

Evaluative Report of the Department

1. Name of the Department : **Biochemistry, Faculty of Science, B.H.U.**
2. Year of establishment : **1984**
3. Is the Department part of a School/Faculty of the university? **Part of Faculty of Science**
4. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) : **Ph. D. & M.Sc.(Biochemistry)**
5. Interdisciplinary courses and departments involved : **N.A.**
6. Courses in collaboration with other universities, industries, foreign institutions, etc. : **N.A.**
7. Details of programmes discontinued, if any, with reasons: **N.A.**
8. Examination System: Annual/ Semester/Choice Based Credit System : **Semester based Credit System**
9. Participation of the department in the courses offered by other departments: **Yes**
10. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

Name of the post	Sanctioned	Filled
Professor	01	01
Associate Professors	02	02
Asst. Professors	08	05

11. Faculty profile with name, qualification, designation and specialisation experience and research under guidance.

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years
Dr. R.S. Dubey	Ph.D.	Professor & Head	StressMetabolism in Plants	34	7
Dr. H. P. Pandey	Ph.D.	Professor	Clinical Biochemistry	37	8

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years
Dr.(Mrs.)S.Rathaur	Ph.D.	Professor	Parasitic Immunobiology	31	7
Dr. Om Prakash	Ph.D.	Professor	Enzymology	33	4
Dr. P. K. Srivastava	Ph.D.	Associate Professor	Enzymology	34	2
Dr. S. P. Singh	Ph.D.	Associate Professor	Neurobiology	04	-
Dr. S. Srikrishna	Ph.D.	Assistant Professor	Molecular Biology & Immunology	15	-
Dr. R. K. Singh	Ph.D.	Assistant Professor	Parasite Immunology	07	3

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors-**Nil**

13. Percentage of classes taken by temporary faculty-programme-wise information-**Nil**

14. Programme-wise Student Teacher Ratio **M.Sc. 7:1; Ph.D. 6:1**

15. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Name of the Post	Sanctioned	Filled	Vacant
Senior Assistant	01	01	Nil
Junior Clerk	01	--	01
S.P.A.	01	01	Nil
S.L.A.	01	01	Nil
J.L.A.	01	01	Nil
Lab Attdt.	02	02	Nil
Peon	01	01	Nil

16. Research thrust areas recognized by funding agencies:

1. Stress Metabolism in Plants

2. Parasitic Immunology

3. Translational Neurobiology

4. Enzymology & Enzyme Technology

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies and grants received project-wise.

National Funding Agencies

Name of the Faculty	Name of the Funding agency	Year of Funding	Grant Received	Remarks
Prof. R. S. Dubey	UGC, New Delhi	April 2013-March 2016	19.0 Lakhs	PI
Dr. S. P. Singh	DST, New Delhi	Jun 2012-May 2015	32.0 Lakhs	PI
	CSIR, New Delhi	Mar 2012- Feb 2015	20.0 Lakhs	PI
Dr. S. Srikrishna	DBT, New Delhi	August 2013-July 2016	40.0 Lakhs	PI

International Funding Agencies

Name of the Faculty	Name of the Funding agency	Year of Funding	Grant Received	Remarks
Prof. S. Rathaur	Alexander Von Humboldt, Germany	June 2010- December 2013	49,000 Euros	PI

18. Inter-institutional collaborative projects and grants received
- All India collaboration: Nil
 - International: 01 (Same as above)
19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, etc.; total grants received. Nil
20. Research facility / centre with
- state recognition : Nil
 - national recognition : Nil
 - international recognition : Nil
21. Special research laboratories sponsored by / created by industry or corporate bodies : Nil

22. Publications:

- * Number of papers published in peer reviewed journals (national / international) National: **08** International: **144**
- * Monographs : **Nil**
- * Chapters in Books: **10**
- * Edited Books : **Nil**
- * Books with ISBN with details of publishers:): **01**
- * Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
- * Citation Index - range / average : **Total citations during last 5 years: 2750**
- * SNIP
- * SJR
- * Impact Factor - range / average : **1-6**
- * h-index : **5-23**

23. Details of patents and income generated : **Nil**

24. Areas of consultancy and income generated : **Nil**

25. Faculty selected nationally/ internationally to visit other laboratories in India and abroad :

International: 1. Prof. S. Rathaur visited Prof. Eva Liebau at the Department of Zoo physiology, Muenster and Bernhard Nocht. Institute for tropical medicine, Hamburg under DAAD Invitation , Germany (Aug 2009)

2. Attended Keystone Symposia in Seattle Washington, USA (October 2010) funded by Bill Melinda Gates Foundation

National:

1. Prof. S. Rathaur visited National Innovation Foundation, Ahmedabad, Gujarat, India. (2011)

2. Dr. S. Srikrishna selected for visiting National Centre for Biological Sciences (NCBS)- TIFR, Bangalore in October 2012.

26. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other

Prof. R. S. Dubey served as Vice-Chancellor of Guru Ghasidas University, Bilaspur, Chhattishgarh during 2008-2009

(please specify): **Prof. R. S. Dubey served in the following National Committees:**

- (i) Served as **Member Expert Committee of UGC** for Innovation Programmes and Major Research Projects in the discipline of Biochemistry during 2011-2012.
- (ii) Served as **MEMBER** of the first **ACADEMIC COUNCIL** of **CENTRAL UNIVERSITY OF RAJASTHAN** for a period of 3 years during 2009-2012, being nominated by Govt. of India, Ministry of Human Resource Development.
- (iii). Served as **MEMBER** of the first **ACADEMIC COUNCIL** of **CENTRAL UNIVERSITY OF HIMACHAL PRADESH** for a period of 3 years during 2010-2013, being nominated by Govt. of India, Ministry of Human Resource Development.
- (iv). Served as **Member, Court, North Eastern Hill University Shillong**, being nominated by the President of India for a period of 3 years during 2009-2012.
- (v). Serving as Member, Executive Committee of Indian Society of Agricultural Biochemists
- (vi) Serving as Member, Editorial Board for Indian Journal of Agricultural Biochemistry

27. Faculty recharging strategies UGC/ASC/Refresher/orientation programs, workshops, training programs and similar programs). **Nil**

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects : **Nil**
- percentage of students doing projects in collaboration with other universities / industry / institute : **Nil**

29. Awards / recognitions received at the national and international level by

- Faculty: **International Level**

1. Awarded **Bill Melinda Gates Travel grant** to attend Keystone Symposium.

National Level

1. Received “**Excellence Award**” by Indian Society of Agricultural Biochemists in the year 2010.

2. Awarded **FELLOWSHIP OF BIOTECH RESEARCH SOCIETY (FBRS) of India** at 7th Convention of the Society held at Madurai Kamraj University during Nov. 12-14, 2010.

3. Awarded **FELLOWSHIP OF BIOVED RESEARCH SOCIETY of India** at its 13th Convention of the Society held at Allahabad University during February 19-20, 2011.

- Doctoral / post doctoral fellows :
- Students

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

Organized an International Conference on Role of Biomolecules in Food Security and Health Improvement (ICBFH-2010), February 17-20, 2010

31. Code of ethics for research followed by the departments

32. Student profile course-wise:

Name of the Course (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
P.G. (M.Sc.)	4500	58	42	100%	100%
Ph.D.	150	73	75		

33. Diversity of students

Name of the Course (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
P.G. (M.Sc.)	30	35	30	5
Ph.D.	10	53	37	-

Name of the Course (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries

34. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Civil Services (IFS)	01
CSIR-JRF	10
UGC-JRF	15
NET-LS	40
GATE	30

35. Student progression

Student progression	Percentage against enrolled
UG to PG	Nil
PG to M.Phil.	NA
PG to Ph.D.	31
Ph.D. to Post-Doctoral	15
Employed <ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	NA
Entrepreneurs	

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	87.5
from other universities within the State	0
from universities from other States	12.5
from universities outside the country	NA

37. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period :

01

38. Present details of infrastructural facilities with regard to
- a) Library **01**
 - b) Internet facilities for staff and students
 - c) Total number of class rooms : 02
 - d) Class rooms with ICT facility : 01
 - e) Students' laboratories : 02
 - f) Research laboratories : 06
39. List of doctoral, post-doctoral students and Research Associates
- a) from the host university : 20
 - b) from other universities : 40
40. Number of post graduate students getting financial assistance from the university.
41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. **NA**
42. Does the department obtain feedback from :
- a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **Yes, the department arranges periodical meetings to revise curriculum and teaching learning evaluation.**
 - b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
 - c. alumni and employers on the programmes offered and how does the department utilize the feedback? : **During alumni meet, the department arranges interaction of the faculty members with eminent alumni and feedback is appropriately utilized.**
43. List the distinguished alumni of the department (maximum 10)
- Prof. O. P. Malhotra, Richmond, VA, USA
- Prof. Debi Sarkar, Biochemistry, DU South campus, New Delhi
- Prof. Nirbhay Kumar, University of Tulane, USA
- Prof. Satya Prakash, McGill University, Canada
- Prof. Siyaram Pandey, University of Windsor, Canada
- Prof. Kulbhushan Tikoo, NIPER, Chandigarh

Prof. K. K. Singh, New York Medical Centre, NYU, USA

Prof. Rajendra Aggarwal, Wordsworth centre, Albyne, New York

Prof. Lahiri Majumdar, Anderson cancer centre, Texas, USA

Prof. O. P. Mishra, University of Pennsylvania, USA

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts. **NA**
45. List the teaching methods adopted by the faculty for different programmes.
Black boards, Audio-visual aids including multimedia projectors are routinely used by all the faculty members for teaching programmes in the department.
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
47. Highlight the participation of students and faculty in extension activities.
48. Give details of “beyond syllabus scholarly activities” of the department.
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
51. Future plans of the department.

The department runs 2 yrs (4 semester) teaching programme leading to M.Sc. (Biochemistry) degree.

The department plans to focus its research activities in the following areas

1. Enzyme based tools and biosensors as diagnostics:

Development of enzyme based techniques, biosensors for clinical and industrial applications.

2. Development of therapeutics for neurodegenerative and endocrine disorders: Study of molecular and biochemical mechanisms underlying neurodegenerative disorders like Parkinson’s, Alzheimer’s and Endocrine diseases using transgenic Drosophila and mouse model systems using RNAi mediated techniques. To develop suitable therapeutic tools using herbal formulations.

3. Development of diagnostic and therapeutic tools for tropical diseases:

To develop cost effective diagnostic, prognostic and therapeutic tools (vaccines and drug targets) for the tropical diseases Filariasis, Kala-azar as well as for cancer and diseases related to dietary habits.

4. Identification of stress tolerance mechanisms in crop plants:

Constitutive and inducible tolerance mechanisms associated with toxicities of the metals Cd, Pb, As, Al, B, involving cell signaling, metabolic pathways, antioxidative defenses, metabolites, novel proteins, will be identified in important crop plants such as rice using modern tools of genomics and proteomics. Important enzyme/protein targets associated with tolerance will be identified which would serve as potential candidates for producing stress tolerant crop plants.

52. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

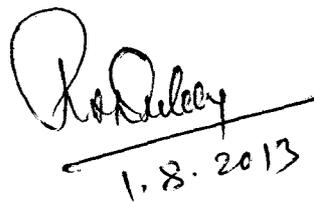
1. Department is engaged in International and International collaborators for research in areas such as Parasitic Immunobiology, Stress Biology and Neurobiology
2. Faculty members of the department have served in various capacities in national level committees like Academic Councils of many Universities.
3. Faculty members of the department have been able to bring lot of extramural research funding from various national & international agencies such as DBT, DST, ICMR, UGC, CSIR, WHO and Alexander von Humboldt Foundation, Germany, etc.
4. Faculty members of the department have been regularly publishing research papers in internationally peer reviewed high impact factor journals
5. Some of the faculty members are highly cited authors, with individual citations exceeding 3400, H- index 28 and i-10 index 50.

Weaknesses:

1. Department is in acute shortage of space

Opportunities and Challenges

To meet the knowledge challenges of the 21st century, the department needs much more space and state of the art research laboratories to pursue quality teaching and research in different areas of Biochemistry.


1.8.2013