सत्यमेव जयते

Department Of Biotechnology
Ministry of Science & Technology
Government of India

Call for Proposals: Biotechnological Interventions for Improvement of High Value Cash Crops

Last Date of Submission of proposal: 5th May, 2026

High-value cash crops including fibres, oilseeds, spices, and horticulture crops play a critical role in agricultural income, export earnings, and livelihoods of the country. Although grown in small geographical area, India's agricultural GDP is substantially impacted by these cash crops. India is also largest producer and exporter of spices while crops like cotton and sugarcane substantially enhance agro-based industries and rural economies in the nation.

Despite this potential, yield gap for these crops remain substantial. The productivity and quality of spices, such as black pepper, cardamom, and saffron, are sometimes limited by biotic and abiotic stresses. Plantation crops such as tea, coffee, and cocoa demonstrate considerable susceptibility to climate fluctuations and require continuous genetic improvement to sustain productivity, quality, and resilience. Oilseed crops, such as groundnut, soybean, and sunflower, are facing constraints in meeting global edible oil demand due to inadequate yields resulting from poor water management, temperature stress, soil fertility issues, and other climatic changes. Pest and disease infestations further reduce its yield and efficiency. The production systems of industrial crops, such as cotton and sugarcane, are facing increasing problems from water scarcity, soil degradation, and insect dynamics. Simultaneously, the growing demand from consumers, the allure of export opportunities, and their contribution to varied agricultural practices are elevating the importance of high-value horticultural products. Grapes, dragon fruit, and pomegranate are prime examples. A considerable post-harvest loss is also seen in these high valued crops.

In this context, it is imperative to focus on **targeted varietal development** using advanced breeding approaches where pre-existing improved lines or proof-of-concept technologies can be leveraged. Further, it is equally important to address **enhancement of nutritional and quality traits** which remains underexplored in conventional breeding programs. In order to reduce losses and preserve quality**, Post-harvest measures** are crucial. Particularly for perishable high-value crops, innovative solutions including bio-control agents, bio-preservatives can assist in increasing shelf life, minimize spoiling, and chemical-free food preservation. Finally, **processing characteristics** must **be carefully considered to match agricultural** output with industrial demands**.** Changing the biochemical composition, which includes starch, sugar, oil, protein, fibre quality, and moisture content, can significantly increase processing efficiency and value addition in sectors like textiles, food processing, and bio-based products. The Department of

Biotechnology is announcing this Call for Proposal in order to address the above challenges through biotechnological interventions.

2. Priority Crops:

- **Spices**: Black pepper, Cardamom, Saffron
- **Plantation crops**: Tea, Coffee, Cocoa
- **Other Industrial crops**: Cotton, Jute, Sugarcane
- **Oilseeds:** Groundnut, Soybean, Sunflower
- **Horticulture Crops:** Pomegranate, Grapes, Dragon fruit

Note: The above list is not exhaustive and relevant proposals (having high merit) aligned with the objectives of the call and based on other high value cash crops of economic importance of the country may also be submitted under the call.

3. Priority Areas:

i) Varietal development: Development of new crop varieties where improved lines/ proof of concept are already available to address following challenges:

- Biotic stress (resistance to pests, pathogens, nematodes, parasites, weeds, etc.)
- Abiotic stress (drought, salinity, heat, flooding, nutrient stress, etc.)
- Resource Use efficiency
- Improved quality (aroma, pungency, essential oil content, fibre etc.) post harvest processing traits
- Yield

ii) Improvement of Nutritional and quality traits of crops: Enhancing the nutritional content and quality attributes of crops is a critical gap in current crop improvement programs, and efforts in this area should focus on promoting human health, strengthening food security, and increasing market value of the crops. This may be achieved encompassing:

- Enhancing levels of micronutrients, vitamins, proteins, quality fatty acids, bioactive compounds and reducing levels of anti-nutrients.

- Improvement of food quality traits such as taste, aroma, texture, size, and appearance of spice produce.

iii) Post harvest interventions:

Interventions that enhance shelf life of high valued cash crops; Biocontrol agents and Bio-preservatives to reduce spoilage and decay without use of harmful chemicals.

iv) Processing traits:

- Altering chemical composition (such as starch content, sugar levels, oil content, protein content, fibre quality and moisture levels) of crops for efficient industrial processing.

3. Key requirements for the proposals under the new call:

i) Proposals with demonstrated leads and a clear proof-of-concept will only be considered.

ii) Proposals of exceptional quality leading to thorough execution of the priority areas and likely to deliver after the completion of the project will be preferred.

iii) The proposal should have clear objectives, rationale, clearly specified deliverables and a detailed work plan as well as complementarity in case of network proposals.

iv) A proposal with a comprehensive approach aligned the defined thematic areas will be preferred.

4. Eligibility Criteria for Proposal Submission

a) This call for proposal is open to investigators from institutions eligible for Govt. funding. The research institutions must be recognized by DSIR as a Scientific and Industrial Research Organization (SIRO).

b) Any Indian National holding a regular position in any Indian academic and scientific research institutions (Government/Private) either on their own or in collaboration may apply.

c) Private Profit making agencies/ Industries/ Start-ups are **NOT** eligible to receive DBT grants. However, they may participate in the study proposed without financial support from DBT or can be part of proposal through their own funding contribution.

d) Private institutions/ NGOs should have proof of registration at 'NGO DARPAN' of NITI Aayog (http://ngodarpan.gov.in/), Certificate of registration under Society Registration Act, Organization's Memorandum of Association, Organization's Articles of Association, Valid DSIR-SIRO certificate/ DSIR in-house R&D recognition certificate (as applicable), and Duly audited account statements for the past three successive years.

e) PI who has ongoing DBT-funded projects with a cumulative funding of Rs 20 Crore or more (wherever he/she is receiving funds as PI or Co-PI) is **ineligible** to submit new grant application.

f) There should be at least one co-investigator from each participating institute and either one of the PI or Co-PI should have remaining service in co-terminus to the duration of the project.

g) The extant provisions/rules of funding as applicable to extramural projects funded by the Department shall apply to the proposals/projects received under this call.

h) Any collaborative/network proposal must clearly define the role of each collaborator. The role of a collaborator must be complementary in nature. Network proposals will be given preference.

i) Investigator(s) having a track record for technology development will be preferred.

5. Financial Support

Funding procedures and eligible costs are subject to prevailing extant guidelines of DBT. Apart from the terms and conditions of the grant, the additional condition for this call is as follows -

a) DBT will provide the financial support only to academic and scientific research institutions, however, a research institution may collaborate with industry to develop a product. If an industry is involved, a copy of an IPR sharing certificate or any formal arrangement may be submitted along with the proposal. DBT Intellectual Property Guidelines 2023 shall be applicable.

b) The duration of support shall be upto three years.

c) The maximum Budgetary limit for the proposals received under the call is Rs 2.5 Crore (individual) Rs 10 Crore for (collaborative) and Rs 15 Crore for (network).

6. Mandatory Requirements

Once the proposal is recommended for support, thereafter submission of necessary documents (Declaration/Certificate, check list from the Head of the institution, Applicable clearances etc) by the PI is must for further processing for receiving the grants.

b) All data, generated in the project, will have to be made available at IBDC in accordance with the Biotech-PRIDE guidelines.

7. Proposal Format & Submission

An electronic copy of a proposal needs to be submitted through DBT's online proposal submission system (http://dbtepromis.nic.in/login.aspx) under the Call for Proposals of 'Agriculture Biotechnology' Program. The following may be noted –

a) Incomplete or incorrectly filled up proposal with lack of essential information/documents will be summarily rejected.

b) Proposal submitted through e-mail will not be entertained.

c) Pre requisite information/documents for submission of proposal:

Submission of proper declarations, undertakings, forwarding letters as well as following information/documents are mandatory during the submission of proposal in the designated Web Portal (ePromis) and non-submission of these information/ documents shall be considered as incomplete submission. In cases, where incorrect/ incomplete documents are submitted in designated web portal (ePromis), the proposal may be summarily rejected.

i. Investigators need to compulsorily provide complete details of ongoing and completed projects supported by DBT/other funding agencies.

ii. In case of Government agency, submission of information/undertakings about Zero Balance Subsidiary Account (ZBSA) in ICICI bank mapped with Bio-RIDE Scheme of DBT (mandate form to this effect), no pending utilization certificate, compliance of data submission in IBDC portal, Non-availability/ justification of requested equipment, quotations for equipment, mandate form are mandatory.*

iii. In case of Non-Government Not for Profit Institutes, in addition to the above mentioned documents, they shall also need to submit proof of establishment under Indian Statute; copy of certificate of Registration (Societies Registration Act/ Indian Trust Act etc.; Memorandum of Association; Details of registration in NITI Aayog 'NPO Darpan Portal' Copy of DSIR-SIRO certificate, as applicable; and Annual Report along with Audited Account Statements for the last three financial years.

iv. The investigator, (whether as PI/Co-PI/Co-Investigator) receiving the funds, is permitted to submit only one full length proposal. In the event multiple proposals are submitted, only the first complete submission will be considered for evaluation, the other proposal(s) will be summarily rejected during the administrative scrutiny. It is the responsibility of the Investigator to propose for funds through single proposal. Reconsideration request of rejected proposals based on above mentioned reason will NOT be entertained.

*Any other documents as per extant norms.

8. Link for Submission of Proposals

http://dbtepromis.nic.in/login.aspx
Note: Investigators are requested to submit proposal well in advance before reaching last date of submission since there will be no extension of the last date for submission of the proposals.

For any information, kindly contact:

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