



Workshop on International (OECD) Seed Certification

30th Nov & 1st Dec, 2016
Hyderabad, Telangana

PROCEEDINGS



Organised by

Telangana State Seed & Organic Certification Authority

Department of Agriculture & Co-operation
Government of Telangana

in collaboration with

Department of Agriculture, Co-operation & Farmers Welfare

Ministry of Agriculture & Farmers Welfare
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Agriculture Production Commissioner & Secretary to Government

Department of Agriculture & Cooperation

Government of Telangana, Hyderabad.

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Proceedings of workshop on International OECD Seed Certification

The Workshop on International OECD Seed Certification was held in Hyderabad from 30th November to 1st December, 2016. This was a follow up interaction for the first National Workshop on OECD Seed Certification, held on 4th July, 2016 at Hyderabad. The main objectives of the workshop was to strengthen the seed exports and to discuss the issues related to OECD Seed Certification pertaining to production & multiplication of certified seed, procedures for International trade, procedure for inclusion of new varieties in OECD list and other related issues.

The workshop was chaired by Joint Secretary (Seeds), Government of India in which the Designated Authorities for OECD seed schemes, Directors of Seed Certification Agencies, Managing Directors of Seed Corporations & Allied Departments, representatives from SAU/ICAR institutes, Multi National Seed Companies, National Seed Association of India and Seedsmen Association, Hyderabad had participated.

In this workshop, the OECD experts Mr. Eddie Goldschagg from South Africa and Mr. Gerry Hall from United Kingdom had emphasized on various issues related to International OECD Seed Certification and requirements for import and export of seeds to different countries. Apart from the foreign experts, the Indian seed experts from different fields of seed sector had emphasized on various issues related to International OECD Seed Certification and Domestic Seed Certification.

The issues discussed, ideas generated and recommendations emerged from different technical sessions, interaction and panel discussion during the workshop are presented here under with an anticipation to further unite the efforts to accelerate the implementation of International OECD Seed Schemes in India and to promote seed exports.

INAUGURAL SESSION

30th November, 2016

The workshop on International OECD Seed Certification was organized by Telangana State Seed & Organic Certification Authority, Hyderabad, Department of Agriculture & Co-operation, Government of Telangana in collaboration with Department of Agriculture, Cooperation & Farmers Welfare, New Delhi. The workshop was inaugurated by Shri Pocharam Srinivas Reddy, the Hon'ble Minister for Agriculture and Allied Sectors, Telangana State in the presence of Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India, Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana, Shri M. Jagan Mohan, IAS, Commissioner & Director of Agriculture, Govt. of Telangana, V. K. Gaur, CMD, NSC Ltd., New Delhi, Dr. K. Keshavulu, Director, TSSOCA, Hyderabad, Dr. V. Praveen Rao, Vice-Chancellor, PJTSAU, Shri M. Prabhakar Rao, President, NSAI, Shri G. V. Bhaskar Rao, Governing Council, NSAI, Mr. Eddie Goldschagg, OECD Seed Expert, South Africa and Mr. Gerry Hall, OECD Seed Expert, UK.



Ceremonial lighting of the lamp by Shri Pocharam Srinivas Reddy, Honorable Minister for Agriculture and Cooperation, Telangana State, India.

Dr. K. Keshavulu, Director, TSSOCA, Hyderabad and the convener of the workshop welcomed the chief guest, guest of honour and all the dignitaries and participants from the different fields of seed industry. In his welcome address he mentioned the objectives of the workshop and stated that this is a follow up interaction of 1st OECD workshop organized on July 4, 2016 to further enhance our knowledge for capacity building in the OECD Seed Certification for International Seed Trade. He projected the Indian Seed Industry and the favourable agro-climatic conditions facilitating quality seed production of different crops and the countries potential and opportunities for seed exports. Indian seed industry is vibrant, competitive and it is growing with an annual growth rate of 12 – 15 per cent ever year. Indian seed industry share in global seed market is 76 million US dollars, which is very less compare to the other countries and could be increased by the combined efforts of public and private sectors.



In his welcome address, he also mentioned the progress of implementation of OECD seed certification in the state.

Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), to Govt. of Telangana State, in his introductory remarks welcomed all the delegates and thanked Joint Secretary (Seeds) for giving one more opportunity to host the workshop for the second time. He projected the goals of newly formed Telangana State to become Global seed Hub. He emphasized that this is the right time to sensitise the farmers on advantage of OECD Seed Schemes in improving the Indian seed business in the international seed trade, improvement of the farmers expertise in seed production, strengthening of public and private seed industry and upgrading of existing STLs to ISTA accredited laboratory standards.



Dr. V. Praveen Rao, Vice-Chancellor, PJTSAU, Hyderabad emphasized on demarcation of crop specific seed production zones in the state to achieve self-sufficiency in production, enlisting of varieties under OECD, digitalization of information of OECD procedures and capacity building cum exposure visit of the farmers to the OECD Countries.

Shri V. K. Gaur, Chairman & Managing Director, NSC Ltd., New Delhi opined that OECD workshops and the deliberations should help to fine tune our protocols, upgrade our product quality, human capacity building, and should help to find out potential customers outside India.



Shri M. Prabhakar Rao, President, NSAI opined to have up-gradation of Seed Testing Laboratories as per ISTA standards and favourable Government policies to support the seed industry. Addressing the issues of spurious seeds, he opined that discussions involving all the stakeholders are necessary to address the problems arising out of spurious seeds and for effective implementation of existing Seeds Act for seed quality regulation issues. Mechanism to allow varieties developed in other country and to be certified in India under OECD Certification is also necessary. He mentioned that the existing OECD system is certifying only the notified varieties which may not serve the purpose of all the



customers and that there is a need to address the issue of seed trade for non-notified varieties. He emphasized on preparing a new list of varieties.

Shri G.V. Bhaskar Rao, Governing Council, NSAI in his remarks mentioned the need of an OECD Cell to facilitate the information about OECD Countries and their climatic conditions to test the suitability of the varieties in other countries for exports. He also pointed that, facilities available in public sector need to be strengthened to support certification of varieties developed by private seed industry. State Government should make pro-active policies to transform Telangana State as Global Seed Hub



Mr. Eddie Goldschagg, OECD Seed Expert, South Africa and **Mr. Gerry Hall**, OECD seed expert, United Kingdom in their message mentioned that it is essential to know various schemes and methods of operation under OECD seed system for its effective implementation. They opined that this workshop may help in strengthening the OECD seed certification in India.



Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India, New Delhi in his message mentioned that, the Government of India is extending financial support to state governments for strengthening of existing seed testing laboratories to take up OECD Seed Certification. This scheme will provide opportunity to tap the seed export potential available in India. There is huge demand for Indian seed in African and Asian Countries, for example, demand for Paddy hybrid seed in Nepal and Bangladesh. OECD will provide a platform to interact with neighbour countries to notify our varieties abroad, to cut short the procedures and also to tap good varieties from other countries. In the light of upcoming New Seed Bill, the regulatory burden will increase on the seed industry and release of new varieties will be slowed down. To cope up with this situation, online registration of varieties should be initiated.

He also mentioned that, the Rajasthan State Seed and Organic Product Certification Agency should act as



lead Designated Authority for North India and TSSOCA for South India. ISTA Cell will be established in TSSOCA with financial outlay of Rs.12.30 lakhs. Task force committee is constituted under Chairmanship of Joint Secretary (Seeds) & National Designated Authority, Government of India is in operation to monitor the progress of OECD seed scheme in India. The manual on OECD seed certification should be updated by TSSOCA.

Shri Pocharam Srinivas Reddy, Hon'ble Minister for Agril. & Cooperation, Government of Telangana in his message emphasized that, Government of India should bring an Act that every seed entering into market should be certified as mandatory. He requested Shri Rajesh Kumar Singh, National Designated Authority, Government of India to establish one more Referral Seed Testing Laboratory at Hyderabad to cater the needs of seed sector in South India and also to financially support all Seed certification Agencies to improve their functioning. He suggested adopting online registration and certification process by all State Seed Certification Agencies as a measure to avoid entry of spurious seed into market and for seed village adoptions by seed companies.



Participants at workshop on International (OECD) Seed Certification

Technical Session - I

Day 1: November 30, 2016

Chairman : Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India
Co-Chairman : Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana
Shri V. K. Gaur, Chairman & Managing Director, NSC Ltd., New Delhi
Dr. V. Praveen Rao, Vice-Chancellor, PJTSAU, Hyderabad

Mr. Eddie Goldschagg, OECD Seed Expert, South Africa presented an “overview of OECD and the OECD seed schemes”. The salient points covered by him includes

- Varietal identity and varietal purity is the bench mark for International Seed Trade
- By 2016, there are eight seed schemes being operated in OECD Seed Certification and India is implementing six seed schemes
- OECD is allowing seed multiplication abroad
- OECD is approving the concept of world seed partnership
- Given a short overview of OECD benefits to the OECD members and emphasized to have collaboration between public and private organizations
- On line data base regarding OECD can be accessed on website <http://www.niab.com/oecdv2>
- Presented regulatory framework for OECD implementation, its modalities, procedure for amendment of OECD Seed Schemes, list of varieties eligible and labels for different categories of seeds.
- Presented the main outcome of the Annual meeting, 2016 with regards to change of rules, guidelines, exchange of information and multiplication abroad, their decision to conduct a joint workshop and to develop joint document of principal features of the systems of OECD, OPOV, AOSA and ISTA.



Dr. K. Keshavulu, Director, TSSOCA, Hyderabad has presented the “Status of implementation of OECD Seed Schemes in India” and updated the following information

- State government has extended support to increase seed exports
- Progress was made in OECD seed certification from 20 acres in Kharif 2016 to 1269 acres in Rabi 2016, in the State of Telangana
- Informed the house that presently six OECD schemes are in operation in India with 109 varieties of 24 crop species covered under various OECD schemes and that NDA will implement the OECD
- He accentuated to have minimum two years of in-house testing of any variety for inclusion in the OECD list of varieties
- Informed that a manual on OECD Certification is published and is made available online / accessible for everyone

- The pre and post control tests facilities should be improved in some of the State Seed Certification Agencies
- Seed health testing should be made mandatory in the light of new Seed Bill
- Need to establish well equipped seed health testing laboratories for issuing phyto-sanitary certificate



Shri R.K. Trivedi, Retd. Deputy Commissioner (QC), Govt. of India in his presentation “Genesis of OECD Seed Scheme in India” suggested that a lead role has to be given to the State Seed Certification Agencies for setting up of a task force to monitor the progress of implementation of OECD Seed Schemes. He also mentioned that varietal identity and purity of seed through appropriate requirements and controls throughout the cropping, seed processing and labeling operations. In addition also focused importance of seed crop inspections, control plot tests and seed sampling & seed analysis.

Dr. Vilas A. Tonapi, Director, IIMR, Hyderabad in his presentation on “Scope to enhance international seed trade under OECD Seed Scheme” mentioned that there is a vast scope to enhance International Seed Trade under OECD Seed Schemes and 20% increase is possible in the next three years. He stated that this workshop should pave way for International Seed Trade and suggested that

- A cell/platform should be made available to the seed industry about the varieties and agro climatic conditions across the OECD Countries
- Non-tariff and tariff rules should be discussed on
- Support, incentives and arrangement of cold storage facilities should be made available to the seed industry for seed exports
- Seed licensing /Application for consideration of seed export should be processed without any delay
- List of varieties for export should be rationalised
- Constitution of seed review and expert group is essential
- Need separate categorization of seed for export purpose
- Trained manpower is essential for implementation of the scheme
- Upgrading the existing laboratories with ISTA accreditation is the need of the hour with the specialized focus group working
- Need collective and collaborative effort to establish 3-4 referral labs at regional level with collaboration of private industry.



Technical Session - II

Day 1: November 30, 2016

Chairman : Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India
Co-Chairman : Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana
Shri M. Jagan Mohan, IAS, Commissioner & Director of Agriculture
Dr. Dinesh K. Agarwal, Director, IISS, Mau, U.P.



Mr. Gerry Hall, OECD seed expert, United Kingdom has given a talk on "OECD seed schemes rules and regulations (Part-1)". The speaker emphasized on the following

- Basic principles of OECD schemes viz., seed production environment, isolation distances and field inspections, pre and post harvest operations affecting seed quality
 - Described method of operation and procedure for a new country to join one or more OECD schemes
 - He also mentioned the list of participants in or several OECD schemes
- Explained the role of various international seed organisations like ISF, IPPC, WTO-SPS standard settings, UPOV and ISTA
 - He clarified the difference between OECD and ISTA certificates

Mr. Eddie Goldschagg, OECD Seed Expert, South Africa has given a talk on "OECD Seed Schemes Rules and Regulations (Part II). He remarked that, India should actively participate in all OECD meetings and the strenuous efforts should be made to expand the scope of implementation of OECD certification in India. He also suggested that, as a participating country, India can frame its own rules to meet the needs of the growing seed industry.

Dr. S. Rajendra Prasad, Special Officer (Seeds), University of Agriculture Sciences, GKVK, Bengaluru, has given a lecture on "Indian Minimum Seed Certification Standards vis-à-vis OECD system". He had given an overall view of Indian seed certification system and OECD system including generation control, seed & field standards and seed sampling and testing procedures. He also explained in detail about the pre & post control tests. Finally, he completed presentation with the following conclusions and future perspectives:



- OECD certification scheme is almost similar to Indian Seed certification (ISC) system hence, not much difficulty in implementing the programme
- OECD certification scheme stressed to have ISTA endorsed seed quality parameters which are internationally accepted for seed trade
- India being participating in OECD seed schemes it is essential to harmonize Indian seed

standards and seed testing protocols in consonance with global necessities

- Establishment of ISTA accredited laboratories seems to be apt to append the vibrancy of Indian seed market by generating foreign exchange through seed trade
- Seed multiplication of Indian Varieties in member countries help in enhancing the International trading activities with EU, ISF, ISTA, and AOSA
- ICAR in India may be assisted to evolve a basic seed maintenance plan in relation to DUS characters to have pure seed in order to meet the OECD requirements.

Technical Session - III

Day 1: November 30, 2016

Chairman : Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India
Co-Chairman : Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana
Shri V. K. Gaur, Chairman & Managing Director, NSC Ltd., New Delhi
Dr. Vilas A. Tonapi, Director, IIMR, Hyderabad
Shri M. Prabhakar Rao, President, NSAI

Dr. K. Keshavulu, Director, TSSOCA, Hyderabad presented an “Overview of seed certification in India” and covered certain salient points

- Organized zonal seed review meetings should be conducted regularly to resolve the issues raised by seed growers
- Interstate movement of unprocessed seed with Red Label (or properly labelled) should be made compulsory in all the states
- Always it is better to supply quality seed to prevent transmission of insect pest and pathogen inoculums
- Seed processing facilities in private sector should be authorized by SCA's
- Improvement of seed processing facilities for all post harvest operations is essential
- Processing plant code should be mentioned on the seed lots
- Need to improve seed health testing facilities at all SCA's for issue of phyto-sanitary certificate

Presentations on issues of Seed Certification

The Directors of different State Seed Certification Agencies and Managing Directors of State Seed Corporations have presented their views and problems on “Issues on Seed Certification” as follows.

Shri Madhusudhan Sharma, Director, RSSOPCA, Rajasthan in his presentation on “Issues on Seed Certification” presented following points

- Establishment of greenhouse facility should be created for GOT
- GOT of foundation seed should be carried out by all states
- A letter to be drafted to ICAR to fix field and seed standards for breeder seed to overcome poor



quality problem in Breeder seed

- Directors of Seed Certification Agency should be given statutory powers
 - Establish printing press for tags
 - After final inspection at maturity, the SCA's should have control on post harvest procedures for strict quality control, which should be addressed
 - Physical verification of raw seed at processing plant should be made compulsory
- There should be uniformity in procedures followed by all SCA's
 - Should pass an ordinance to extend the purview of SCA
 - General seed standards for foundation and certified seed needs to be addressed
 - The discrepancies in Indian Minimum Seed Certification Standards should be corrected
 - Azure Blue colour of certified seed tag should be changed
 - For validation of Certified Seed of pulses and oilseeds, the period should be counted from the date of harvest instead of date of testing
 - In Soybean, field standards for off types is unrealistic
 - Regulate label seed production – seed production of label seed is not covered under any existing legal provisions
 - GPS and mobile APPS should for used for effective field inspections
 - The production subsidy should be extended to farmers through bank accounts

Shri Sura Bala Krishna, IDEs, VC & MD, APSSDC Ltd. presented his views as follows

- Purity problem in Breeder Seed still exists which need to be addressed
- Testing facilities for genetic purity has to improve
- Seed certification agencies should be strengthened in terms of finance, manpower, infrastructure development and computerization
- Need uniform rules and procedures for seed inspection all over the country
- Need capacity building to Seed Certification Officers of APSSCA
- Geo-tagging of seed production plots helps to have control over production areas and seed lots produced



Shri Pandiraj, JD (Seed Inspection), TNSC, Tamilnadu opined that combining Seed Certification and Seed Licensing together will help in strengthening Seed Certification Agencies.

Suggestions for strengthening of Seed Certification Agencies

A group of invited scientific personalities from seed industry have suggested their views on “Strengthening of Seed Certification Agencies” as follows.

Dr. Y. Yogeswara Rao, Vikkys Agri Sciences Pvt. Ltd. made following remarks and suggestions.

- IMSCS are being reviewed for every 20 years. It is necessary to constitute Seed Review Team at all India level including farmers and seed officers and necessary modifications are to be made in seed standards
- Foreign visits are necessary for adaptation of mechanization in seed production
- Visit to OECD countries to study implementation of OECD certification system
- Data base on seed exports and imports, crop and variety wise can be maintained and distributed to stakeholders
- Authentic data base on seed industry turnover should be prepared and communicated
- State Seed Corporations may engage one breeder on deputation as a sponsored breeder to overcome shortage of Breeder Seed
- Selection of suitable seed villages for better production of quality seed
- Under inter cropping systems, reconsideration should be made to register both main and companion crops
- Show cause notices may not be issued if the Seed testing results are within tolerance limits of Seed Inspectors manual
- There should be uniformity in functioning of State Seed Certification Agencies in India
- Two monitoring inspections from flowering to pre-harvest stages for all Breeder Seed plots is important
- Breeder Seed Lot number construction should be similar to that FS and CS, full labelling is important
- Breeder Seed label should be machine numbered in five (05) digits with Series along with numerical of State Code
- Form-II & Breeder seed tags for CS lots should be printed in English only
- The SAUs & ICAR requested to communicate Variety/Hybrids of different crops to NSAI along with State Seed Certification Agencies as and when notified by the Govt of India
- Seed Production incentives on Groundnut & Pulses to be extended to all Certified Seed growers and all seed producers including State Seed Development Corporations/ State Agro Industries
- The standards with respect to ODVs in Paddy need to be revised to represent in percentage in place of numbers per kg as differences are arising between course and fine grain varieties



Shri Rajesh Kumar Singh, IAS, Joint Secretary (Seeds), Govt. of India, New Delhi suggested compulsory registration of seed growers and linking of Aadhar identification number to bank account for online payment to seed growers.

Dr. Vilas A. Tonapi, Director, IIMR, Hyderabad suggested to have participatory monitoring in seed certification like involving private seed industry in public seed production fields and vice-versa.

Dr. S. Rajendra Prasad, Special Officer (Seeds), University of Agriculture Sciences, GKVK, Bengaluru suggested that validation period for seed lots should be fixed based on the type of seed (cereal, pulse, oilseed) and should consider one of the vigour test while fixing validation period.

Dr. Raji Reddy, Director of Research, PJTSAU, Hyderabad suggested to go for identification of crop specific production areas and list of suitable varieties for production and seed exports under OECD scheme. He also suggested use of GPS and mobile apps for better monitoring of production areas and strengthening the procedures and facilities for seed testing.

Shri A.S.N. Reddy, President, SMA, Hyderabad suggested to arrange facility for production subsidy to encourage farmers to take up seed production under OECD seed schemes.

Shri K. Niranjan Kumar, SMA, Hyderabad suggested that a dialogue between the Government and the Seed Industry is needed to resolve the issues with regard to rules pertaining to packaging, labelling, weights and measurements, registration of processing plants in order to improve seed exports.

Technical Session - IV

Day 2: December 1, 2016

Chairman : Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana
Co-Chairman : Shri V. K. Gaur, Chairman & Managing Director, NSC Ltd., New Delhi
Dr. V. Ravindra Babu, Director, IIRR, Hyderabad
Dr. N.V. Naidu, Director of Research, ANGRAU, A.P.

Mr. Eddie Goldschagg, OECD Seed Expert, South Africa, made a presentation on "Implementation of OECD Certification in South Africa". He gave a short overview of agriculture in South Africa and the OECD scheme implementation. The salient points covered by him include:

The salient points covered by him includes:

- OECD Certification in South Africa started in early 60's, where South Africa was approved to participate in two of the OECD Schemes
- Seed legislation in south Africa - Seeds Act, 1961 (Act 29 of 1961), Foundation Seed Act, 1961 (Act 29 of 1961) and Plant Improvement Act, 1976 (Act 53 of 1976) that frames the minimum standards
- Certification is voluntary
- Total 10,132,575 kgs of different crops seed were produced under OECD seed certification in South Africa
- The South African National Seed Organization (SANSOR) was the National Designated

Authority to have certification for seed trade

- SANSOR will authorize seed samplers who act as company analysts, production officers, warehouse personnel and involved in their training
- SANSOR also authorize field inspectors (company seed production officers)
- DAFF (Dept. of Agriculture, Forestry and Fisheries) is involved in registering company/private seed testing laboratories and auditing
- Authorization cards will be issued to seed inspectors if they fulfil the conditions laid by SANSOR
- Maintaining authorization will be monitored by SANSOR & DAFF
- DAFF is responsible for monitoring trade control and post control, auditing, issue of final OECD Certificate on recommendation by SANSOR
- Official Seed Testing Laboratory (ISTA Accredited) is under control of DAFF
- Plant variety evaluations for national listing and granting of plant breeders' rights done by DAFF
- UPOV Test Guidelines are used for plant variety evaluations
- Two approaches were followed to produce a variety description one is official testing system and other is breeder based system, in both cases Government officials collect data, process and compile variety descriptions at the end of the season and recommend approval or rejection
- Seed production fields for certification must be registered online at SANSOR within 28 days after planting and inspected by authorized personnel
- Seed lots are sampled by trained and authorized samplers done according to ISTA Rules and tested at a registered seed testing laboratory as ISTA Rules
- Seed lots must be presented in new containers with proper labeling for issuance of tag
- Post Controls are conducted by DAFF (Variety Control) as well as at seed companies under control of SANSOR
- SANSOR issues OECD Certificate for signature by DAFF
- Not finally certified seed also exported under gray OECD label
- Trade Control samples are taken by DAFF (Inspection Services)
- System audits done by Audit Division of DAFF
- Data base is maintained as hard copy / electronically



Dr. Malavika Dadlani, Former Joint Director (Research), IARI, New Delhi, presented on "Seed Quality Standards for International Seed Trade". With regard to quality analysis for OECD seed certification she called attention to the following points

- Emphasized on requirement of a strict quality assurance system (of any type including in-

- house testing) for quality seed supply after variety development to maintain genetic purity, genetic potential, planting value of the variety released
- Seed producers should follow necessary steps in seed production to retain the genetic advantage of a variety as well as to ensure high planting value of the seed through appropriate cultivation and post harvest measures
 - Strict supervision and monitoring of seed production plots should be done for international seed trade
 - Seed producing agencies should adhere to such policies and procedures that guarantee quality standards and such policies should be trade friendly and popularize Indian varieties in the International seed trade
 - As India is bestowed with varied climatic conditions it is essential to identify variety specific seed production areas
 - She also stated since the agro-climatic conditions in many countries are similar and plant breeding is an expensive activity, it is desirable that quality seed of a superior variety developed in one country and suitable to grow in another, be made available at the minimum cost and time
 - In order to promote international seed trade and strengthen the seed sector, adoption of uniform seed standards that harmonize with international and inter-governmental laws is the best option
 - National regulatory body should fix the standards so as to maintain quality till it reaches the end user – farmer
 - As GM crops are being notified, methods of testing for detection of GM traits or their hybridity / genetic purity using molecular markers need to be standardized. In this regard, ISTA guidelines / procedures can be adopted
 - Suggested for notification of local varieties also as they have export potential
 - National Seed Analyst Manual should be updated
 - NDA will identify ISTA accredited laboratories notified under The Seeds Act, 1966 to conduct seed analysis
 - The purpose of OECD and ISTA certificates are different but, both are issued by following the ISTA standards for seed quality

Mr. Gerry Hall, OECD Seed expert, United Kingdom given a talk on “Implementation of OECD Certification in UK/Scotland”. In his presentation he has discussed about the OECD seed certification requirements, national listing of varieties (DUS & VCU) and UK contribution to OECD seed schemes. In addition, he also mentioned

- In UK seed certification system each UK territory is slightly different and have its own training and monitoring programs and is responsible for issue of OECD labels, OECD varietal purity certificate and pre and post control plots tests; UK uses one centre to deal with OECD issues; and allocation of UK reference number to seed lots for seed lot identification for labelling etc.

- In UK seed Legislation separate regulations are present in different UK territories like The Seeds (National List of Varieties) Regulations 2001 (as amended); The Cereal Seed (Scotland) Regulations 2005; The Fodder Plant Seed (Scotland) Regulations 2005; The Oil and Fibre Plant Seed (Scotland) Regulations 2004; The Beet Seed (Scotland) (No. 2) Regulations 2010; The Vegetable Seeds Regulations 1993; The Seed (Fees) (Scotland) Regulations 2016; The Seed (Licensing and Enforcement etc.) (Scotland) Regulations 2016
- OECD Certification in the UK started in 1969 when the UK was approved to participate in the Beet Scheme
- It is difficult to import seed into the UK (EU). A 3rd Country equivalence is required by the country wishing to export to the EU. The variety also has to be on the NL of a EU State and should meet OECD seed standards
- The UK OECD Centre–works with UK Territories/seed companies/ overseas Designated authorities for hopefully efficient trade in seeds
- Marketing of seed of UK varieties abroad is done in countries with similar climate / environment
- Regarding variety maintenance, there are a number of UK NL varieties that are traded/multiplied in countries other than the UK. In this case they are the “maintainer country” and supply standard samples and variety descriptions of economic importance to the Breeders

Mr. Eddie Goldschagg, OECD Seed Expert, South Africa presented a topic on “Registration of Seed Production Fields & Field Inspection Methodology”. He covered in detail the following aspects

- The procedure of registration of seed fields online with NDA and the details of registration fee and additional fee to be paid, application assessment, verification of seed source etc.
- Emphasized on rules and conditions for operating activities of the seed certification process by authorized persons which includes planting requirements, previous cropping, isolation requirements, methods of field inspection of seed crops, number of inspections, stages of inspections, no. of field counts, sequential sampling for maintaining varietal purity and uniformity
- Discussed about guidelines for crop inspectors
- Field inspection reports reflecting the findings must be completed after each inspection by the inspector in his/her capacity as an authorised / licensed inspector
- Field Inspection Reports can be done in written format, as determined by the Authority in Printed Word/PDF form (post/by hand)/Electronic Excel form (e-mail) /On-line directly into database (internet)
- It is not necessary to submit reports after each inspection – but after the final inspection has been completed should be acceptable. The NDA will not issue any final certificate unless all required inspection reports have been received.

Mr. Gerry Hall, OECD Seed Expert, UK presented on "Authorisation of Inspectors, Samplers and Seed Testing Stations". He has given an overall view of OECD Rules and discussed about OECD guidelines for crop inspectors, seed samplers and Seed Testing Laboratories.

- Authorisation of Inspectors: National Designated Authority, under Official Supervision, authorise non-official inspectors to operate field inspections for seed certification. These inspections will be equivalent to the official inspections on the condition that the authorised inspectors shall have the necessary qualifications, either through being trained in the same way as official inspectors or alternatively their competence shall have been confirmed in official examinations
- However, field inspection of seed crops by authorised inspectors under official supervision is currently not possible for Pre-basic and Basic crops within the EU. Crops produced outside the EU of Pre-basic and Basic seed for export to the EU shall be officially inspected in the field to meet the EC Rules and Standards.
- Crops inspected by authorised inspectors, a proportion of these crops (at least five per cent) must be check inspected by official inspectors. The level of check inspections must be set by the National Designated Authority to adequately assess the performance of the authorised inspectors.
- National Designated Authorities shall determine the penalties applicable to infringements of the rules governing examination under official supervision
- Seed Sampling: The National Designated Authority may authorise persons who are not under its direct and exclusive authority to draw, under official supervision, samples under the Schemes
- Laboratories may also be authorised to carry out seed analysis as required under the Schemes
- Sampling, fastening and labelling of seed containers may be entrusted to authorised persons
- The authorisation may apply to seed certification of all genera and species admitted to the OECD List of Varieties, within the scope defined by the National Designated Authority: this includes activities, species, seed categories, persons, seed companies and laboratories
- Seed samplers shall have the necessary technical qualifications and shall carry out seed sampling in accordance with current international methods recognised by the National Designated Authority
- Seed sampling premises and equipment must be officially recognised by the National Designated Authority
- A proportion of the seed lots (at least five per cent) entered for the official certification shall be check-sampled by official seed samplers.
- Authorised laboratories: The laboratory shall be maintained in premises and with



equipment officially considered by the National Designated Authority

- The laboratory's performance of seed testing shall be subject to proper supervision by the National Designated Authority. Supervision shall include check-analysis and regular audits of expertise, implementation, processing of results and response to non-conformities
- A proportion of samples tested by authorized seed testing laboratories must be checked in an official seed laboratory

With this he concluded that authorized seed testing laboratories need to ensure that their staff members maintain their knowledge and skills by undertaking a laboratory management examination for every 3-5 years.

Mr. Gerry Hall, OECD Seed Expert, UK has also given a lecture on "Post control plots, standard samples". He focussed mainly on the purpose and advantages of post control plots & standard samples.

- Control plot tests are used to monitor the identity and purity of a variety (hybrid or non-hybrid) at various stages in the seed multiplication programme, thereby assuring the authority that the quality of seed produced in the Seed Schemes is of a satisfactory level
- These Post-control tests are nevertheless valuable, because they monitor how efficient the seed production process has been in maintaining varietal purity and identify ways in which the system might be improved
- Varietal identity and purity checks in pre and post-control can be done best by comparing plants grown from a sample of the seed lot with plants grown from seed of the 'Standard Sample'
- Post control tests are conducted with two official reference samples by the authorities responsible for registration and certification (viz., The Variety Listing Authority, and The Seed Certification Authority). In most cases, Post Controls will be conducted by the same Authority responsible for Variety Listing
- The NDA will determine the percentage of post-controls grow-outs to be planted of seed from fields registered for Certification generation/class. Generally, between 15 and 25% would be sufficient control. For Pre-Basic and Basic Seed generations, of post-controls grow-outs must be done on 100% of the fields registered
- Standard Sample' should be obtained from NDA
- Recording of the control plots should start when plants reach growth stages at which varietal characteristics can be observed. Depending on the species this can be during vegetative growth stages, at flowering or at full maturity
- Control plots can also be recorded for species purity and for the presence of seed-borne diseases
- The off-type plant count in the plot can be used to give a probability of the seed lot meeting published standards, provided the plot size is sufficiently large
- The sample sizes or plot areas for examination need to be sufficient to make reject numbers valid

Technical Session - V
Panel discussion: Enabling environment for seed exports
under OECD Seed Scheme
Day 2: December 1, 2016

Chairman : Shri C. Partha Sarathi, IAS, APC & Secretary (A&C), Govt. of Telangana
Co-Chairman : Shri V. K. Gaur, Chairman & Managing Director, NSC Ltd., New Delhi
Dr. V. Ravindra Babu, Director, IIRR, Hyderabad
Dr. N.V. Naidu, Director of Research, ANGRAU, A.P.

Dr. V. Ravindra Babu, Director, IIRR, Hyderabad has made the following suggestions for improving seed exports

- A roadmap has to prepare and the legal procedures should be strong
- Need strengthening of public and private partnership to improve seed exports
- Strengthening of infra structural facilities in seed testing laboratories
- Private companies with R & D facility should also be involved
- Training to technical staff to understand the OECD standards and procedures
- Seed analyst manual should be updated

Shri Madhusudhan Sharma, Director, RSSOPCA, Rajasthan presented the following points

- OECD seed certification is a market driven policy. Hence, marketing facilities need to be improved
- Certification system need to be strengthened in terms of manpower, infra structural facilities and financial support
- Certified seed production subsidy should be shared among the seed producer, corporation and certification agency
- All SCA's must be financially strengthened

Shri D. S. Misra, Dy. Commissioner (QC), Government of India also responded as follows

- Section 8A of the Central Seed Certification Board provides provision for constitution of a technical committee to resolve the technical issues
- GOI has set guidelines for financial assistance to SCA's and invited proposals for budget requirement from SSCAs
- Need to set up guidelines for uniform adoption of seed certification procedures particularly, labelling and usage of tags and suggested to collaborate with printing security press, Nasik for printing of seed certification tags
- As it is not possible to change the colour of Certified Seed tag i.e. azure blue, he suggested to use diluted colour for printing
- The existing Seeds Act doesn't provide any statutory powers to SCAs

- Necessary amendments would be made to IMSCS based on the research findings
- Varietal characteristics should be compiled in the form of compendium
- As and when the situation demands, necessary relaxation in meeting the standards of genetic purity are permissible with the prior approval of Joint Secretary (Seeds) and Chairman
- Efforts should be made to provide data base of seed and planting material at National Level
- Suggested all SCA's to be proactive in implementing OECD seed systems by creating awareness among the stakeholders and seed producers about the benefits of OECD seed certification system
- DA should help in assessing the demand for Indian varieties in other countries for crops like maize, jute, mesta, etc., that have high export potential
- Exports should be planned first to SAARC countries that have uniform climatic conditions similar to India
- Task force committee is constituted under Chairmanship of Joint Secretary (Seeds) & National Designated Authority, Government of India is in operation to monitor the progress of OECD seed scheme in India
- Upgradation of infrastructural facilities & equipment in labs and seed processing plants is essential
- Accreditation of laboratories is the need of the hour
- Phyto-sanitary measures should also be addressed

Dr. N. V. Naidu, Director of Research, ANGRAU, A.P.

- Analyse and understand the constraints and bottlenecks in OECD seed system to develop a clear roadmap
- A committee should be constituted to study in depth about the OECD system
- Andhra Pradesh State has potential for seed production of pulses, vegetables and fruit crops
- Seed testing manual needs to be upgraded and made available on website
- He responded to the issue of production of Groundnut Breeder seed in farmers field as it is unavoidable because of huge Breeder Seed indents and area in Research Stations is not sufficient to meet the indents

Shri R. K. Trivedi, Retd. Deputy Commissioner (QC), Govt. of India responded that lack of maintenance breeding programme has resulting in poor quality of Breeder seed

- Sufficient scientific data is required to change the isolation distance
- Off season nursery / green house facility should be created to speed up the results of GOT
- SCAs as 3rd Party Certification should also take the responsibility of genetic purity
- Updating of Seed Certification Manuals, Seed testing Manuals and Seed Spectrum

Manuals is necessary

- Tolerance limits should be used for adjusting differences between replicated values in testing but shouldn't be misused to dispose off the low standard seed within tolerance limits
- Annual refresher courses should be offered for technical staff
- Certification Agencies should identify master trainers for training the seed producers of concerned regions
- Certification Agencies and National Seed Corporation should identify the potential locations and varieties for export
- SCA's should be funded by additional funds for taking up field inspections under OECD system

Dr. D. Raji Reddy, Director of Research, PJTSAU, Hyderabad made the following remarks

- The Govt. of India should release corpus fund to run SCAs
- Delineate the efficient cropping zones / seed zone
- Establishment of STL's at Block / Division levels
- Constitution of committee to develop Standard Operating Procedures

Dr. S. Rajendra Prasad, Special Officer (Seeds), GKVK, Bengaluru suggested the following points

- Strengthening of human resources for SCA's to match the production area
- Computerization in SCA's to reduce the burden
- Mobile applications based on GPS for use in field inspections
- Continuous power supply to STL's for accurate results
- Validity should be counted from date of harvest
- Validation of seed lots shouldn't be done alone on germination, but should also consider vigour
- Generation system should be followed perfectly to avoid excess Breeder Seed indents
- 100% genetic purity is already present in Breeder Seed Standards
- Seed Crop insurance is necessary
- International exposure to all Directors of SCA's is essential
- Waiving off of certification charges for high volume low value crops

Shri A.S.N. Reddy, President, SMA, Hyderabad delivered following points

- Production subsidy has to go the farmers through SCA's & Department of Agriculture
- Decreasing availability of skilled labour in seed sector needs to be addressed
- Capacity building through trainings to the seed growers is important

Shri K. Niranjan Kumar, SMA, Hyderabad expressed his opinion

- Self certification by private seed companies is in tune with the Seed Bill 2002, whereas

SCA's are doing the third party certification

- Requested APC & Secretary to Govt. (A&C) and Joint Secretary (Seeds), Govt. of India to organise a meeting with the seed companies to understand the mechanism of seed exports
- A platform to focus on international trade on seed exports need to be created and strengthen the business opportunities
- OECD seed certification procedures should be well understood before it is implemented for seed exports

Dr. Vilas A. Tonapi, Director, IIMR, Hyderabad has made the following suggestions in the light of the comments made by other speakers.

- Seed certification should not be mandatory and should be participatory involving representatives from seed industry
- Revision of seed standards should be the dynamic process and can be improved upon once in five years
- Suggested to revise the standards for ODV's based on the scientific research findings
- Perfect seed labelling system (Bar / QR coding) should be adopted to solve the traceability issues in generation systems
- Expressed the difficulty in organising more number of joint field inspections for Breeder Seed plots and the existing standards for Breeder Seed have to be followed for purity maintenance

Workshop conclusion



Dr. K. Keshavulu, Director, TSSOCA, Hyderabad and the convener of the workshop thanked each and everyone who chaired the technical sessions and the delegates for their active participation and sharing the possibilities of implementing the OECD seed schemes in their respective states and countries. He specially thanked Mr. Eddie Goldschagg, OECD Seed Expert from South Africa and Mr. Gerry Hall, OECD Seed Expert from UK for their active involvement and contribution.

Shri C. Partha Sarathi, IAS, APC & Secretary to Government of Telangana and Chairman of the workshop mentioned that India has great genetic potential for seed exports. Responsibility lies in identifying factors that restrict the trade and improve seed exports and its earnings. Government, private seed industry and farmers should expose to such schemes and should gain benefits arising from these schemes. A common platform has to be created for Indian embassies, Government of India, seed industry and farmers for liaisoning the crops (export & import) to facilitate seed exports. The two workshops conducted helped in taking initiatives for effective implementation of OECD. Now the responsibility lies with the NDA's to initiate such programs and make them viable. He highlighted the outcome of the technical sessions. The salient features and discussions of the



two day sessions were presented. He informed to the house that for strengthening of labs budget is already provided under RKVY in the ratio of 60:40 ratio (60% by GoI) and enlisting of varieties was started by GoI, implementing the outcome of first workshop. He advised SCA's to strengthen their human resources, infrastructure facilities, pre and post control facility and change the mode of working of SCA, inclusion of a breeder into SCA to monitor quality seed production, and to go for online certification process. He informed that GoI is planning for budgetary support for foreign visits under OECD scheme for exchange of information, a technical committee has to be constituted for standardization and adoption of uniform procedures in all SCA's, to use IT mobile apps for field inspections, Bar coding system for seed labelling for traceability of seed lot, online availability of data base and updating manuals for seed production, seed testing and seed inspectors. He suggested having Association of Indian Seed Certification Agencies for information exchange and better implementation of seed schemes. The workshop was concluded with vote of thanks to the chief guests, invited delegates and participants by Smt. Vijitha Reddy, SCO, TSSOCA.

Recommendations of the workshop

International OECD Seed Certification

- **Enlisting of Cultivars eligible for OECD Seed Certification :** The official OECD National list of varieties /hybrids to be updated for every three months and placed in the official website of National Designated Authority.
- **OECD Seed Cell :** the cell is to be established to coordinate Designated Authorities for effective implementation of OECD seed scheme, to maintain all information related to International Seed Trade including Data on import and export of seeds and establishment of model OECD seed production plots through lead centre for capacity building.
- **Establishment of National Seed Research & Training Centre (NSRTC) :** The existing NSRTC may not be adequate to built capacities for seed quality testing as per ISTA standards in the entire country. Hence, it is suggested to establish another NSRTC at Hyderabad for effective monitoring of STLs and capacity building, this will cater to the needs of southern states of India.
- **Financial support :** Extending financial assistance to Designated Authorities/SCAs for effective implementation of OECD Seed Scheme. A definite annual budget must be allocated to all the Designated authorities for meeting the expenditure towards the implementation of OECD Seed Schemes until the seed schemes takes off.
- **Foreign Exposure visits :** Participation of Indian delegation comprising nominees from NDA and DAs with 3 years tenure period in the annual and technical meetings of OECD seed schemes. Further study tours for the officials from DAs and Seed Industry to have exposure on ongoing OECD Seed Schemes through international associations ISF, APSA, AOSCA etc.
- **Setting up of Export Promotion Council :** To promote the International seed trade by bringing all stakeholders under one umbrella and for analysing and clearance of factors that restrict seed trade from one country to another country. To improve and promote

international seed trade by associating with international organisations like ISTA, OECD, ISF, AOSCA, EU, etc.

- **OECD Seed Experts for accelerating international seed trade** : Mr. Eddie Goldschagg, South Africa and Mr. Gerry Hall, U.K. have been identified as OECD seed expertise to support International OECD Seed Certification in India also to facilitate exploration of export potential and exchange visits.
- **Annual/ technical meetings** : In order to review the progress and sort out issues on implementation of OECD seed schemes and appraisal on new developments in OECD seed schemes, OECD meetings have to be organised regularly at National level.

Domestic Seed Certification

- **Online Seed Certification** : Online seed certification shall be initiated in all States from 2017-18 by following uniform certification and testing procedures throughout the country without any deviations and also use latest technology like GPS and mobile APPs for carrying out effective seed certification besides online certification. Further a common site must be developed online where availability of all surplus seed (crop/varieties/class wise) can be displayed for distribution to the needy.
- **Calendar of Operations** : Seed Certification Agencies should strictly implement the calendar of operations for various phases of certification by ensuring that the stakeholders adhere to the stipulated time.
- **Yard sticks** : Yardsticks are necessary to decide the category wise staff strength for an Seed Certification Agencies. Hence, yardsticks are to be decided for field inspections and processing supervision for category wise staff.
- **Revision of Manuals** : There is an immediate need for publication and distribution of Updated Seed inspectors Manual, Seed Testing Manuals and Seed Spectrum Manuals.
- **Seed labelling system** : Perfect seed labelling system (Bar/QR coding) should be adopted to solve the traceability issues in seed generation systems.
- **Grow Out Test** : As a post control measure to ensure genetic purity of seed lots under certification programme, 5% of the foundation seed class samples and 10% of the certified seed class samples may be subjected to grow-out-test in addition to the mandate crop species.
- **Formation of Association of Indian Seed Certification Agencies (AISCA)** : To promote and facilitate the production and movement of Certified Seed in domestic and international market through co-ordinated efforts of SSCAs and Stake holders in the country.
- **Exposure visits** : Foreign visits for technical staff of State Seed Certification Agencies to study the ongoing certification procedures for capacity building.
- **Breeder Seed Production** : The ICAR may have to revise the procedure of monitoring

team inspection by increasing the number of field inspections from one to two preferably from flowering to maturity stages.

- **Sponsored breeder** : Sponsored breeder to be appointed by State Seed Corporations to meet the breeder seed requirements particularly in groundnut, chick pea and other pulses to ensure adequate production and supply of foundation and certified seed.
- **Inter State Seed Movement** : State Seed Certification Agencies should follow the prescribed guidelines for Inter State Movement of seed lots with proper safeguard and with separate labelling.
- **Seed Review teams** : Seed Review teams are to be constituted at regular intervals to study seed production, certification, marketing, functioning of SSCs/SSCAs and NSC, private sector seed companies, plant quarantine, exports and imports and whole gamet of seeds.
- **Incentives** : Seed production incentives on Groundnut and Pulses to be extended to all certified seed growers and seed producers including SSDCs/ State Agros Industries to get more areas under certification which will help for strengthening of SSCAs
- **Regulation of substrata for seed testing** : The accuracy and reproducibility of the Germination result is very much dependant on the quality of the substrata used for germination testing. Hence, in order to ensure supply of quality germination paper meeting the prescribed standards by the suppliers there is need for regulating the quality by authorizing the Dept of Agriculture or State Seed Certification Agency in State to certify the quality of germination paper.
- **Assistance for the staff cost** : The 25% Central Share of staff salary up to a maximum limit of Rs. 50.00 lakhs per Seed Certification Agency per year may be enhanced to Rs. 1.00 crore in view of revised pay scales and inflation.
- **Seed Production Subsidy** : To ensure genuine seed production subsidy the distribution of production subsidy to seed growers shall be routed through State Seed Certification Agencies.
- **Organizational & Staffing Structure** : Uniform organizational structure/staffing pattern/designation of category wise technical staff in all certification Agencies.
- **Colour of Certified Tag** : The colour of certified seed tag may be changed to lighter blue colour instead of the Azure blue colour.
- **Processing Plants**: Old and obsolete seed processing plants cause avoidable damage to / wastage of seeds and reduce the efficiency of seed multiplication. Therefore it is essential to improve the efficiency of seed processing by evaluating and ensuring installation of minimum notified essential requirement for processing.
- **Breeder seed**: For authentication of breeder seed and its acceptance and source of production of certified foundation seed it is imperative for standardization for field inspections, grading & packing of breeder seed.

Felicitation

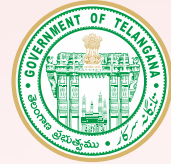


Felicitation



Felicitation





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