

कसल सुधार विभाग
आयरी नं० 392
दिनांक 17/06/2010

RPF-I ✓

DIC
PMER

PROFORMA FOR SUBMISSION OF RESEARCH PROJECTS

PART-I : GENERAL INFORMATION

- 200 Project Code
- 2001 Institute Code No. C.I. 6.7
- 2002 ICAR Code No.
- 201 Name of Institute and Division
- 2011 Name & Address of Institute INDIAN GRASSLAND & FODDER RESEARCH INSTITUTE,
JHANSI-284003
- 2012 Name of Division/Section Division of Crop Improvement
- 2013 Location of Project C.I. Division, I. G. F. R. I., Jhansi
- 202 Project Title Identification of molecular markers for apomixis/sexuality in Cenchrus ciliaris.
- 203 Priority Area
- 2031 Research Approach : Applied Res. Basic Res. Process/or Technology Development Transfer of Technology
- | | | | |
|----|------|----|----|
| 01 | ✓ 02 | 03 | 04 |
|----|------|----|----|
- 204 Specific Area Plant Biotechnology
- 2041 Previous Project/Projects in this specific area : ICAR AP Cess Fund Project (1998-2001)
(Year, type of funding, cost etc.) RS. 1217406/= only
- 205 Duration Five years
- 2051 Date of start November, 2007
- 2052 Likely date of completion November, 2012
- 206 Total cost of the Project Rs 2051000/= only (Including salaries and wages Rs 1636000/= Aprx. plus consumables and Miscellaneous costs Rs 415000/=)
- 2061 Foreign Exchange Component (if any) - Nil
- 207 Project Profile Summary
- Please see Annexure-I
- 208 Key words Apomixis, molecular markers, SSR, RAPD.

PART-II : INVESTIGATOR PROFILE

- 210 Principal Investigator :
- 2101 Name : M. G. GUPTA
- 2102 Designation : Principal Scientist
- 2103 Division/Section : Division of Crop Improvement
- 2104 Location : C.I. Division, I. G. F. R. I., Jhansi
- 2105 Institute Address : Indian Grassland and Fodder Research Institute,
Gwalior-Road, Jhansi-284003.



- 211 Co-investigator : SURESH KUMAR
- 2111 Name : SURESH KUMAR
- 2112 Designation : Scientist Senior Scale
- 2113 Division/Section : Division of Crop Improvement
- 2114 Location : C.I. Division, I. G. F. R. I., Jhansi
- 2115 Institute Address : Indian Grassland and Fodder Research Institute,
Gwalior-Road, Jhansi-284003.
- 212 Co-investigator : A. CHANDRA (Association From second year onwards
in the Project).
- 2121 Name : A. CHANDRA
- 2122 Designation : Senior Scientist
- 2123 Division/Section : Division of Crop Improvement
- 2124 Location : C.I. Division, I. G. F. R. I., Jhansi
- 2125 Institute Address : Indian Grassland and Fodder Research Institute,
Gwalior-Road, Jhansi -
- 213 Co-investigator : G. P. SHUKLA
- 2131 Name : G. P. SHUKLA
- 2132 Designation : Principal Scientist & Head (C.I. Division)
- 2133 Division/Section : Division of Crop Improvement
- 2134 Location : C.I. Division, I. G. F. R. I., Jhansi.
- 2135 Institute Address : Indian Grassland and Fodder Research Institute,
Gwalior-Road, Jhansi-284003.

PART-III : TECHNICAL DETAILS

220 Introduction and objectives :

2201 Origin of the Project :
(Problem identification)

2202 Definition of Problem :

2203 Immediate objectives :



Please see Annexure-II

2374 Equipment to be imported

2375 Justification for import

238 Additional Infrastructural Facilities (if Needed)

2381 Works

2382 Land (Sq meter)

2383 Animals

239 Financing organisation

If financed by an organization other than the Institute, then give the following information :

(a) Name of financing organization :

(b) Title of the project :
(if the project forms a part of a larger project)

PART—V : DECLARATION

This is to certify that

- the Research work proposed in the scheme/project does not in any way duplicate the work already done or being carried out in the Institute on the subject.
- the same project has been/has not been submitted to any other agency(ies) for financial support (if already submitted identify Project & Agency).
- the Investigator/co-investigators have been fully consulted in the development of project and have fully undertaken the responsibility to carry out the programme as per the technical programme.

Mengle
Signature of the Project Investigator

- Co-investigators
1. *Syrah Kumar*
 2. *[Signature]*
 3. *[Signature]*

Signature & Comments of the Head of the Division/Section
Research project proposal is ~~not~~ O.K.

विभागाध्यक्ष
HEAD OF DIVISION
फसल सुधार विभाग
CROP IMPROVEMENT DIVISION
भारतीय चरागाह एवं चारा अनुसंधान संस्थान, झाँसी
Indian Grassland And Fodder Research Institute, Jhansi

Signature & Comments of the Joint Director (Research)

Signature & Comments of the Director
le ad...

- Transferability of rice/Pennisetum SSR primers to C. ciliaris
- Identification, confirmation and isolation of sexual/apomictic specific RAPD fragments.
- Identification of SSR markers linked to apomixis/sexuality in C. ciliaris.
- Cloning and sequencing of RAPD fragments.
- Conversion of associated RAPD fragments into SSR marker(s).
- Validation of the developed SCAR marker(s) in a sub-set of population.

2.14. Time Schedule of Activities (Milestones):

Activity	Year	I	II	III	IV	V
- Embryological characterization for apomixis/sexuality.		✓	✓	✓		
- Genomic DNA isolation		✓	✓	✓		
- PCR amplification of DNA using random primers and RAPD analysis			✓	✓	✓	
- Identification of SSR markers linked to apomixis/sexuality in <u>C. ciliaris</u> .				✓	✓	
- Cloning and sequencing of RAPD fragments and conversion into SCAR marker				✓	✓	✓
- Validation of developed SCAR marker(s)					✓	✓

(contd. ... Pg. 3)



22.15. Annual Targets for Each Activity:

I year: - Embryological characterization for apomixis/sexuality in F₂ mapping population of C. ciliaris.
- Genomic DNA isolation from plants of F₂ mapping population of C. ciliaris.

II year: - Identification and confirmation of sexual and apomictic types through embryological studies in C. ciliaris.
- Genomic DNA isolation from # plants of F₂ mapping population of C. ciliaris
- PCR amplification of DNA samples using random primers and RAPD analysis using random primers.

III year: - Embryo sac analysis for confirmation of sexual/apomictic plants in F₂ mapping population of C. ciliaris
- Genomic DNA isolation from plants of F₂ mapping population of C. ciliaris.
- PCR amplification of DNA using random oligo primers and RAPD analysis
- Transferability of SSR primers in C. ciliaris and their identification linked to apomixis/sexuality
- Cloning and sequencing of RAPD fragments and conversion into SCAR marker(s).

IV year - PCR amplification of DNA using random primers.
- Identification, confirmation and isolation of sexual/apomictic RAPD fragments and conversion into SCAR marker(s).
- Identification of SSR markers linked to apomixis/sexuality in C. ciliaris.

V year - Cloning and sequencing of RAPD fragments
- Conversion of associated RAPD fragments into SCAR marker(s).
- Validation of developed SCAR marker(s).