5%DP,Emamectin benzoate 5%SG, Ethion 50%EC, Flubendiamide 39.35%SC,Indoxacarb 14.5%SC, Lambdacyhalothrin 5%EC,Lufenuron 5.4%EC,Methomyl 40%SP,NPV of H.a.2%AS,Quinalphos 20%AF, 1.5%DP & 25%EC,Spinosad 45%SC.
Gram	Pod borer	Azadirachtin 0.03%WSP,Carbaryl 10%DP,Chlorpyriphos 1.5%DP, Deltamethrin 2.8%EC, Emamectin benzoate 5%SG, Ethion 50%EC, Monocrotophos 36%SL, Novaluron 10%EC,*NPV of H.a.* 2%AS,Quinalphos 25%EC,&1.5%DP.
Bhindi	Fruit and shoot borer	Azadirachtin 5% Neem ext, Carbaryl 10%DP,Cypermethrin 0.25 DP, 10%EC & 25%EC, Deltamethrin 2.8%EC, Emamectin benzoate 5%SG,Fenpropathrin 30%EC, Fenvalerate 20%EC,Malathion 50%EC, Permethrin 25%EC ,Phosalone 35%EC,Pyriqalyl 10%EC,Quinalphos 20%AF &25%EC.
Brinjal	Fruit and shoot borer	Azadirachtin 1%EC & 0.03%WSP, Chlorantraniliprole 18.5%SC, Chlorpyriphos 25%EC,Cypermethrin 0.25%DP & 25%EC,Dimethoate 30%EC Emamectin benzoate 5%SG,Fenpropathrin 30%EC,Fenvalerate 20%EC,Lambdacyhalothrin 5%EC,Phosalone 35%EC,Quinalphos 20%AF &25%EC,Thiodicarb 75%WP, Thiometon 25%EC,Triazophos 40%EC, Trichlorofon 5%GR,Dust &50%EC, Deltamethrin1%+Triazophos 35%EC,
(D) Endosulfan 35%+Cypermethrin 5%EC		
Cotton	Boll worm	Acephate 75%SP, Alphacypermethrin 10%EC&SC,Acetamiprid 20 SP, Alphacypermethrin 10 EC, Azadirachtin 0.15%EC,0.3%EC , 0.03% EC &5%Ext. conc,B.t.k, B.t.k. 5%WP,Beta cyfluthrin 2.45%SC, Beauveria bassiana 1.15%WP,Bifenthrin 10%EC, Carbaryl 5%DP,10%DP, &85%WP,Chlorantraniliprole 18.5%SC, Chlorpyriphos 20%EC &50%EC,Cypermethrin 10%EC &25%EC,Deltamethrin 1.8%EC, 2.8%EC,11%EC & 25%tab, Diaflubenzuron 25%WP,Emamectin benzoate

		5%SG,Ethion 50%EC,Fenpropathrin 10%EC &30%EC, Fenvalerate 20% EC,,0.4%DP&2%conc.,Fipronil 5%SC,Flubendiamide 39.35%SC,Fluvalinate 25%EC, Indoxacarb 14.5% SC, & 15.8%EC, Lambdacyhalothrin 4.9%CS & 5% EC, Lufenuron 5.4%EC,Methomyl 40%SP,Monocrotophos 36%SL,Novaluron 10%EC,NPV of H.a.0.43%AS,Permethrin 25%EC,Phenthoate 50%EC,Phosalone 35%EC, Profenofos 50%EC,Pyridalyl 10%EC,Quinalphos 20%AF,Spinosad 45%SC,Thiodicarb 75%WP, Triazophos 40%EC. Acephate 25%+Fenvalerate 3%EC, Acephate 50%+Imidacloprid 1.8%SP,Cypermethrin 3%+Quinalphos 20%EC,Chlorpyriphos 16%+Alphacypermethrin 1%EC, Deltamethrin1%+Triazophos 35%EC,Ethion 40%+Cypermethrin 5%EC, , Indoxacarb14.5%+Acetamiprid 7.7%SC,Profenophos 40%+Cypermethrin 4%EC

- The details are available on www.cibrc.nic.in-- Major uses of pesticides.

Annexure-IX

Statement showing State-wise consumption of Endosulfan in the country during the year 2009-10
Qty. in M.T. (Tech. Grade)

S.No.	State	Quantity
1	Andhra Pradesh	15
2	Assam	7
3	Arunachal Pradesh	1
4	Bihar	500
5	Chhattisgarh	21
6	Goa	149
7	Gujarat	180
8	Haryana	650
9	Himachal Pradesh	7
10	J&K	-
11	Jharkhand	4
12	Karnataka	350
13	Kerala	0
14	Madhya Pradesh	75
15	Maharashtra	450
16	Manipur	0
17	Meghalaya	1
18	Mizoram	1
19	Nagaland	-
20	Orissa	73
21	Punjab	600
22	Rajasthan	171
23	Sikkim	-
24	Tamil Nadu	170
25	Tripura	4
26	Uttar Pradesh	385
27	Uttarakhand	8
28	West Bengal	-
29	Andaman & Nicobar Islands	-
30	Chandigarh	-
31	Delhi	5
32	Dadra & Nagar Haveli	-
33	Daman & Diu	-
34	Lakshadweep	-
35	Pondicherry	3.21
	Total	**3828.21**

ANNEXURE- X

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Surjit Khalsi

D 225, DEFENCE COLONY, NEW DELHI

23rd June, 2011

PS

Please hand over to Mr. Shukla

Shri S H Kapadia

Hon. Chief Justice of India

Supreme Court of India

New Delhi

Dear Hon'ble Shri Kapadia,

I am an educated farmer from Punjab. I went to my lawyer as I wanted to write to you my views but my lawyer told me that it is sub-judice.

Whether it is sub-judice or misinformation, I do not know but I am writing this letter to you. From the age of 15 I have been spraying pesticides – Endosulfan on tractor-mounted-sprayer. My uncle alongwith my brothers are farming 45 acres of land in Punjab.

Even after so many years of using Endosulfan we have not found any harmful effects so far. I specially went to Punjab Agriculture University and discussed this problem in detail.

2429/PPA/2011

6/7/2011

I have been very clearly told that they have not found any harmful effects so far and that it is one of the safest and effective pesticides. But as the matter is in court, they refused to give me a letter to this effect.

We know that you want truth and justice, so I very kindly request you to write to the Punjab Agriculture University and get the real facts. According to them, some environmentalists who get a lot of money from abroad are fabricating these lies about Endosulfan.

We do respect you and your judgment. However, your decision to ban Endosulfan has created serious problem. Our farmers cannot afford to ruin their crops. Now the local Agriculture Inspectors and Shopkeepers are selling under the table as farmers do not care about politics but want to protect their crops.

People like us are suffering. The yield in our farms has gone down because of non-availability of right product. We have to spend more than double to use other imported pesticides.

I am sure by writing to you, I have not committed any contempt of court. I am writing this on behalf of all farmers and I am ready to go to jail. But we want the truth.

I insist that you find out the facts and if it is proved that this so called NGO had told lies to you and if they have fabricated false data and imaginary pictures of people suffering from Endosulfan, kindly then punish them.

We are confident that you will see that truth come out and the guilty are punished.

With regards,

Surjit Khalsi.

Surjit Khalsi

cc : Dr. Gurbachan.

ANNEXURE-XI 60

Ministry of Agriculture
Government of India
(Department of Agriculture & Cooperation
Krishi Bhawan, New Delhi – 110 001

Subject: Review of alternate pesticide for Endosulfan – additional recommendations regarding.

The committee met under the chairmanship of Dr. Gurbachan Singh Agriculture Commissioner on 28th July, 2011 at 16.30 hrs. in his chamber in Krishi Bhawan, New Delhi. The list of other participants is enclosed.

The chairman welcomed the participants and informed that the report of this group has been submitted. The same was circulated among the members and discussions were initiated on the subject. After detailed discussion, the following recommendations were finalized.

1. The export of Endosulfan to various countries of the world such as Argentina, Brazil, China, Pakistan, Sudan, Mozambique, Mexico, Uganda, Ecuador etc. may be allowed to utilize the stock of technical and formulated product available with the manufacturers of Endosulfan in the country. As per the information provided by the Industry 194914 Kg. of technical and 818518.56 Litre of formulation is available at present in their stock which has shelf-life of two years.
2. In case, the export, use of Endosulfan is not permitted in the country, it may be more difficult to dispose off the existing stocks which may pose environmental hazards, if not stocked/disposed properly. At the same time, the disposal may be more costly as no proper incineration facilities are available in the country.

No. PS/PPP/SB/2011

for kind information.

PS to A.C.

Review meeting on 28.7.2011 to discuss alternative pesticide to Endosulfan under the Chairmanship of Dr. Gurbachan Singh, Agriculture Commissioner

S.No.	Name & Designation
1.	Dr. Gurbachan Singh, Agri. Commissioner, DAC
2.	Sh. A.K. Thakur, Addl. Secy., DAC
3.	Sh. Pankaj Kumar, Jt. Secy. (PP)
4.	Dr. V.K. Yadava, PPA, Dte. of PPQ&S
5.	Sh. Rajan for ADG (PP), ICAR
6.	Dr.K.K. Sharma, Coordinator, IARI, Pesticide Residues
7.	Dr. B.S. Phogat, APPA(CIB&RC)
8.	Dr. R.M. Shukla, JD(Ent.), Dte. of PPQ&S
9.	Sh. Sunder Ramanathan, Dy. Dir., MoEF
10.	Sh. Rajeev Mishra, APC, MoEF