



**FACULTY OF AGRICULTURAL SCIENCES
AND ALLIED INDUSTRIES**

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History of Seed Industry in India

History and development of seed Industry in India can be discussed under two heads;

1. Pre-independence development

2. Post- independence development

1. Pre -independence development: during early years of 20th century efforts were made to develop improved varieties of cotton, wheat, groundnut and sugarcane. The state department of agriculture adopted two methods for multiplication and distribution of these improved varieties;

1. the seed of improved varieties were multiplied at one location and distributed over a large area to replace local varieties

2. The seed was distributed in small packets to large number of farmers and it was expected that farmers would multiply their own seed.

When the second method was tried in Bengal with improved varieties of jute and paddy it did not give fruitful results, hence the first method was followed.

In 1925 Royal Commission on Agriculture was constituted and it made the following recommendations for introduction and spread of improved varieties;

1. Separate organization should be there within agriculture to deal with seed testing and distribution.

2. The seed distribution should be made through co-operative societies, dept. of agriculture and seed growers.

3. Private seed growers should be given encouragement.

Following the suggestions of Royal commission the Govt. of India established several

Research Institutes, however the seed multiplication and distribution was not encouraging.

Later on several committees were made, notable among them are;

Sir John Russell Committee in 1937

ICAR committee in 1940

Dr. Burns committee in 1944

Famine enquiry committee in 1944 and

Food Grain Policy committee in 1944

These review commissions revealed that;

1. Crop botanist should be involved in development of improved varieties, their testing and demonstration
2. Initial seed should be multiplied on govt. farms and subsequent multiplication in the fields of registered growers
3. Govt. should purchase the seed from registered growers at a premium price and later on distribute to farmers at concessional rates.

Till 1939 vegetable seeds were imported from other countries and due to IIInd world war in 1939, the supply of veg. Seeds was stopped. By 1945 private veg. Seed companies had developed facilities for producing veg seed at Quetta in Pakistan and Kashmir valley. In 1946, All India Seed Growers, Merchants and Nurserymen's Association was formed with the objective of rapid development of veg. Seed Industry.

Seed Industry after Independence

1948 – 17: Agricultural colleges were under the department of Agriculture

1948-49: Dr S. RadhaKrishnan recommended the formation of Agricultural Universities and he called them rural Universities.

1950: Recommendations were given by experts from foreign countries for the establishment of Agril. Univ.

Until 1951 agriculture was neglected and after the formation of Agricultural Univ. and Research Institutes agriculture development started in India.

First Five Year Plan (1951-56); During this period major emphasis was given for the use of improved seed. The improved varieties were developed and the breeder seed was produced on govt. farms. It was then multiplied in 2 or 3 stages through 2 or 3 classes of cultivators termed as A, B and C. Larger the number of intermediate stages less pure was the seed. In 1952 - Grow More Food Enquiry Committee was constituted they recommended seed multiplication and distribution schemes. However the progress made during the FFYP was poor and seed was mainly distributed with subsidy.

Second five -year Plan (1956-61): Generally this period is regarded as golden period for Agricultural Development and Research. In 1957 All India coordinated maize Improvement Project was started in collaboration with Rockefeller foundation of USA with multidisciplinary approach. Within four years of its establishment four maize hybrids were released. 1961-Deccan Hybrid Makka -Hyd

Ranjit from New Delhi
Ganga -1 from G.B.Pant Agril. Univ. U.P
Ganga -101 from G.B. Pant Agril. Univ., U.P.

By seeing the progress made the Govt. of India started similar projects on Sorghum and Bajra in 1961 and the first sorghum hybrid CSH -1 was released from New Delhi in 1964 and First bajra hybrid HB -1 from Punjab in 1965. Later on the Govt. of India extended it to all crops of economic importance.

During this period importance was given for multiplication of foundation seed from breeder seed at block level. For this a policy was made that each National Extension Service

Block should have a seed farm and a seed store. Based on this 4328 seed farms of 10 hectares each were proposed. However by the end of second plan period only 2551 seed farms could be commenced. In 1959 first IndoAmerican Agriculture Production Team was constituted to examine India's food production problems. The team headed by Dr. Sherman E. Johnson of Ford Foundation made following suggestions;

1. Village Block and district level extension workers should be made responsible for educating farmers in use of improved seed
2. State Agril. Dept. should be made responsible for seed certification
3. Co-operatives and private seed growers should be made responsible for seed supply
4. Setting up of seed testing laboratories and
5. Development of uniform seed certification standards and seed laws. In spite of significant developments made, the desired progress could not be achieved during SFYP due to following

reasons;

1. Requisite quantities of breeder seed were not available.
2. Only imp. Cereals hybrid maize and bajra were included in seed programs
3. FSP at block level was not organized properly and in some blocks the foundation seed was not fully utilized.
4. Timely inspections for roughing of undesirable plants were not made.
5. Marketing of improved seed was largely left to seed producers.
6. The seed procurement was unsatisfactory for want of adequate funds.
7. Seed processing was defective and there were large number of complaints regarding purity and germination of seeds First Agricultural Univ. in the country was started at Pantnnaar in U.P.

Third Five Year Plan (1961-66): The release of first four maize hybrids in 1961 necessitated the creation of separate organization for seed production to exploit the full production potential of these hybrids and this gave birth to central seeds corporation in 1963. The main aim of establishing CSC was

1. To establish foundation and certified seed production
2. To assist in the development of seed production and marketing of seeds
3. To encourage and assist in development of seed certification programs, seed law and seed law enforcement programs.
4. To train personnel involved in seed programs and
5. Co-ordinate the improved seed programs¹¹

This marked the beginning of systematic seed production program based on scientific principles. Initially NSC was established for foundation seed production but as there was no other organization NSC has taken the responsibility of FSP, CSP, seed certification and seed marketing. In addition to these it also assisted in setting up of seed processing plants, helping private seed producers and training individuals in seed production programs. The most significant achievements of NSC in development of seed industry are

1. Establishment of a scientific seed industry in the country
2. Encouragement of Indian manufacturers for seed processing equipment.
3. Development of field inspection methods and seed standards for seed certification and labeling
4. Multiplication of pre-released varieties of all India importance
5. FSP of varieties of all India Importance
6. NSC provided expert services to FAO for designing high capacity processing plants in Iran and seed storage structures in Malaysia.

1966-69-Annual Plans:

In 1966 High yielding variety program was launched by govt. of India. This program envisaged coverage of 9.2 m.ha. of food crop area by 1968-69 and 25 m.ha by 1973-74 under HYV of bajra, maize, sorghum, paddy and wheat.

On 29th Dec. 1966 Seed Act Bill was introduced in the parliament.

On 2nd Oct, 1969 the Seed Act Bill came into force throughout the country. In 1968 a seed review team was constituted by govt. of India, The team dealt on wide range of topics and 101 recommendations. Some of the important recommendations of the team are;

1. Compulsory registration of varieties marketed as seeds
2. Elimination of varieties of doubtful value
3. Pre-release publicity to be avoided and arrangement should be made for pre-release multiplication of promising varieties
4. Persons/institutions in plant breeding research are required to register with ICAR
5. NSC should continue as national agency for foundation seed production and Agril. Univ. also should be developed for this purpose.
6. Co-operative and private seed growers should be encouraged in seed production, Processing and marketing. Govt. agencies should concentrate on planning, research and extension.
7. NSC should assist state govt. in setting up of seed certification agencies and transfer its certification work to them.
8. ICAR should lay down the standards to improve the quality of breeder seed. Fourth Five -year plan (1969-74): Tarai development corporation was established in 1969 with the assistance from World Bank. The project aimed at integrated agriculture development of Tarai area with the

production of quality seed as primary objective. Later on it has been renamed as U.P. Seeds and Tarai Development Corporation Ltd., w.e.f. 1st July 1978. The unique features of this corporation were;

1. Involvement of G.B.Pant Univ. of Agril. & Tech. The staff were involved in the project to provide technical guidance and supervision to seed growers so that they can produce large quantities of F/s and C/s required for entire project area.
2. Integrated development approach, main emphasis was given for land leveling, farm mechanization, irrigation development, electrification and adequate availability of other inputs necessary for raising excellent crop and credit facilities.
3. Participation of seed growers as shareholders of the corporation in contrast to the contact system of seed production.
4. Compact Area Approach: Technical supervision, guidance and certification are time consuming and important tasks. They can be effectively carried out in compact areas. Further it becomes easy to undertake collective plant protection measures, conducting training programs and to arrange credit facilities.
5. Strict quality control: In addition to inspection done by SCA the corporation with the assistance from G.B.Pant Univ. conducts inspection during seed production, marketing and distribution. For the first time they started testing the samples in the laboratory and inferior seed lot were rejected.
6. Money Back Guarantee: Corporation gives the money back if any seed lot is found to be substandard by the corporation.
7. Integrated approach for marketing seeds: the corporation appointed its dealers only those who are simultaneously marketing fertilizers, pesticides etc. so that the consumers can get most of the inputs at one place.

In 1971 - Indian society of Seed Technology was formed. The society provides opportunities for exchange of experiences and scientific knowledge to persons engaged in seed industry. The ISST publishes Seed Research and Seed Technology Newsletter and usually meets once in a year.

Fifth five-year Plan (1974-77): National Commission on Agriculture carried out A review of seed industry and it gave its recommendations in 1976, which are as follows;

1. Seed industry should be expanded on commercial lines and foreign should be invited if necessary.
2. ICAR and the central seeds committee should develop a system of national registry of varieties.
3. Encouragement should be given to small participants to form compact areas for seed production.
4. Promotional measures should be given for seed growers such as seed crop insurance, exemption of taxes etc.
5. Development and fabrication of seed processing equipment.
6. Seed processing should be made compulsory.
7. Storage of breeder seed and nucleus seed should be done under controlled condition.
8. Grow out test should be made an integral part of seed testing.
9. Rigorous enforcement of seed act.
10. Compulsory certification may be desirable for seed material of hybrids and vegetatively propagated crops.
11. Teaching of seed production technology should be introduced in Agricultural Universities.
12. Dept. of Agril. should have three distinct wings dealing with
 1. Input aspects
 2. Law enforcement
 3. Seed certification.

Based on the recommendations of NCA, govt. of India decided to establish seed production agencies in the country for assured supply of seed for increasing agricultural production. Following the recommendations of NCA in 1976, the govt. of India in 1974 decided to launch National Seeds Programme with the assistance of World Bank. NSP -I was implemented in 1975-76 with actual implementation starting in 1976. During the first phase SSC were established in four states namely Punjab, Haryana, Maharashtra and Andhra Pradesh. The programme was further expanded during phase II and SSC were established in another five states namely Karnataka, Rajasthan, U.P., Bihar and Orissa. Sixth five-year Plan (1980-85): Seed control Order was passed declaring seeds as an essential commodity. GOI started national Agricultural Project (NARP) due to which the entire country was divided into 127 agroclimatic zones and A.P. into seven zones. Seventh Five year Plan (1985-90): During this period emphasis was given for infrastructure development and facilities for enhancing seed production both in public and private sector. Under the NSP-III, SSC were established in another four states namely, Assam, West Bengal, M.P. and Gujarat. Strengthening of Seed Technology research and training facilities. New Policy on seed development was passed on 16th Sept. 1988, which came into effect on 1st Oct, 1988. The policy was directed to assure the Indian farmers access to the best seeds available anywhere in the world with a view to maximize the yields of various crops. It laid emphasis on

1. Import of High quality seeds
2. A time bound program to strengthen Plant Quarantine facilities.
3. Effective observance of procedures for quarantine/post quarantine.
4. Incentives to encourage the domestic seed industry.

Eighth five-year Plan (1992-97): Increased seed production targets have been fixed for the 8th plan period.

APSSDC: The APSSDC was established in March 1976 as a result of Govt. of A.P. accepting the NSP in 1974. The APSSDC was formed by the growers but maintained by state Govt.

Officials and is involved in quality seed production and distribution. Each share of the grower is of Rs 500/-.

Govt. of A.P. holds: 36.29 %

NSC holds: 27.11%

Seed Growers hold: 36.60 %

The main objectives of APSSDC are

1. Breeder seed production in oilseeds
2. Foundation and certified seed production of different crops
3. Seed production of pre-released and non-notified varieties
4. Seed processing, packing, storage and seed marketing and distribution
5. Seed supply to problematic areas
6. Assists in breeder seeds production and acts as nodal agency for BSP and distribution.
7. Acts as nodal agency for maintaining buffer stock of seeds
8. Undertakes collaboration in seed technology research
9. Co-ordinates seed imports
10. Gives constancy services sand conducts training to seed growers
11. Takes up extension programs to enlighten the fanners to use quality seeds.

APSSCA; It was registered under A.P. (Telangana area) public societies registration act with a regd. No. 334/78 to carry out the functions of certification agency under seed act 1966 in A.P. w.e.f. 1.6.1979.

Functions of Seed Certification Agency are:

1. To certify seeds of any notified kind or variety
2. Outline the procedure for seed certification to ensure that the seed lot meets the prescribed field and seed standards
3. Verify the eligibility of the variety for certification and to verify the seed source
4. Maintains a list registered plant breeders
5. To conduct field inspection at different stages of crop growth to verify the field standards and genetic contamination
6. Draws samples from seed lots to confirm that the seed meets the prescribed seed standards.
7. Inspect seed processing plants to verify and avoid mechanical mixtures during seed processing.
8. To educate the farmers about the use of certified seed
9. Grant of certificate, labels and tags
10. Maintenance of such records as may be necessary during seed certification.