

# **Guidelines on Use of Biotechnology in Agriculture**

## **1. Capacity Building and Training of Manpower for upgradation of Post Release monitoring**

- (i) This will be implemented through ICAR Centres, State Agricultural Universities (SAUs), Directorates of Agriculture of States, State Seed Corporations, Krishi Vigyan Kendras (KVKs), NSC/SFCI, Central Universities, Department of Biotechnology identified Institutions, and other reputed Institutions of the State contributing to agriculture related scientific applications.
- (ii) The financial assistance would be given for capacity building, training and actual monitoring in respect of gene flow to wild relatives and non targeted crop species, building up resistance, observance of maintenance of refugia and other post release requisites.
- (iii) The financial assistance in particular will be given for capacity building for training of manpower in advance techniques of risks of Living Modified Organisms (LMOs), inspection, monitoring, handling of GMO material, quarantine issues relating to segregation, identify preservation and strengthening of institutions addressing issues of certification.
- (iv) For the purpose of ensuing post release monitoring and bio-safety, financial assistance would also be given for training of extension staff, seed testing staff, seed certification staff and personnel belonging to enforcement agencies like quality enforcement officials of Department of Agriculture of States and Personnel from other organizations like Plant Quarantine & Custom officials as well as farmers.

## **2. Quality Control of Genetically Modified Seeds / Crops**

- (i) Financial assistance would be provided to the State Seeds Testing Laboratories to upgrade themselves to test presence / absence of Bt. genes in seeds.
- (ii) At least one such laboratory shall be upgraded in each State.
- (iii) Financial assistance will be provided to State Seed Testing Laboratories to augment their capacity to test the spurious Bt. cotton seeds as per guidelines of Central Institute of Cotton Research (CICR).

## **3. Training of Manpower**

- (i) Farmers training in the field of GM seeds will be organized by ICAR Centres, State Agricultural Universities (SAUs), Directorates of Agriculture of States, State Seed Corporations, Krishi Vigyan Kendras (KVKs), NSC/SFCI, Central Universities, Department of Biotechnology

identified Institutions, and other reputed Institutions, to make them familiar with benefits / risks of GM crops, for which these institutions would be provided with financial help under the scheme as under:-

S. No.	Particulars	Expenditure particulars in Rs.	No. of participants	Total Expenditure in Rs.
1.	Training kit consisting of one bag, cap, stationery items and certain lab accessories like magnifying lens, taps, etc.	500	25	12,500.00
2.	Handbook on Seed Inspectors / Seed testing / or relevant to the training	140	25	3,500.00
3.	Preparation of course materials and training materials etc.	100	25	2,500.00
4.	Training Hall rent	1000	For 7 days	7,000.00
5.	Honorarium to Trainers for 40 lectures	250	25	10,000.00
6.	Internal transport for field visit's / study tour and movement of trainees.	260	25	6,500.00
7.	Tea snacks to participants including lunch / dinner on inaugural and valedictory function inclusive cost of Certificate and Group photo, etc.	320	25	8,000.00
	<b>Total</b>			<b>50,000.00</b>
	Note: The amount earmarked for one item could be re-appropriated for another item depending on the requirement.			

#### **4. Awareness Campaign**

- (i) In order to gain public acceptance of GM crops, scientific demonstration of bio-safety of transgenic crops and promoting awareness on these issues by various agencies is extremely important.
- (ii) An intensive and integrated awareness promotion on issues relating to GM crops with active cooperation of various scientific organizations/ institutions / State Agricultural Universities / NGOs to generate public awareness shall be launched.
- (iii) The campaign may be organized through workshops / seminars / media campaigns including through Krishi channels. Accordingly grants shall be given to various institutions / organizations / SAUs etc.
- (iv) ICAR Centres, State Agricultural Universities (SAUs), Directorates of Agriculture of States, State Seed Corporations, Krishi Vigyan Kendras (KVKs), NSC/SFCI, Central Universities, Department of Biotechnology

identified Institutions, and other reputed Institutions shall be eligible for financial assistance for this purpose.

- (v) DAC will also assist National/International Conferences/Workshops on Agricultural Biotechnology organized by the Department/DBT/ICAR/MoEF/SAUs/and other reputed institutions/organizations etc. Such assistance will be considered on case to case basis.

## 5. Tissue Culture

- i) State Departments of Agriculture, Horticulture, Floriculture, State Seeds Corporations, National Seeds Corporations, SFCI, State Agriculture Universities, Central Universities, and other reputed Institutions of the State contributing to agriculture related scientific applications shall be eligible for financial assistance up to **Rs.100.00** lakhs for establishment/strengthening of Tissue Culture facilities. However, this will be considered on case to case basis as well as on merit of the proposal.
- ii) To begin with not more than one facility shall be assisted in a State. However, more than one tissue culture facility can also be considered for approval depending upon the need and merit of the case.
- iii) The nodal agency for each State shall be its Department of Agriculture/Horticulture/Floriculture. The proposals shall be submitted to DAC through the nodal agency of the State. Proposals may also be submitted by the implementing agencies directly to the Department of Agriculture and Cooperation, to avoid unnecessary delay in the release of financial assistance in such case. However, this will not absolve the nodal agencies of their responsibilities. This will ensure linkage between production of plants through micro-propagation and their distribution to the end consumer, i.e. the farmer. State Governments may consider subsidizing distribution of Tissue Culture raised plants. National Seeds Corporations can send their proposal directly to the Department of Agriculture and Cooperation.
- iv) The proposal should be relevant to the cropping pattern, agro-climatic condition and requirements of the State in which the facility is to be set up.
- v) The product mix should be such as would make the facility economically viable.

- vi) The targets of production of planting material should be clearly defined.
- vii) The Department/Agency/Institution assisted for the establishment of Tissue Culture facilities along with the nodal agency in the State shall be responsible for the distribution of Tissue Culture raised planting material.
- viii) Very low capacity i.e. less than 1 million and larger capacity of 10 million and above is unlikely to be viable. For less than 1 million capacity, the cost of production will be very high. Large capacity plants face a problem of unutilized capacities.
- ix) The status of development of technology and its source are important. It should be ensured that the commercial viability of technology has been established on a sufficiently large scale. Adequate provision should be there for quality control and quality assurance.
- x) The Department/Agency/Institution shall be free to choose any technology provider in consultation with the Department of Biotechnology.
- xi) The technology provider shall be eligible for such consultancy charges as may be determined by DBT and these charges shall be debitable to the financial assistance provided by DAC subject to a maximum limit as may be prescribed by DAC.

**6. Monitoring :**

The progress of various activities for which financial assistance is given, shall be monitored by a Monitoring Committee consisting of representatives from ICAR, IFD, and Seeds Division, who will review the performance six monthly. Representative of Department of Biotechnology will be called as a special invitee. A proforma will be prescribed for monitoring of the scheme.

\*\*\*