

PROFORMA FOR SUBMISSION OF RESEARCH PROJECTS

PART-I : GENERAL INFORMATION

- 200 Project Code
- 2001 Institute Code No. IGFRI - C.I. 8'23
- 2002 ICAR Code No. Nil
- 201 Name of Institute and Division
- 2011 Name & Address of Institute INDIAN GRASSLAND & FODDER RESEARCH INSTITUTE,
JHANSI-284003
- 2012 Name of Division/Section CROP IMPROVEMENT DIVISION
- 2013 Location of Project PLANT PROTECTION.
- 202 Project Title Exploration of resident potential antagonistic
mycoflora in Berseem root and stem rot pathosystem
and development of suitable formulation for
disease management.
- 203 Priority Area
- 2031 Research Approach :
- | Applied Res. | Basic Res. | Process/or Technology
Development | Transfer of
Technology |
|--------------|------------|--------------------------------------|---------------------------|
| 01 | 02 | 03 | 04 |
| | | | |
- 204 Specific Area
- 2041 Previous Project/Projects in this specific area :
(Year, type of funding, cost etc.)
- 205 Duration 03 years
- 2051 Date of start 2008-9
- 2052 Likely date of completion 2012
- 206 Total cost of the Project
- 2061 Foreign Exchange Component (if any) Nil
- 207 Project Profile Summary

Annexure.

- 208 Key words Exploration, Antagonistic, Mycoflora, Formulation.

PART-II : INVESTIGATOR PROFILE

- 210 Principal Investigator :
- 2101 Name : R. B. BHASKAR
- 2102 Designation : Sr. Scientist (Plant Pathology)
- 2103 Division/Section : Crop Improvement Div.
- 2104 Location : Plant Protection.
- 2105 Institute Address : I.C.F.R.I. Jhansi

211 Co-investigator : Dr. N. Hasan
2111 Name :
2112 Designation : P.S. (Nematology)
2113 Division/Section : C.I. Div.
2114 Location : P.D. unit
2115 Institute Address : I.G.F.R. Thauri

212 Co-investigator : Dr. K.C. Pandey
2121 Name :
2122 Designation : P.S. (Entomology)
2123 Division/Section : C.I. Div.
2124 Location : P.D. unit
2125 Institute Address : I.G.F.R. Thauri

213 Co-investigator : Dr. K.K. Pandey
2131 Name :
2132 Designation : P.S. (Pr. Pathology)
2133 Division/Section : C.I. Div.
2134 Location : P.D. unit
2135 Institute Address : I.G.F.R. Thauri

PART—III : TECHNICAL DETAILS

220 Introduction and objectives :

2201 Origin of the Project :
(Problem identification) Annexure

2202 Definition of Problem : Annexure

2203 Immediate objectives : Annexure

2204 Long term objectives :

Annexure

2205 Review of Status of Research in the Subject :

a. International Status :

Annexure.

b. National Status :

- Annexure

221 Project Technical Profile :

2211 Organisation of Work Elements (for each objective and participating Investigator giving man-months involved)

2212 Methodology :

Annexure.

2213 Plan of Action :

Annexure.

2214 Time Schedule of Activities (Milestones) :

- Annexure

2215 Annual Targets for Each Activity : *Annexure*

2216 Estimated manmonths
a. Scientific *- 24*
b. Technical *- 12*
c. Supporting *- 12*

222 Proposed Research Details

2221 Importance of the Proposed Project (gaps in knowledge/
products/Process technology) to the Institute mandate.

2222 Questions Attempted to be Answered : *- Between rot disease management.*

2223 Anticipated Process/Products/Technology/Knowledge Expected
to be Evolved by Pursuing the Project : *Nil*

2224 Practical Utility of Anticipated Results of the Project :

a. Immediate benefits. *Disease management.*

b. Medium term benefits. *-*

c. Long term benefits. *Management of berseem rot diseases
will result into enhanced fodder production.*

2225 Expertise Available with Investigatory Group/Institute. *Yes.*

2226 Expertise (if any) to be Obtained by Investigatory Group from Out side the Institute.

a. Within Country

nil

b. Outside Country

nil

**PART—IV : BUDGET ESTIMATES
(Summary)**

230	Budget Summary (Recurring)	Year (1)	Year (2)	Year (3)	Year (4)	Total
2301	Salaries :					
	i) Scientific					
	ii) Technical					
	iii) Supporting					
	iv) Wages					
	Sub Total					
2302	Consumables :					
	i) Chemicals					
	ii) Glasswares					
	iii) Others					
	Sub Total					
2303	Travel					
2304	Miscellaneous (Other costs) :					
2305	Sub Total : (Recurring)					
231	Non-Recurring (Equipments)					
	1.					
	2.					
	3.					
	4.					
232	Total (230 and 231)					
233	Salaries/Wages :	Year (1)	Year (2)	Year (3)		Total
	Designation with Pay Scale :					
	1.					
	2.					
	3.					

2331 Justification (for technical/Wages/labour in terms of work content) :

234 Consumables :

Budget

Item	Year (1)	Year (2)	Year (3)	Total
1.				
2.				
3.				
4.				

2341 Justification :

235 Travel :	Year (1)	Year (2)	Year (3)	Total
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2351 Justification

236 Other costs/Miscellaneous :	Year (1)	Year (2)	Year (3)	Total
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2361 Field preparation/planting/
harvesting (Man days/costs)

2362 Inter cultivation & dressing
(Man days/costs)

2363 Animal maintenance

2364 Any other items

2365 Justification for above

237 Equipment :

2371 Equipments Already Available to be Used in Project :

- 1.
- 2.
- 3.

2372 Equipments to be Purchased with Costs :
(already in Plan Document)

- 1.
- 2.
- 3.

2373 Justification for each additional equipment

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.

Signature of the Project Investigator

Co-investigators

- 1.
- 2.
- 3.

Signature & Comments of the Head
of the Division/Section

Signature & Comments of the
Joint Director (Research)

we may agree to post-facto approval!

*me 7/14/13
1/c PNE*

Project Title- Exploration of resident potential antagonistic mycoflora in Berseem root and stem rot pathosystem and development of suitable formulation for disease management.

(R.B.Bhaskar, N.Hasan, K.C.Pandey, K.K.Pandey and A.K.Rai)

Review-

- Root and stem rot of Berseem are most important diseases responsible for heavy losses in its potential yield (Bhaskar & Ahmad, 1989; Bhaskar et.al., 2003; Hasan & Bhaskar, 2004).
- Biological suppression of plant diseases has been promoted as a means to achieve improved sustainable crop production systems that are less relevant on chemical input (Adams, 1990; Shishido et.al., 2005).
- Bio-pesticides responsible for preventing the disease infection in crops as antagonist to pathogen or stimulator to natural defense have become as important to agriculture as bio-fertilizers (Dr. Mangala Rai, ICAR newsletter).
- Micro-organisms which grow in the rhizosphere are ideal for use as bio-control agent since the rhizosphere provides the frontline defense for root against attack by pathogens (Waller, 1988). Joseph and Sivaprasad(2000) also reported that native isolate of bio-control agent were better adapted and suited for the management of rhizome rot of ginger. Contrary to it Van Gundy (1985) reported that antagonism to new introduction through the soil profile is for limited period.
- Various types of formulations have been reported by various workers for example Ganeshan et.al. (2000) reported that *Trichoderma harzianum* isolated from soil being used as an effective bio-control agent in the management of various seed and soil borne diseases. This is being mass multiplied on coffee husk in Karnataka. In Maharashtra fermenter and starter medium are being used for mass multiplication of *Trichoderma harzianum* and *T.viride* (Deokar & Sawant, 2004).
- Since exploration, identification and screening of the bio-agents constitute the stepping stone for sound framework evolved for development of viable bio-intensive disease management strategies, the present project is proposed.

Objectives-

- Isolation and purification of rhizosphere mycoflora and their in vitro, in vivo testing of antagonistic potential.
- Identification of suitable substrate for mass multiplication and developing formulations.
- To determine the soil properties in relation to the application of formulations.

Aims-

- To provide crop specific, region specific, resources specific and farm specific technology for disease management

Goals-

- Disease management with the principal aim of improving the production, soil health and sustainability.

Technical Program-

- Sample collection from Berseem growing regions (Ludhiana, Hisar, Palampur and Jhansi).
- Isolation and purification of various mycoflora.
- Antagonistic test under the laboratory and pot culture.
- Evaluation of organic substrates (FYM, Poultry manure, Wormi compst, Tree litter, Neem cake, kitchen wastes and sawdust) for mass multiplication of bio-control agent.
- On farm testing of the formulations and soil properties.

Technical Program 2008-09

- Sample collection from different locations
- Isolation of mycoflora from the samples