

Export of Seeds-History, Present Status and Future Prospects

Ashok K. Thakur^{1*}, N. C. Sarkar² and Ratikanta Maiti³

¹Seed Technology and Production Centre, Dr Y S Parmar University of Horticulture and Forestry, Nauni, Solan, HP (173 230), India

²Department of ASEPAN, institute of Agriculture, Visva-Bharti, Sriniketan, West Bengal, (731 236), India

³Universidad de las Americas, Departamento de Quimica y Biologia, Santa Catarina Martir, C.P., Puebla (72820), Mexico

Correspondence to

*E-mail: ashok.horticulture@gmail.com

1. Historical Events in Evolution of Seed Export

The movement of seeds of cultivated plants started with the movement of man across nations and continents. However, the formal trade of seeds was started with the establishment of the *Fédération Internationale du Commerce des Semences* (FIS) (International Seed Trade Federation) in The First International Seed Congress held in London in 1924. In 1938, the International Association of Plant Breeders for the Protection of Plant Varieties (ASSINSEL, the acronym derived from French for *Association Internationale des Sélectionneurs pour la Protection de Obentions Végétales*) was established with the chief objective to adopt international norms for protection of plant varieties. With the aim of encouraging the development of new varieties of plants, the International Union for the Protection of New Varieties of Plants (UPOV) was established in 1961 by the International Convention for the Protection of New Varieties of Plants (the "UPOV Convention"). In mid 1970s, the significant changes took place in the plant breeding and seed industry with mergers, consolidations and integration of the whole seed chain. This integration led to the merger of FIS and ASSINSEL on the occasion of the Annual Congress in Chicago in 2002 to become ISF, the International Seed Federation. Since then, ISF continues the work of FIS and ASSINSEL. Organization for Economic Co-operations and Development (OECD), originally established as Organisation for European Economic Cooperation (OEEC) in 1948 with one of its objective to promote seed export across the world. With a view to enhance the seed export potential, India has become

the member of OECD seed schemes since October 2008.

The Indian International Trade Policy was initially focused on the protection of its markets from competitions from overseas markets. India was the most closed economy across the globe till the late 1980s. It is only in 1991 that India launched a new policy of privatization, deregulation and globalization of its economy. The import of seeds was opened in 1988 with the enforcement of New Policy on Seed Development. The New Policy on Seed Development greatly liberalized import of vegetable and flower seeds in general and seeds of other commodities in a restricted manner and also encouraged multinational seed companies to enter the seed business. However, export of seed from India boosted with the implementation of Export Import Policy, 2002-2007 also known as EXIM Policy, 2002-2007. The policy governs the export of goods or commodity including seeds. With the enforcement of this policy the restrictions on seed export of all cultivated crop varieties have been removed with effect from 1st April 2002 except (i) breeder or foundation or wild varieties; (ii) onion, berseem, cashew, nux vomica, rubber, pepper cuttings, sandalwood, saffron, neem, forestry species and wild ornamental plants; (iii) export of niger which is canalized through TRIFED, NAFED, etc. (iv) groundnuts, exports of which is subject to compulsory registration of contract with APEDA. The export of these seeds is restricted and is only allowed on case-to-case basis under licence issued by Director General Foreign Trade on the basis of the recommendations of Department of Agriculture and Cooperation, GOI.



2. Present Global Position

In global scenario, US tops the domestic seed market with value of US\$ 12000 million followed by China (US\$ 9950 million), France (US\$ 2800 million), Brazil (US\$ 2625 million), Canada (US\$ 2120 million) and India (US\$ 2000 million). These three countries (26.71%, 22.15% and 6.23%, respectively) has more than 50% share of the global seed market. Indian seed market has elevated from 10th position with value of US \$ 600 million in 2002 to 6th position with US \$ 2000 million in 2012, however, its share is only 4.45% of the world's total seed market. The key driving factors for this increase are introduction of transgenic Bt cotton and single cross maize hybrids; rapid adoption of rice hybrid; increased SRR of pulse and oilseed varieties; and increased demand of high value vegetable seeds.

The total export of seeds round the globe is to the tune of 2.75 million tonnes amounting to be US\$ 9987 million (ISF, 2012). France tops the list with US\$ 1616 million followed by The Netherlands (US\$ 1476 million) and USA (US\$ 1394 million) in the calendar year 2011 (Table 1). India ranked 27th with total seed export of 6200 metric tonnes worth US\$ 59 million and it is only 0.59% of total seed export in the world (Chart 1).

If the data is segregated into field, vegetable and flower crops. In seed export of field crops, France is the leading country in the world with an annual value of US\$ 1232 million followed by USA (US\$ 813 million) and Germany (US\$ 638 million), while India is at 30th position (US\$ 30 million). France (19.31%), USA (12.74%), Germany (10.00%), Hungary (5.86%) and The Netherlands (4.01%) collectively constitute more than half of

the world's seed export field crop including pulses, cereals, forages and some industrial crops. However, India's contribution in field crop seed export is less than half percent.

However, the position of India is comparatively better in vegetable seed export having 15th rank with annual value of US\$ 29 million. The top three countries in vegetable seed export are The Netherlands (US\$ 1146 million), USA (US\$ 507 million) and France (US\$ 366 million). The 50% of the vegetable seed export was done by The Netherlands (34.63%) and USA (15.32%). India ranks 15th with annual value of US\$ 29 million and global share of just 0.88%.

In flower crop, the leading three countries are The Netherlands (US\$ 74 million), USA (US\$ 74 million), and Germany (US\$ 34 million). The Netherlands (24.75%) and USA (24.75%) almost grabbed the half of the world market in flower seed export. India is yet to make any figure in flower seed export.

3. General Trade Constraints

Seed industry faces several constraints that need full cooperation and urgent attention to mitigate the problems in a sustainable manner. A global support for meeting the research related challenges and problems is the foremost requirement. Resource mobilisation treaties and memoranda among nations and international associations are the need of hour. Ideally the success of international trade lies in identifying the right position of the product during product life cycle (PLC) in the given area or nation. It is difficult to explore the international market in the purview for extending PLC of the seed product over the global market owing to difficulty in estimation of PLC of seed as a

Table 1: Top ten countries of world in seed export in the calendar year 2011 (Value in million US \$)

Field Crop Seeds				Vegetable Seeds				Flower Seeds				Total Seed			
Rank	Country	Value	%	Rank	Country	Value	%	Rank	Country	Value	%	Rank	Country	Value	%
1	France	1232	19.31	1	Netherlands	1146	34.63	1	Netherlands	74	24.75	1	France	1616	16.18
2	USA	813	12.74	2	USA	507	15.32	2	USA	74	24.75	2	Netherlands	1476	14.78
3	Germany	638	10.00	3	France	366	11.06	3	Germany	34	11.37	3	USA	1394	13.96
4	Hungary	374	5.86	4	Chile	131	3.96	4	Chile	31	10.37	4	Germany	745	7.46
5	Netherlands	256	4.01	5	Italy	118	3.57	5	France	18	6.02	5	Hungary	392	3.93
6	Canada	256	4.01	6	Israel	117	3.54	6	China	15	5.02	6	Chile	380	3.80
7	Denmark	232	3.64	7	Japan	111	3.35	7	Japan	13	4.35	7	Italy	319	3.19
8	Chile	218	3.42	8	China	105	3.17	8	Costa Rica	12	4.01	8	Denmark	280	2.80
9	Romania	214	3.35	9	Thailand	80	2.42	9	UK	9	3.01	9	Canada	259	2.59
10	Belgium	203	3.18	10	Germany	73	2.21	10	Guatemala	3	1.00	10	Romania	214	2.14
30	India	30	0.47	15	India	29	0.88	-	India	-	-	27	India	59	0.59
	World	6379			World	3309			World	299			World	9987	

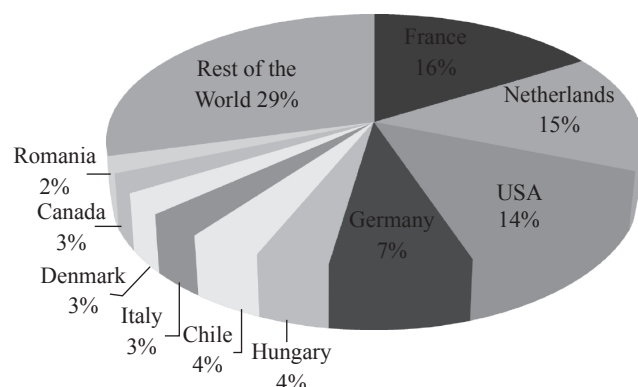
Note: Only exports with a value greater than US\$ 1 million have been reported; Flower seed includes seeds of herbaceous and non-herbaceous plants cultivated mainly for flowers; Field crops seed includes seeds of pulses, cereals, industrial crops and forages; Vegetable crops seed includes seed of all vegetables except potato and mushrooms. (ISF, 2012)

product. It is important to understand the fact that international relations among corporate, nations, associations and forums have become the order of contemporary international trade in the post WTO global trade regime. This has posed drastic threat resulting a sidelined treatment and helplessness for the developing countries. International communities must open more totally protected and safe sea routes than current only 27 routes out of 1215. Consequently, making a rush trade to these few route areas has resulted to a preferential commodity trade transactions. Thereby, seed industry in India specifically has been severely affected over the last one decade, as India barely able to hold the preferentiality over around 5 trade routes only. Additionally, as of now, the global seed standards are heterogeneous and need to establish internationally accepted seed quality and certification standard.

4. Seed Specific Constraints

In-house R&D in plant breeding is not growing with a pace to cope up with domestic demand in developing countries like India. These countries are importing the improved varieties developed overseas. Moreover, there is no specific breeding

Chart 1: Top ten countries in total seed export in calendar year 2011 (IFS, 2012)



programme for development of crop varieties for exporting their seeds. Intellectual Property Rights (IPRs) should be addressed with adequate mechanisation, awareness on legislations and certification. Restrictions on export of germplasm or research material need to be lifted. Presently, public and private organizations are working in isolation in almost all aspects of R&D. Strong public private partnerships (PPPs) are urgently needed in different areas. Furthermore, low level presence (LLP) due to the unintended non-approval of kind or variety in the country of import while it is approved in the country of export is another legal hindrance significantly affecting international seed industry of GM varieties of crops.

5. Future Prospects

The global seed market has grown at 5.6% during the

period 2005-2011 which was primarily supplemented by the remarkably rising population and inflating agricultural commodity prices, especially during the year 2007 and 2008. Overwhelming, an increasing adoption rate of genetically modified crops throughout the globe has supplemented the sales value of the seed market in the recent past. Moreover, increasing production of bio-fuel across the major economies with an objective to generate an alternative for the scarcity of traditional fuel has inclined the demand for corn seeds and oil seeds. This growth trend may be at increasing rate if we can open seed export at large markets like South Asia, Middle East Asia, Australia and Africa are large markets for seed export. India has a huge scope to produce seeds of a range of crops owing to its vivid agro-climatic conditions. It will also offer opportunities to generate entrepreneurs and employment for rural India.

6. Conclusion

Seed, a vital input in agriculture, is a commodity of trade inland as well as overseas. The movement of improved seeds across nations is essential for the growth and development of agriculture and fulfil the needs of growing human population in terms of food, feed, fibre and fuel as well. The export seed industry is not fully exploited owing to a number of political, trade and seed related constraints. These issues need to be addressed to harness the enormous potential of international seed trade.

7. References

- Department of Commerce, GOI. 2013. <http://commerce.nic.in>. Accessed in October 2013.
- Gadwal, V.R., 2003. The Indian seed industry: Its history, current status and future. *Current Science* 84(3), 399-406.
- ISF, 2013. <http://www.isf@worldseed.org>. Accessed in October 2013.
- Manjunatha, B.L., Rao, D.U.M., Dastagiri, M.B., 2013. Trends in seed production, growth drivers and present market status of Indian seed industry: An analytical study. *Indian Journal of Agricultural Sciences* 83(3), 315-20.
- OECD., 2013. <http://www.oecd.org>. Accessed in October 2013.
- UPOV., 2013. <http://www.upov.int>. Accessed in October 2013.