

Seed Tech News



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Victoria amazonica L.

(Family:
Nymphaeaceae)

Leaf up to 3 meter in diameter, flower protogynous and up to 40 cms. Found in shallow waters of the amazon river basin. Beetle pollinated (traps pollinators and colour changes once pollinated). Thermogenic flower (attraction and energy reward).

Secretary : SK Jain
Editor : Manjunath Prasad CT



**Essence of OECD Schemes in
the Varietal Certification for the
Control of International Seed
Trade**

The relevance of seed quality is recognized by all the seed certification schemes. Moreover, the need for good quality seed is itself the basis of any certification operating in different nations. EU seed directives regulate the marketing of seed of different group of species through "OECD Seed Schemes", with a basic objective of varietal certification for the control of seed moving in international trade and to encourage the use of seeds of consistently high quality in participating countries.

World seed scenario

The global seed market has been growing rapidly in recent years. The value of the seed market is estimated at about 42.0 billion US dollars. Indian commercial seed market is fifth largest and is valued at 2.0 billion US dollars, way behind USA, China, France and Brazil (Table 1). A sizable quantity of seed is traded internationally with exports and imports valued at 8,256 and 7,842 million US dollars (Table 2). Growth in the international seed trade is being driven by several factors including the rapid decline in transport costs, production cost of HYV's and hybrids, changing climatic conditions, better availability of varieties, labour, supported by more reliable system of international certification and testing.

Table 1. Top five domestic seed markets and its value

Country	Domestic value (in million USD)
USA	12,000
China	9,034
France	3,600
Brazil	2,625
India	2,000

Source: ISF, May 2012

About OECD

The Organization for Economic Cooperation and Development (OECD) an intergovernmental organization founded in 1961, provides a multilateral forum to discuss, develop and reform economic & social policies. Today it has 34 member countries. The OECD's mission is to promote policies for sustainable economic growth and employment, a rising standard of living, and trade liberalization. It is at the forefront of efforts to help governments, understand, respond to new developments and concerns so that economic and social developments are not achieved at the expense of environmental degradation.

The OECD brings together its member countries to discuss and develop domestic and international policies. It analyses issues, identifies good policy practices and recommends actions in a unique forum in which countries can compare their experiences, seek answers to common

Table 2. World seed export and import details

Crop	Export		Import	
	Quantity (in mt)	Value (in million USD)	Quantity (in mt)	Value (in million USD)
Field crops	2,630,351	6,379	1,884,985	5,681
Vegetable crops	1,17,144	3,309	1,32,752	3,152
Flower crops	6,456	299	6,110	265
Total	2,753,951	9,987	2,023,847	9,098

Source: ISF, May 2012 (up to December 2011)

problems, and work to co-ordinate policies. It shares expertise and exchanges views with more than 100 countries worldwide and engages in dialogue with business, labour, and civil society organisations on topics of mutual interest.

The OECD's work is overseen by several bodies. At the highest level is the OECD Council, made up of Ambassadors from all Member countries. The Council's main role is to review and approve the OECD budget and Programme of Work. The specific policy and technical work is directed by special Committees, supported by Working Parties and *ad-hoc* meetings, which bring together technical expertise from member countries. The daily work of the OECD is coordinated and supported by its Secretariat in Paris, with 2,500 staff and a budget of over 448 million USD.

Agriculture codes and schemes

The '*OECD agriculture codes and schemes*' facilitate international trade through the simplification and harmonization of documentary, inspection and testing procedures. For 'seeds', among others, the scheme encourage the production and use of consistently high quality for which trueness to name or source is guaranteed. The codes and schemes are open to any OECD or Non-OECD country that is member of the United Nations or the world Trade Organization. As of 2012, 63 countries (34 OECD member countries and 29 Non-OECD economies) participate in one or more of the OECD Code and Schemes. OECD has enhanced co-operation with 5 major economies namely, Brazil, China, India, Indonesia and South-Africa, which is fundamental to forge a more structured and coherent partnership based on mutual interest.

OECD seed certification scheme

The '*OECD Seed Schemes*' worldwide are recognized schemes for the varietal certification of seed moving in international trade. The Schemes were established in 1958 resulting from a fast growing seed trade, the regulatory

harmonization in Europe, the development of off-season production, the seed breeding and production potential of large exporting countries in Americas' and Europe, and its support of private players.

There are seven Seed Schemes, with voluntary membership for any Scheme. But, participation varies for each scheme. All Schemes aim at seed certification, the Vegetable Scheme provides for "Standard Seed" which are not certified but only controlled.

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|----|--|----------------|
| 1. | Grasses and legumes | (53 Countries) |
| 2. | Crucifers and other oil or fiber species | (52 Countries) |
| 3. | Cereals | (56 Countries) |
| 4. | Beet | (30 Countries) |
| 5. | Maize and sorghum | (45 Countries) |
| 6. | Subterranean clover and similar species | (06 Countries) |
| 7. | Vegetables | (32 Countries) |

Participating countries in the seed schemes

With the recent accession of Ukraine, 58 countries from Europe, The Americas, Africa, the Middle-East, Asia and Oceania currently participate in the OECD Seed Schemes. The Republic of India was admitted in 2008 and participates in grasses and legume, crucifers and other oil or fiber species, cereals, maize & sorghum, and vegetables.

Objectives of the scheme

The main purpose of the Schemes is to encourage the use of "quality-guaranteed" seed in participating countries. The scheme authorizes the use of labels and certificates for seed produced and processed for international trade according to agreed principles ensuring varietal identity and purity.

Varietal identity : The identity of a variety is defined by the official description of its characteristics, resulting from a given genotype or combination of genotypes.

Varietal purity : The varietal purity is the proportion of plant or seeds within the population that conforms to the official description of the variety.

The schemes facilitate the import and export of seed, by the removal of technical trade barrier through internationally recognized labels ("passports" for trade). They also lay down guidelines for seed multiplication abroad, as well as for the delegation of some control activities to the private parties (*i.e.*, "authorization"). The quality of seed certified through the OECD Schemes has grown rapidly in recent years and now exceeds 5,90,000 tonnes.

Fundamental principles of the seed schemes

The schemes are built on a number of fundamental principles. They include only those varieties, which are officially recognized as distinct, and having an acceptable value in at least one participating country. The names of these varieties are published in official list. All the certified seed produced must be related directly through one or more generations to authentic Basic Seed of the variety. Post-control test are conducted to ascertain that the schemes are operating satisfactorily. These tests are intended to determine that the characters of varieties have remained true-to-type in the process of multiplication and to enable the varietal identity and purity of individual seed lots to be verified.

Scope and requirements of the seed schemes

The so needed varietal identity and purity of the seed through appropriate requirements and controls throughout cropping, seed processing and labeling operations is ensured by the rules and directions of the Schemes. Generation control (Pre-basic, Basic and Certified seed), isolation distance, purity standards, field inspections, lot sampling, post control plots, compulsory official laboratory analysis for each certified seed lot. Any country wishing to join the Schemes must follow the guidelines and procedures as set out in the recent version of 'OECD Seed Schemes' and should satisfy the following criteria;

- The opportunity to develop exports and/or imports of certified seed.
- A national seed law, which provides the legal framework for variety registration and seed certification.
- A national list/Registry of varieties.
- An efficient domestic certification system with

adequate infrastructure and qualified staff for field inspection, seed sampling and labeling.

- An efficient authorized laboratory for seed analysis according to ISTA rules or equivalent.
- A system of post control to check the varietal purity of the certified seed.

Modus operandi of the seed schemes

Administration of the scheme

The government of each country participating in this scheme designates a *National Authority* for the purpose of implementing the schemes.

Eligibility of varieties

The variety shall be accepted into the scheme only if satisfactory results have been recorded by official tests in at least one participating country. The test so conducted shall establish the varietal *Distinctness, Uniformity and Stability* over generations of production. An accurate description of the variety including the essential characters and in case of hybrid varieties the description of the parental components must be available. The test must also establish that varieties have an acceptable value in at least one country.

Annual list of varieties

The OECD list of varieties eligible for certification is an official list of varieties that have been accepted by National Designated Authorities as eligible for certification in accordance with the OECD Seed Schemes Rules and Directions. The list of varieties, which is revised annually on the basis of notifications received from the Designated Authorities participating in the Schemes, includes details of Maintainer (s) of the variety and the name of the country (ies) where the variety has been registered.

Role of National Designated Authorities (NDA's)

The appointed National Designated Authority is responsible for:

- 1) Ensuring that the variety to be OECD listed has been registered on the National Official Catalogue;
- 2) Communicating the name of the person(s) or organization(s) responsible for the maintenance of the variety;
- 3) Liaising with the maintainer of the variety.
- 4) Providing written agreement for the multiplication of seed outside the country of registration to the appropriate Designated Authority;
- 5) Supplying an authenticated standard sample of the variety to be multiplied in order that a control plot can be sown to provide an authentic reference of the variety;
- 6) Supplying an official description of the variety to be multiplied;
- 7) Authenticating the identity of the seed to be multiplied.

Seed categories recognized under OECD

The classes of seed recognized under the OECD Seed Schemes are as follows:

Seed class	Label colour
Pre-basic seed	White with diagonal violet stripe
Basic seed	White
First generation certified seed	Blue
Second or successive generation certified seed	Red
Not fully certified	Gray
Mixtures of herbage	Green

Minimum varietal purity standards

Seed lots must satisfy minimum levels of varietal purity to be preserved. These requirements are achieved by way of previous cropping conditions, isolation distances, etc. Field inspection and post-control tests are made for checking these elements and standards. In some cases chemotaxonomic tests are also used.

Samples and laboratory analysis

Each lot of the seed is subject to official laboratory tests for analytical purity, germination and moisture content, etc. OECD certification uses ISTA (or, if necessary, similar) sampling and testing methods.

Authorization of seed certification activities

The rules of OECD Schemes permit activities of the seed certification process to be evolved to authorized persons (inspectors) and laboratories. Three main certification activities are authorized:

1. Field inspection of seed crops
2. Seed sampling (including fastening and labeling)
3. Seed analysis

Multiplication abroad

The success of the scheme depends upon very close cooperation between the maintainers of varieties eligible for certification and the National Designated Authorities in participating countries. When seed multiplication takes place outside a country of registration of a variety, close contact may need to be established between the Designated Authority in a country of multiplication to enable seed varietal certification.

Benefits of the seed schemes

The harmonization of the certification procedure at international level has made a significant contribution in developing the global seed trade. The benefits arising from the facilitation of trade in seeds and the improvement in market access are numerous and can be summarized as follows:

- To facilitate international trade by using globally-recognized OECD labels and certificates (e.g. OECD labels are required to export seed to the European Union).

- To build a framework to develop seed production with other countries or companies.
- To participate in the elaboration of international rules for seed certification.
- To develop collaboration between the public and private sectors.
- To benefit from regular exchanges of information with other national certification agencies and observer organizations.

Conclusion

The future of the OECD Seed Schemes seems quite promising, as more countries are entering international markets, and seed "consumers" are becoming more sophisticated: they demand more certainty, safety and efficiency in what they buy, and demand value for money. The ongoing development and release of new plant varieties and the trend toward the multiplication of seed in third countries increases the complexity of the production and distribution systems. Every country is confronted with a different legal framework, institutional barriers and trade relations; yet, the different approaches must remain consistent among countries entering international markets as importers or exporters of seed. Co-operation among countries and stakeholders in the framework of the schemes is a response to the concern for a market-responsive regulatory approach.

Crop breeding institutions are responsible for developing, maintaining and establishing the distinctness, uniformity and stability of their varieties, not only domestically, but also across borders. However, there is a need for minimum criteria ("rules of the game") to be commonly defined, endorsed and enforced when multiplying seed in large quantities for the trade. The OECD Schemes provide this legal framework at international level. The future of seed is bright, as long as seed can continue to be safely and efficiently shipped around the world, providing the basis for global agriculture and food production.

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Seed Tech News

NOTIFICATION

Ministry of Agriculture, Department of Agriculture and Co-operation, Govt. of India

New Delhi, the 26 July 2012

S.O.1708(E) - In exercise of the powers conferred by Section 5 of the Seeds Act, 1966 (54 of 1966), the Central Government, after consultation with the Central Seed Committee, is of the opinion that it is necessary and expedient to regulate the quality of the seeds of the varieties specified in column (2) of the Table below of the kinds specified in the corresponding entries in column (1) of the said Table, hereby notifies that the said varieties of seeds shall be the notified varieties to be sold for the purpose of agriculture for the States mentioned in column (3) of the said Table and shall be the notified varieties for the whole of India for the purpose of seed production and quality control with effect from the date of publication of this notification in the Official Gazette.

Kind (1)	Variety (2)	States (3)
Anjan Grass	Gujarat Anand Anjan Grass-1 (GAAG-1)	GJ
Blackgram	Vishwas (NUL-7)	MH, GJ, MP, CG, UP & RJ
	VBN 6	TN
	UH-1 (UH 04-06)	HR
Bread Wheat	PBW 644	PB, HR, DL, RJ, UP, JK, HP & UK
Castor	J1-273 (GC 3)	GJ
Chickpea	HK-4 (HK 05-169)	UP, BR, JH & WB
Cotton	H-1300	PB, HR, RJ & UP
	Anand Desi Cotton-1	GJ
Cotton (Hybrid)	Nirmal-12 (NACH-12)	KA, AP & TN
Durum Wheat	UAS-428	KA & MH
Fieldpea	GOMATI (TRCP-8)	NESS
	HFP-529	PB, HR, UK, UP, DL & RJ
Finger millet	VL Mandua 347 (VL 347)	BR, GJ, JH, KA, MP & UK
Greengram	MH-421	HR
	KM 2195 (Swati)	UP
Groundnut	CO6	TN
	Gujarat Junagadh Groundnut 31 (GJG-31) (J-71)	GJ
	Gujarat Junagadh Groundnut 9 (GJG-9) (J-69)	GJ
Horsegram	Gujarat Dantiwada Horsegram-1 (GHG-5)	GJ, RJ, UK, JH, UP & MH
Indian Mustard	Pant Rai-19 (PR-2006-1)	JK, PB, HR & DL

Indian Mustard (Hybrid)	CORAL-437 (PAC-437)	PB, HR, DL, JK & RJ
Maize (Hybrid)	SMH-3904	BR, UP, JH, OR, AP, KA, TN & MH
	CO 6	TN
Pearlmillet (Hybrid)	MP-7872 (MH-1610)	RJ, GJ, HR, UP, MP, PB & DL
	MP-7792 (MH-1609)	RJ, GJ, HR, UP, MP, PB & DL
	86M86 (MH-1684)	RJ, GJ, HR, UP, MP, PB, DL, MH, KA, AP & TN
	CO 9	TN
Pigeonpea	Anand Grain Tur-2 (AGT-2)	GJ
Rice	CR Dhan 500 (IET 20220)	OR & UP
	TRY 3	TN
	ADT 49	TN
	ADT 50	TN
	Gujarat Anand Rice-2 (IET-21614)	GJ
	Punjab Basmati-2	PB
	Mugad Siri-1253	KA
Rice (Hybrid)	CO 4	TN
Sesame	Gujarat Til-4 (GTil-4) (AT-159)	GJ
	DSS-9	KA
Sorghum	CSV 27 (SPV 1870)	AP, MP, TN & HR
	CO 30	TN
Sugarcane	Karan-9 (Co 05011)	PB, HR, RJ, UK & UP
Sunflower	RSFH-130 (Bhadra)	KA
	RSFV-901 (Kanthi)	KA
Sunflower (Hybrid)	CO 2	TN
Wheat	CO W2	TN

Sd/-

Atanu Purkayastha, Jt. Secy.

[F. No. 3-14/2011-SD.IV]

AP: Andhra Pradesh, BR: Bihar, CG: Chhattisgarh, DL: Delhi, GJ: Gujarat, HR: Haryana, HP: Himachal Pradesh, JK: Jammu & Kashmir, JH: Jharkhand, KA: Karnataka, MP: Madhya Pradesh, MH: Maharashtra, NESS: North Eastern States, OR: Orissa, PB: Punjab, RJ: Rajasthan, TN: Tamil Nadu, UK: Uttarakhand, UP: Uttar Pradesh, WB: West Bengal.

Knowledge Sharing and Learning in Seed Science : A Public-Private Initiative



Embanking on regular and continuous upgradation of knowledge drives continuous innovation, USP and adds value for the players in the seed industry. With this main objective, Indian Agricultural Research Institute (IARI) in collaboration with National Seed Association of India (NSAI) under "Project Saksham" organized the first of its kind training program on "Seed Quality Assurance" designed for the seed industry personnel engaged in quality management from July 24-28, 2012 in the Division of Seed Science and Technology, IARI, New Delhi. The course was specially designed which provided updated knowledge in the area of Seed Quality Assurance, Systems Design & Implementation and Quality as a tool of efficiency enhancement for meeting future quality needs. Sh. Balvinder Kumar, Additional Secretary, Ministry of Agriculture, Government of India inaugurated the training program. The program was chaired by Dr. H. S. Gaur, Dean and JD (Edu.) and Dr. (Mrs.) Malavika Dadlani, JD (Res.), IARI was the Guest of Honour. The initiative attracted 22 participants mainly heads of quality department and senior quality managers of reputed seed companies. "It is the high time for the industry to adopt quality as its DNA to promote farmers' prosperity" said Mr. Raju Kapoor, Executive Director, NSAI. Dr. N. K. Dadlani, Director, NSAI was felicitated on this occasion for his untiring efforts in visualizing the capacity building initiative. The 5-day course included faculty from both ICAR institutes and private seed industry. The feedback received from the participants expressed the need for such trainings which brought in new thinking and dimensions in quality control and management among participants. NSAI extended warm thanks to Dr. Vilas A. Tonapi and his faculty who struggled hard to put in place all logistics in successful conduct of the course.

Course Director : Dr. Vilas A. Tonapi, Head
Course Co-ordinators : Dr. Shiv K. Yadav, Sr. Sci.

Dr. Arun Kumar MB, Sr. Sci., Mr. Manjunath Prasad, Sci.
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Capacity Building in Seed Quality Assurance: A Model Training Course



Following a previous successful training programme in July 2012, a model training course on "Seed Quality Assurance" designed for officials of state developmental departments was conducted at Division of Seed Science and Technology, IARI, New Delhi from August 17-24, 2012. The course aimed to provide participants with the skills and knowledge to improve the precision and reliability of seed testing. Participants got hands-on experience of performing seed quality tests with greater emphasis on methods in ISTA Rules. Twenty-one participants represented nine different states. There was considerable variation in the backgrounds and level of experience amongst the trainees, ranged from young laboratory technicians to senior most seed analysts. The training was led by experienced faculty who highlighted on the processes, methods and systems of seed quality assurance. The participants critically analysed the course structure and at the end were in agreement on the benefits of and expressed continued conduct of similar courses in near future.

Course Director : Dr. Shiv K. Yadav, Sr. Sci.
Course Co-ordinators : Dr. Sandeep K. Lal, Sr. Sci.

Dr. Arun Kumar M.B., Sr. Sci.
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OBITUARY

DR SK BANERJEE (1937-2012)



The Indian Society of Seed Science and Technology deeply regrets to inform the demise of Dr. Shyamal Kanti Banerjee on 26 July 2012.

Born on 19 November 1937, Dr. Banerjee had meritorious career both as student and scientist. Obtained Masters Degree from Department of Botany, University of Delhi and Ph.D. from Indian Agricultural Research Institute, New Delhi. As a scientist he was instrumental in establishing the Division of Seed Science and Technology, IARI, New Delhi and rose to the coveted position of Head. Important to note is that Dr. Banerjee was the Founder Secretary of Indian Society of Seed Technology, New Delhi and also served as its president.

Dr. Banerjee was Alexander Von Humbolt Scholar, Germany and served as exchange scientist at University of Reading, UK. Most important international assignments is his thirteen years of close association with Food and Agricultural Organization of United Nations (FAO), Rome as senior consultant and seed expert for countries namely, Sudan, Yemen, Afghanistan, Iraq and Vietnam. Contributed towards building skilled human resource by training international personnel from Asian, African and Caribbean regions, ultimately leading the seed industry in right path towards development in those countries. As kind and thoughtful human, he was much loved and respected by students, colleagues, friends and international experts.

The great soul has departed but his memories will never fade.

May his soul rest in peace!

Editorial Contact Information

Please send us information related to any news, new projects, opinions on policy issues, current happenings, publications, book reviews, foreign visits, new appointments, trainings, seminars, workshops and conferences or other interesting stuff related to seed for the next issue of Seed Tech News.

Suggestions and comments are welcome!

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