DEPARTMENT OF ANIMAL PRODUCTION
COLLEGE OF AGRICULTURE,
NAVSARI AGRICULTURAL UNIVERSITY
CAMPUS BHARUCH

1. INTRODUCTION:

The Department of Animal Science was established in 2012 in the College of Agriculture, Bharuch. The department caters to the teaching requirements at undergraduate level as well as at polytechnic level to the students of College of Agriculture as well as to the students of Polytechnic in Agriculture, Bharuch. The constructions of well equipped laboratories are under construction for undergraduate and diploma teaching programs effectively. The department is being lead by Dr. Brishketu Kumar, Assistant Professor-cum-Head. The department is actively involved in teaching, research as well as in extension activities.

2. OBJECTIVES:

1. To upgrade the knowledge, skill and different principles in education and research in the field ofAnimal science.
2. To impart the education at Polytechnic in Agriculture, U.G. and P.G. level.
3. To develop sustainable and economical animal husbandry practices for different species of livestock i.e. cattle, buffalo, sheep, goat and poultry.
4. To produce trained manpower in latest husbandry practices for different livestock species.
5. To advise farmers to feed balanced and quality ration to livestock and poultry and to economize dairy and poultry farming.

3. MAJOR ACTIVITIES:

1. Teaching:

(a) Under graduate: Total 02 courses with 5 (3+2) credit hours are being taught from first to eight semesters (5^{th} and 6^{th}semester) B.Sc. (Hons.) in Agriculture.

(b) Post graduate teaching: Depending upon the course offered

(c) Other academic activities: Diploma in Agriculture

Total 02 courses with 5 (3+2) credit hours are being taught from first to sixth semesters (2^{nd} and 5^{th}semester) Diploma in Agriculture.

2. Research:

As a Co-PI 2 research projects has been completed while as a PI 1 research project of 2 years duration is going on.

3. Extension:

- Department is imparting training to the extension workers, field staffs and farmers of various NGOsto develop their skills for improving animal husbandry practices.
- Department staff is also actively participating in Krushi mela, Khedut Din, Khedut Shibir, Seminarand other programme time to time.
- This department is also guiding farmers and general public through publishing popular articles in various monthly and quarterly magazines on various aspects of animal husbandry practices.

Academic Achievements And Awards

- Secured B.V.Sc. admission through the National level examination conducted by (ICAR) 1999 with All India Rank (283), New Delhi - 110012.
- Secured M.V.Sc. admission through the National level examination for JRF (animal Science) conducted by ICAR 2005 with All India Rank (30) New Delhi - 110012.
- **Junior Research Fellowship (JRF) -** Awarded by Indian Council of Agricultural Research for the award of M.V.Sc. Degree from 2005-2007 in the subject of Animal Nutrition.
- **ICAR-SRF (Senior Research Fellowship)** – Qualified in 2009.
- **First rank in Ph.D entrance** in NDRI, Karnal in 2008-2009 in Animal Nutrition.
- **ICAR-NET (National Eligibility Test) for Lecturership** – Qualified in 2009 and 2010 in Animal Physiology and Nutrition.

Teaching/Work Experiences

- Presently working as Assistant Professor (Animal Nutrition) in the Department of Animal Production at College of Agriculture, Navsari Agricultural University, Maktampur, Bharuch-392012, Gujarat, India since **10th of May 2013**.
- Previously worked as Assistant Professor (Animal Nutrition) at Khalsa College of Veterinary & Animal Sciences, Amritsar, Punjab, India from 04.11.2011 to 30.04.2013.

Designation of the post	***Period**			**Name of Institution/ Department**
	From	**To**	**Total Y…….M……D**	
Assistant Professor	10/05/2013	10/05/2022 (continuing)	**9….00…00**	Department of Animal Science, College of Agriculture, NAU, Bharuch-392012, Gujarat, India.
Assistant Professor	04/11/2011	30/4/2013	**1….5…26**	Department of Animal Nutrition, Khalsa College of Veterinary & Animal Sciences, Amritsar, Punjab, India.
			Grand Total: 10 years 5 months and 26 days	

4. MAJOR ACHIVEMENTS

1. Teaching:

(a) Under Graduate, Diploma and Post Graduate:

To make the theory and practical note books for U.G. courses are being taught from first to eight semesters B.Sc. (Hons.) in Agriculture while Diploma courses are taught from first to sixth semesters.

A. TEACHING ACTIVITIES

Courses taught in B.Sc. (Agriculture), Polytechnic in Agriculture (PIA), M.V.Sc and Ph.D (Animal Nutrition) respectively

B.Sc. in Agriculture				
Sr. No.	**Course Title**	**Course No.**	**Class**	**Year**
1	Livestock Production & Management	LPM 4.1	B.Sc	2014
2	Dairy Cattle & Buffalo Production & Management	LPM 5.2	B.Sc	2014
3	Livestock Production & Management	LPM 4.1	B.Sc	2015
4	Dairy Cattle & Buffalo Production & Management	LPM 5.2	B.Sc	2015
5	Livestock Production & Management	LPM 4.1	B.Sc	2016
6	Dairy Cattle & Buffalo Production & Management	LPM 5.2	B.Sc	2016
7	RAWE Orientation Course and On-Campus training	LPM 7.3	B.Sc	2016
8	Livestock Production & Management	LPM 4.1	B.Sc	2017
9	Dairy Cattle & Buffalo Production & Management	LPM 5.2	B.Sc	2017
10	RAWE Orientation Course and On-Campus training	LPM 7.3	B.Sc	2017
11	Livestock Production & Management	LPM 4.1	B.Sc	2018
12	Dairy Cattle & Buffalo Production & Management	LPM 5.2	B.Sc	2018
13	RAWE Orientation Course and On-Campus training	LPM 7.3	B.Sc	2018
14	Ruminant Production & Management	LPM 5.1	B.Sc	2019
15	Principles of Poultry Production & Management	LPM 6.2	B.Sc	2020
16	RAWE Orientation Course and On-Campus training	LPM 7.3	B.Sc	2020
17	Ruminant Production & Management	LPM 5.1	B.Sc	2020
18	Principles of Poultry Production & Management	LPM 6.2	B.Sc	2021
19	Ruminant Production & Management	LPM 5.1	B.Sc	2021
20	Principles of Poultry Production & Management	LPM 6.2	B.Sc	2022
Polytechnic in Agriculture (PIA)				
1	Dairy Cattle & Buffalo Production & Management	AH 212	PIA	2013
2	Livestock Trade, Fish and Poultry Marketing	AH 313	PIA	2013
3	Principles of Livestock and Poultry Production	LPM 2.1	PIA	2014
4	Dairy Cattle & Buffalo Production & Management	LPM 3.2	PIA	2014

5	Livestock Trade, Fish and Poultry Marketing	AH 313	PIA	2014
6	Principles of Livestock and Poultry Production	LPM 3.1	PIA	2015
7	Principles of Livestock and Poultry Production	LPM 2.1	PIA	2016
8	Dairy Cattle & Buffalo Production & Management	LPM 3.2	PIA	2016
9	Principles of Livestock and Poultry Production	LPM 2.1	PIA	2017
10	Dairy Cattle & Buffalo Production & Management	LPM 3.2	PIA	2017
11	Principles of Livestock and Poultry Production	LPM 2.1	PIA	2018
12	Principles of Livestock Production & Management	LPM 2.1	PIA	2019
13	Principles of Poultry Production & Management	LPM 5.2	PIA	2019
14	Principles of Poultry Production & Management	LPM 5.2	PIA	2019
15	Principles of Livestock Production & Management	LPM 2.1	PIA	2020
16	Principles of Poultry Production & Management	LPM 5.2	PIA	2020
17	Principles of Livestock Production & Management	LPM 2.1	PIA	2021
18	Principles of Poultry Production & Management	LPM 5.2	PIA	2021
19	Principles of Livestock Production & Management	LPM 2.1	PIA	2022
M.V.Sc and Ph.D (Animal Nutrition)				
1	Animal Nutrition: Energy and Protein	ANN 601	M.V.Sc.	2018
2	Advanced Techniques in Nutrition and Research	ANN 705	Ph.D	2018
3	New Feed Resources and Toxicants in Animal Feeding	ANN 709	Ph.D	2018
4	Nutrition and Rumen Fermentation	ANN 703	Ph.D	2018
5	Modern Concepts of Feeding Monogastric Animals	ANN 702	Ph.D	2019
6	New Feed Resources and Toxicants in Animal Feeding	ANN 709	Ph.D	2019
7	Animal Nutrition: Energy and Protein	ANN 601	M.V.Sc.	2019
8	Non-Ruminant Nutrition	ANN 606	M.V.Sc.	2019
9	Master's Seminar	ANN 691	M.V.Sc.	2019
10	Doctoral Seminar	ANN 791	Ph.D	2019
11	Feed Technology	ANN 603	M.V.Sc.	2019
12	Clinical Nutrition	ANN 707	Ph.D	2020
13	Advances in Feed Technology	ANN 706	Ph.D	2020
14	Modern Concepts of Feeding Monogastric Animals	ANN 702	Ph.D	2020

15	New Feed Resources and Toxicants in Animal Feeding	ANN 709	Ph.D	2020
16	Master's Research	ANN 699	M.V.Sc.	2020
17	Doctoral Research	ANN 799	Ph.D	2020
18	Nutrition of Companion, Laboratory, Wild and Zoo Animals	ANN 607	M.V.Sc.	2021

PG Students Guided as Major Advisor (Degree Awarded)

Sl. No.	**Year**	**Name of student & Admission No.**	**Ph.D./ Masters**	**Title of the thesis completed**
1	2018-20	Sanjay Kumar Pradhan (1040416007)	**Ph.D.**	Evaluation of boron as a feed supplement on broilers fed with calcium deficient diet
2	2018-21	Movaliya Jigneshkumar Kantilal (1040417002)	**Ph.D.**	Effect of supplementing bypass fat and fibrolytic enzymes on lactating Surti buffaloes
3	2018-20	Londhe Arvind Sudhakar (2040418005)	**Masters**	Effect of bypass fat supplementation and fibrolytic enzymes on growth performance in Surti buffalo calves
4	**2020-22**	**Mo. Azhar A. Sheikh (2020010170021052)**	**Masters**	**Continuing…….**
Member of PG students Advisory committee				
1	2018-20	Ajay P. Raval (1010416006)	**Ph.D.**	Effect of soybean and rice bran oil supplementation on nutrient utilization, lactation performance and milk fatty acid profile in Surti goats.
2	2018-20	Prajapati Dhruvilkumar Ramabhai (2040418011)	**Masters**	Effect of fibrolytic enzyme supplementation on nutrient utilization and growth performance of Surti goat kids fed legume straw based diet
3	**2020-22**	**Shradha Namdeo Shettiwar (2020010170021108)**	**Masters**	**Continuing…….**

5. RESEARCH ACTIVITIES:

No.	Name/ No. of Project/ Scheme	Funding Agency*	Period From To	Total Funding	Position/ Role of the Applicant (PI/ Co-PI)
1	Nutrient composition, *in vitro* feed degradation and microbial biomass yield estimation of unconventional feed resources for ruminants in south Gujarat.	Institute	2019-20	_	Co-PI
2	Assessment of feeding practices, nutritional status and gap for lactating buffaloes in Tapi district.	Institute	2019-21	_	Co-PI
3	Nutritional evaluation of commonly available feedstuffs used for livestock feeding in Bharuch district	Institute	2021-23	-	PI

- **Details of the Recommendations for the farming community during the period of 2016-17 to 2020-21**
  - **One (17th Meeting of Combined AGRESCO 2021) for Farmer's community**

Title: Assessment of feeding practices, nutritional status and gap for lactating buffaloes in Tapi district.

Recommendation: The livestock keepers of Tapi district are recommended to offer additional 0.8 kg compound concentrate mixture having 20% CP to the buffaloes yielding 4-7 kg/d milk in order to fulfil the nutrient requirement.

List Of Publications

6. PUBLICATIONS

(i) Research Paper Published in NAAS rated national and International Journals: **15**

(ii) Review articles Published in NAAS rated journal : **07**

(iii) Book chapter published: **04**

(iv) Popular articles published in different magazines:**33**

A) Original research articles published in referred NAAS rated journals:

S. No.	Title of Publication	Authors in order	Journal, volume, page no.	NAAS rating
1	"Effect of isolates of fibre degrading bacteria on body weight changes, milk production and composition, nutrient intake and nutrient utilization in lactating Murrah buffaloes"	**Brishketu Kumar,** S. K. Sirohi**.**	*African Journal of Biotechnology,* 22 May, 2013, Vol. 12(21), pp. 3302-3308.	**6.0/NAAS 2013**
2	"Effect of isolate of ruminal fibrolytic bacterial culture supplementation on ruminal fibrolytic bacterial population as well as on survivability of inoculated bacterial strain in lactating Murrah buffaloes"	**Brishketu Kumar,** S. K. Sirohi**.**	*Veterinary World*, 2013, 6(1), 14-17.	**5.71**
3	Effect of cellulose degrading bacteria isolated from Murrah buffaloes on *in vitro* fibre digestibility**.**	**Brishketu Kumar,** S. K. Sirohi**.**	*Indian Journal of Animal Nutr.*2013. 30 (2): 128-131.	**5.02**
4	Morphological, biochemical and molecular characterization of fibre degrading bacterial isolates from buffalo rumen.	**Kumar Brishketu,** Sirohi S.K, Puniya A.K, Sheel Rakesh, Ahmed H. A.	*Indian J. Anim. Nutr.* 2013. 30 (3): 246-251.	**5.02**
5	Effect of Formaldehyde Treated Mustard Cake on Nutrient Utilization and Milk Production Performance in Crossbred Cows Fed Wheat Straw Based Diet.	Sunil Kumar Sirohi, T.K. Walli, M.R. Garg* and **Brishketu Kumar.**	*Indian J. Anim. Nutr.* 2013. 30 (1): 5-11.	**5.02**
6	Effect of mixture of medium chain fatty acids and unsaturated fatty rich oils on methane production and rumen fermentation in vitro.	Sheel Rakesh, Sirohi S.K, **Kumar Brishketu,** Ahmed H. A.	*Indian J. Anim. Nutr.* 2013. 30 (3): 256-261.	**5.02**
7	Performance of crossbred heifers supplemented with linseed oil, either alone or in combination with myristic acid.	Rakesh Sheel, S. K. Sirohi, M. S. Mahesh, **Brishketu Kumar.**	*Proc. Natl. Acad. Sci., India, sect. B Biol. Sci.*	**5.0**

8	Effect of boron supplementation on the performance and metabolism of minerals in broiler chicken.	Pradhan, S.K., **Kumar, B**., Banakara, K.B., Patel, V.R. Pandya, H.R. and Singh, R.R.	Animal Nutrition and Feed Technology, 2020; 20: 39-49.	**6.31**
9	Effect of dietary boron supplementation on serum biochemical and carcass characteristics in broiler chicken.	SK Pradhan, **B Kumar**, AP Raval, SS Chaudhary and VB Kharadi.	Journal of Pharmacognosy and Phytochemistry 2020; Sp9 (2): 367-371.	**5.21**
10	Effect of supplementation of niacin on physiological and blood biochemical parameters in crossbred cows during heat stress.	Nazam Khan1, Neelam Kewalramani2, Vikas Mahajan3, Zulfqarul Haq4 and **Brishketu Kumar5** (2018).	*Indian Journal of Animal Sciences* 88 (1): 68–75.	**6.23**
11	Effect of supplementing bypass fat on the performance of buffalo calves.	**Kumar, B**. and Thakur, S. S.	Indian Journal of Animal Nutrition, 2007, 24(4):233-236.	**5.02**
12	Efficacy of garlic, eucalyptus and neem powders on rumen modulation, methanogensesis, and gas production kinetics in wheat straw based diet evaluated *in vitro*.	Kumar S.S., Navneet G., Mehta M., Mohini M., Pandey P., Shete S. and **Brishketu K.**	*Wayamba journal of Animal Science, 2012*.	ISSN: 2012-578X.
13	Effect of Boron Supplementation on Bone Mineralization and Antioxidant Status in Broiler Chicken	Sanjay K. Pradhan, **B. Kumar,** Kantesh B. Banakara, R.R. Singh, V.B. Kharadi, S.S. Chaudhary.	Asian Journal of Dairy and Food Research 2021.	**5.75**
14	Effect of Bypass Fat and Fibrolytic Enzymes on Milk Yield and Milk Composition of Surti Buffaloes	Jignesh. K. Movaliya, **Brishketu Kumar**, Krishna. S. Rao, Vipul. R. Patel, Ajay. P. Raval	The Indian Journal of Veterinary Sciences and Biotechnology. 2021,Vol.17, No.04.	**5.58**
15	Effect of oral dosing of live and autoclaved culture of *Ruminococcus flavefaciens* FD-1 on rumen bacterial and fungal population in Murrah buffaloes.	**Brishketu Kumar,** Dinesh Kumar, MS Mahesh and Rakesh Sheel.	Indian J. dairy Sci.2021, 74 (5): 458-461.	**5.31**

Review Articles in Peer-reviewed Journals

S. No.	Title of Review Article	Authors in order	Journal, volume, page no.	NAAS Rating of Journal
1	Benchmark to Reach Precocious Puberty in Replacement Heifers: (2017)	Thakur Krishna Shankar Rao1, **Brishketu Kumar2**, Archita Singh3, Vijay Kumar Sharma4*, Anushmita Baishya5 Ankita Dilipbhai Verma6	Theriogenology Insight: 7(2): 1-11.	**4.75**
2	Effect of Vaccination on Performance of Dairy Animals with Special Reference to Bulls(2017)	Thakur Krishna Shankar Rao1, **Brishketu Kumar2,** Vijay Kumar Sharma3*, K.R. Sriranga1, Anusmita Baishya1, Mukesh Bhakat4 and Tushar Kumar Mohanty4	Theriogenology Insight: 7(3): 1-13.	**4.75**
3	Effect of Boron Supplementation on the Overall Health and Productivity of Livestock: A Review. (2018)	Sanjay Kumar Pradhan[1], **Brishketu Kumar[2]**, Thakur Krishna Shankar Rao[3] and Vijay Kumar Sharma[4].	Theriogenology Insight: 8(3): 137-147.	**4.75**
4	Fetal Membranes and Associated Complications in Dairy Animals: A Review. (2018)	Thakur Krishna Shankar Rao[1], **Brishketu Kumar[2]**, Shailendra Chaurasia[3], Vijay Kumar Sharma[4], Anusmita Baishya[1], Archita Singh[5] and Naveen Kumar Babulal Patel[1]	Theriogenology Insight: 8(3): 125-136.	**4.75**
5	Clinical Importance of Lymphatic Territories with Special Reference to Mammary Glands and Uterus in Canine: A Review (2018).	Shailendra Chaurasia[1]*, R. Menaka[2], Thakur Krishna Shankar Rao[3], **Brishketu Kumar[4]** and Vijay Kumar Sharma[5].	Theriogenology Insight: 8(2): 79-86.	**4.75**
6	Photoperiod Management In Dairy Herd: A Review (2017)	T.K.S. Rao1, B. Kumar2, A. Singh3, K.R. Sriranga4, V.A. Patel5 and S. Chaurasia6	International Journal of Science, Environment and Technology, Vol. 6, No 1, 2017, 669 – 683	**3.98**
7	Features of Uterine Involution in Dairy Animals: A Review (2020)	Thakur Krishna Shankar Rao[1], **Brishketu Kumar[2]**, Shailendra Chaurasia[3], Vijay Kumar Sharma[4], Pankaj Kumar and D. J. Malviya.	Theriogenology Insight: **10**(3): 81-91.	**4.75**

Popular/Newspaper Articles

S. No.	Title of Article with authors in order	Publication Details with the name of the magazine, year, vol., pages, etc.
1	Significance of livestock, poultry and fishery sectors in Indian economy. **Brishketu Kumar**, Rakesh Sheel S K Sirohi, Haider Ali and V Singh.	Livestock and Feed Trends. August-Sept 2013, Volume 11, Number 3.
2	Nutritional manipulation to boost immunity in new born calves: An Overview. **Brishketu Kumar**, Dinesh Kumar, Deepa Hire math, Rakesh Sheel and Thakur.K.S.Rao	Livestock Technology, April 2014, volume: 3, Issue: 11.
3	Bypass fat: a potential boon to dairy farmers. **Brishketu Kumar**, Deepa Hire math, Rakesh Sheel, Thakur.K.S.Rao and Dinesh Kumar	Pashudhan, September 2014, volume: 40, Issue: 9.
4	Judging of cattle and managemental intervention to improve productivity of dairy animal at farmers door step. T.K.S.Rao, **Brishketu Kumar**, Dinesh Kumar, Rakesh Sheel and Alok Mishra	Pashudhan, December 2014, issue 3.
5	Protect feed protein to exploit maximum production potential from dairy herd. Dinesh Kumar, **Brishketu Kumar**, T.K.S.Rao and Rakesh Sheel	Pashudhan, April 2015, Volume 42, issue 4.
6	Improving livestock productivity through sustainable nutrient management strategies. **Brishketu Kumar**, Thakur. K. S. Rao, Deepa Hiremath, Dinesh Kumar, Rakesh Sheel and Alok Mishra	Pashudhan, September 2014, volume: 40, Issue: 9.
7	Shelter management for sustainable livestock production. T. K. S. Rao, **Brishketu Kumar**, Dinesh Kumar, Anamika Thakur and D. R. Patel.	CLFMA of India, 57th National Symposium September 2015, Souvenir.
8	Pasture management and its impact on sustainable livestock production. **Brishketu Kumar**, T. K. S. Rao, Dinesh Kumar, Anamika Thakur and D. R. Patel.	CLFMA of India, 57th National Symposium September 2015, Souvenir.
9	Amino acid evaluation and its availability in pig and poultry (Monogastric animals). Dinesh Kumar, P. K. Yadav, L. K. Das, M. S. Mahesh, **Brishketu Kumar** and Runjun Dowrah.	Livestock and Feed Trends. Aug-Sept 2015, Volume 12, Number 3.
10	Use of organic protectant of protein and amino acid to protect the protein in ruminant and boost their productive and reproductive performance. Dinesh Kumar, P. K. Yadav, L. K. Das, M. S. Mahesh, Ankita, Saroj Kumar and **Brishketu Kumar**	Livestock and Feed Trends. Feb-March 2015, Volume 12, Number 6.
11	Role of microminerals in immunity development in calves. **Brishketu Kumar**, Alok Mishra, Rakesh Sheel, Thakur.K.S.Rao and Dinesh Kumar.	Livestock Line. November 2015, Volume 9, Issue 7.
12	Concepts of animal behavior and its application to augment productivity. T. K. S. Rao, **Brishketu Kumar**, Dinesh Kumar and Rakesh Sheel	Livestock and Feed Trends. Dec-Jan 2016, Volume 13, Number 5.

13	A1 Vs. A2 milk and its relevance in India. Anamika, **Brishketu Kumar** and T. K. S. Rao	Livestock and Feed Trends. Dec-Jan 2016, Volume 13, Number 5.
14	Techniques of measurement and evaluation of behaviours in cattle. T. K. S. Rao, **Brishketu Kumar**, K. C. Gamit, Dinesh Kumar, D. R. Patel and R. R. Patel.	Pashudhan, April 2016, Volume 44, Issue 4.
15	Models of behaviours in cattle. T. K. S. Rao, **Brishketu Kumar**, K. C. Gamit, Dinesh Kumar, D. R. Patel and R. R. Patel	Pashudhan, March 2016, Volume 44, Issue 3.
16	Effect of niacin supplementation on dairy livestock during heat stress **Brishketu Kumar**, Nazam Khan, T. K. S. Rao, Anamika and D. R. Patel	Livestock and Feed Trends. Aug-Sept 2016, Volume 14, Number 3.
17	Feeding strategies for ameliorating negative energy balance in postpartum cow. Dinesh Kumar, P. K. Yadav, Saroj Kumar and **Brishketu Kumar**	Livestock and Feed Trends. Aug-Sept 2016, Volume 14, Number 3.
18	Artificial insemination technique; a tool to increase the farm animals productivity. **Brishketu Kumar**, T. K. S. Rao, Dinesh Kumar, Anamika and D. R. Patel.	Livestock Line, Volume 10, Issue 7, November 2016.
19	Bovine colostrum; a promising nutraceutical. T. K. S. Rao, **Brishketu Kumar,** A. Thakur, V. A. Patel, K. D. Thakor, A. Singh	Livestock and Feed Trends. Oct-Nov 2016, Volume 14, Number 4.
20	Feeding and management of laboratory guinea pigs. Dinesh Kumar, P. K. Yadav, Saroj Kumar, **Brishketu Kumar,** Ankita and Punita Kumari	Livestock and Feed Trends. Oct-Nov 2016, Volume 14, Number 4.
21	Importance of grooming in husbandry practices in horse and cattle. T. K. S. Rao, A. Singh, A. D. Verma**, B. Kumar**, P Kumar.	Livestock Line, Volume 10, Issue 9, January 2017.
22	Nutrigenomics: Simply gene food interaction or more. **Brishketu Kumar**, T K S Rao, Vijay Sharma, Anamika and Dinesh Kumar.	Livestock Feed Trends: Volume 15, Number 3, 2017.
23	Goat Farming in India: Principles and Practices. Anamika, **Brishketu Kumar** and T. K. S. Rao.	Livestock and Feed Trends. Feb-March 2017, Volume 14, Number 8.
24	Golden rules for good food plant hygene practices. P. K. Yadav, Saroj Kumar, **Brishketu Kumar,** Dinesh Kumar and Manisha Shyam.	Livestock Line, Volume 11, Issue 5, September 2017.
25	Newer approaches of feed analysis: Near infrared reflectance spectroscopy. Dinesh Kumar, P. K. Yadav, **Brishketu Kumar** and Manisha Shyam.	Livestock and Feed Trends. July-Sept 2018, Volume 16, Number 2.
26	Green forages and silage toxicity in livestock: A real concern. Rashmi Kumari, Dinesh Kumar, P. K. Yadav, **Brishketu Kumar** and Manisha Shyam	Livestock and Feed Trends. April-June 2019, Volume 17, Number 1.
27	Indian livestock farming: Prospects and role of government policies. **Brishketu Kumar,** Londhe Arvind Sudhakar, T. K. S. Rao and Ishu Kumari.	CLFMA of India, 61st National Symposium August 2019, Souvenir.

28	Quality control of poultry and pig ration for efficient egg and meat production. **Brishketu Kumar,** Bhavin Chaudhri, Arvind Londhe Sudhakar, T. K. S. Rao and Dinesh Kumar.	Livestock and Feed Trends. July-Sept 2019, Volume 17, Number 2.
29	Indicator sensors for monitoring meat quality. Dinesh Kumar, P. K. Yadav, **Brishketu Kumar** and Manisha Shyam	Livestock and Feed Trends. Oct-Dec 2019, Volume 17, Number 3.
30	Non-conventional feed resources as an alternative to conventional feeds in livestock feeding. **Brishketu Kumar,** S. K. Pradhan, T. K. S. Rao, L. A. Sudhakar, and Dinesh Kumar.	Livestock and Feed Trends. Jul-Sept 2020, Volume 18, Number 2.
31	Nutritional interventions to increase productivity and to reduce heat stress in dairy cattle. **Brishketu Kumar,** T. K. S. Rao, Movaliya J. K and Dinesh Kumar.	Livestock and Feed Trends. Oct-Dec 2020, Volume 18, Number 3.
32	Nutrient losses during storage of feed ingredient used for animal feeding. Rashmi Kumari, Anjay2, **Brishketu Kumar,** P. K. Yadav and Dinesh Kumar.	Livestock and Feed Trends. Jan-Mar 2021, Volume 18, Number 4.
33	Application of nano-minerals in livestock feeding. Movaliya J. K, **Brishketu Kumar,** T. K. S. Rao, and Dinesh Kumar.	Livestock and Feed Trends. Apr-Jun 2021, Volume 19, Number 1.

Monographs/Bulletins/Newsletter/Conference/Proceedings/Compendiums/Manuals/Periodicals Published

S. No.	Type of Publication	Title of Publication with authors	Volume/month/ year/ pages of publication
1	**Book Chapter**	Coriander (*Coriandrum sativum*) **Brishketu Kumar[1]**, Anamika[2] and Dinesh Kumar[3]. Phytobiotics and Animal Production.	IBS, Satish Serial Publishing House, Delhi. ISBN: 9788193906576.
2		Indian Goose Berry (*Emblica officinalis*). Dinesh Kumar[1] and **Brishketu Kumar[2].** Phytobiotics and Animal Production.	IBS, Satish Serial Publishing House, Delhi. ISBN: 9788193906576.
3		Role of Fats in Dairy Animals and their Potential in Methane Mitigation. Chapter 17, Pages: 235-255. Goutam Mondal, Rakesh Sheel, **Brishketu Kumar** and M. Bhakat.	Book entitled **"Livestock Greenhouse Gases: Emission and Options for Mitigation,** Sunil Kumar Sirohi, T. K. Walli, Bhupinder Singh, and Nasib Singh. Satish Serial Publishing House, Azadpur, Delhi, 2012.

4		*In vitro* Fermentation Techniques Used to Study the Rumen Ecosystem. Chapter 25, Pages: 351-366. **Brishketu Kumar**, Poonam Pandey, Navneet Goel and Sunil Kumar Sirohi.	Book entitled **"Livestock Greenhouse Gases: Emission and Options for Mitigation,** Sunil Kumar Sirohi, T. K. Walli, Bhupinder Singh, and Nasib Singh. Satish Serial Publishing House, Azadpur, Delhi, 2012.
5	**Compendium Chapter**	**Brishketu Kumar** (2017). Doubling of farmer's income through the dairy sector.	Compendium of ICAR sponsored winter school on Approaches for doubling farmer's income organized by College of Agriculture, NAU, Bharuch (Gujarat) from 1st -21st November 2017.Page No. 105-111.
6		**Brishketu Kumar** (2017). Nutritional strategies to economize cost of production in dairy animals.	Compendium of ICAR sponsored winter school on Approaches for doubling farmer's income organized by College of Agriculture, NAU, Bharuch (Gujarat) from 1st -21st November 2017.Page No. 332-339.
7		**Brishketu Kumar**, Navneet Goel. 2011. Estimation of volatile fatty acids by GLC. Pages: 177-180.	Compendium of National training on "Mitigation Strategies for Methane Production from Dairy Animals" (Sponsored by NAIP (ICAR), New Delhi), May 02 to May 16, 2011, NDRI, Karnal.
8		S. K. Sirohi, **Brishketu Kumar**, Navneet Goel. 2011. *In vitro* gas production technique. Pages: 181-185.	Compendium of National training on "Mitigation Strategies for Methane Production from Dairy Animals" (Sponsored by NAIP (ICAR), New Delhi), May 02 to May 16, 2011, NDRI, Karnal.
9		Navneet Goel, **Brishketu Kumar**. 2011. Estimation of *in vitro* methane by gas chromatograph. Pages: 186-188.	Compendium of National training on "Mitigation Strategies for Methane Production from Dairy Animals" (Sponsored by NAIP (ICAR), New Delhi), May 02 to May 16, 2011, NDRI, Karnal.
10		Navneet Goel, **Brishketu Kumar**. 2011. Estimation of *in vitro* methane and hydrogen by gas chromatograph. Pages: 189-192.	Compendium of National training on "Mitigation Strategies for Methane Production from Dairy Animals" (Sponsored by NAIP (ICAR), New Delhi), May 02 to May 16, 2011, NDRI, Karnal.

Teaching materials prepared/compiled:

List of Theory/Practical manuals/notes prepared/compiled:

Sr. No	Publications	Title	Published
1	**Theory Manual**	LPM 4.1. (1+1=2) Livestock production and management	Department of Animal Science, College of Agriculture (B.Sc Hons.), NAU, Bharuch
2		LPM 5.2. (2+1=3) Dairy cattle and buffalo production and management	Department of Animal Science, College of Agriculture (B.Sc Hons.), NAU, Bharuch
3		LPM 5.1 (Ruminant Production & Management)	Department of Animal Science, College of Agriculture, NAU, Bharuch, Gujarat.
4		LPM 6.2 (Principles of Poultry Production and Management)	Department of Animal Science, College of Agriculture, NAU, Bharuch, Gujarat.
5	**Practical Manual**	LPM 4.1. (1+1=2) Livestock production and management	Department of Animal Science, College of Agriculture (B.Sc Hons.), NAU, Bharuch
6		LPM 5.2. (2+1=3) Dairy cattle and buffalo production and management	Department of Animal Science, College of Agriculture (B.Sc Hons.), NAU, Bharuch
7		LPM 5.1 (Ruminant Production & Management)	Department of Animal Science, College of Agriculture, NAU, Bharuch, Gujarat.
8		LPM 6.2 (Principles of Poultry Production and Management)	Department of Animal Science, College of Agriculture, NAU, Bharuch, Gujarat.

Expert Panel Membership/Examinership/Paper Setting etc.

Sr. No.	Activity	Details of activity
Within Agricultural Universities of Gujarat		
Year 2014		
1	External examiner	Paper Setting (LPM 4.1), Regular
2		Paper Assessment (LPM 4.1), Regular
3	External examiner	Paper Setting (LPM 5.2), Regular
4		Paper Assessment (LPM 5.2), Regular
Year 2015		
1	External examiner **(Convener)**	Paper Setting (LPM 4.1), Supplementary
2		Paper Assessment (LPM 4.1), Supplementary
3	External examiner	Paper Setting (LPM 5.2), Regular
4		Paper Assessment (LPM 5.2), Regular
Year 2016		
1	External examiner	Paper Setting (LPM 5.2), Regular
2		Paper Assessment (LPM 5.2), Regular
Year 2017		
1	External examiner	Paper Setting (LPM 4.1), Regular
2		Paper Assessment (LPM 4.1), Regular
3	External examiner	Paper Setting (LPM 5.2), Supplementary
4		Paper Assessment (LPM 5.2), Supplementary
Year 2018		
1	External examiner	Paper Setting (LPM 4.1), Regular
2		Paper Assessment (LPM 4.1), Regular
Outside Agricultural Universities of Gujarat		
Year 2018		
1	External examiner (Paper Setting and Assessment)	LPM 4411 (Dairy Cattle Production), Agriculture University, Kota, Rajasthan.
2	-Do-	ANISC 211 (Livestock and Poultry Management), Agriculture University, Kota, Rajasthan.
Year 2019		
1	External examiner (Paper Setting and Assessment)	LPM 4321 (Livestock Production and Management), Agriculture University, Kota, Rajasthan.
2	External examiner (Paper Setting)	(Animal Nutrition Paper-1), Bihar Animal Sciences University, Patna, Bihar.
Year 2019		
1	External examiner (Paper Setting for Common Entrance for PG Program)	For the subject of (Animal Husbandry), Agriculture University, Kota, Rajasthan.

2	External examiner (Paper Setting for Common Entrance for Ph.D. Program)	For the subject of (Livestock Production and Management), Agriculture University, Kota, Rajasthan.
Year 2020		
1	External examiner (Paper Setting for Common Entrance for PG Program)	For the subject of (Animal Husbandry), Agriculture University, Kota, Rajasthan.
2	External examiner (Paper Setting for Common Entrance for Ph.D. Program)	For the subject of (Livestock Production and Management), Agriculture University, Kota, Rajasthan.

Research Papers Presented at International/ National Conference (s)

S. No.	Particulars of Conference	International/ National	Title of Paper presented with authors in order
1	15th Convocation of National Academy of Veterinary Sciences and National Symposium on "Sustainable Livestock Development for Food and National security: Way Forward" on 22-23rd October, 2016 at Khalsa College of Veterinary and Animal Sciences, Amritsar.	National	**"**Effects of saponin containing plant extracts on rumen fermentation and methane emission authored. Anamika, K. K. Singhal and **Brishketu Kumar.**
2	National Conference on "Smallholders Livestock Producers' in India: Opportunities and Challenges" and Annual Convention of ISAPM to be held on 11th -13th April, 2018 at Sardarkrushinagar Dantiwada, Gujarat.	National	Effect of *Ruminococcus flavefaciens* Culture Supplementation on Total Ruminal Fungal and Bacterial Population in Lactating Murrah Buffaloes and it's Enumeration by Most Probable Number Technique **B. Kumar***, S. K. Sirohi, T. K. S. Rao and R. Sheel.
3	ISBD National Conference on Enhancing Rural Livelihood through Improved Buffalo Productivity and Health from 17th -19th January 2019 at NAU., Navsari, Gujarat.	National	Effect of Isolate of *Ruminococcus flavefaciens* Culture Supplementation on Nutrient Utilization and Milk production in Lactating Murrah Buffaloes. **Kumar Brishketu*,** Sirohi S. K, Pradhan Sanjay, and Rao. K. S. Thakur.

4	47th Dairy Industry Conference 2019 on "Innovative Approach for Enhancing Dairy Farmer's Income" from 7th -9th February 2019 at Patna, Bihar.	National	Effect of Dietary Supplementation of Browse Leaves of *Terminalia arjuna* and *Albizia lebbeck* on Milk Production Performance in Lactating Does. V. R. Patel[1], M. C. Desai[2] and **Brishketu Kumar[3]***

Online Seminar/Symposium/Workshop Attended

S. No.	Particulars of Webinars	Special Remarks	International/ National
1	"Addressing COVID-19 Impact On Food Security, Nutrition And Livelihood: A Special Focus To Gujarat" organized by College of Agriculture, Navsari Agricultural University, Campus Bharuch during 15th -16th July 2020.		National
2	National Seminar On "Feed Additives For Improving The Efficiency And Sustainability Of Milk Production In Dairy Animals" organized by the Department of Animal Nutrition, College of Veterinary Science and Animal Husbandry, SDAU, Gujarat during July 20th -21st .		National
3	"Sustainable Dairy Production Through Breeding Interventions "organized by Department of Animal Genetics and Breeding College of Veterinary Science and Animal Husbandry, SDAU, Gujarat during 16th -17th June.		National
4	Workshop on "ABC of Scientific Writing" during 22nd July to 5th August 2020 organized by KVK, Cuttack, Santhapur, ICAR-National Rice Research Institute, Cuttack.	"Certificate of Merit" was awarded for successfully completing the workshop with distinction	National
5	Webinar on Sustainable Agriculture through Natural resource Management "organized by Department of Agronomy, College of Agriculture, Navsari Agricultural University, Campus Bharuch (Gujarat) during 4th -8th January 2021.	Got certificate for delivering lecture as invited speaker on "Nutritional Interventions to Mitigate Methane Production in Ruminants"	

Best Paper presentation award

S. No.	Details of Conference/Symposia	Title of Paper with Award	Authors in Order
1	15th Convocation of National Academy of Veterinary Sciences and National Symposium on "Sustainable Livestock Development for Food and National security: Way Forward" on 22-23rd October, 2016 at Khalsa College of Veterinary and Animal Sciences, Amritsar.	**"**Effects of saponin containing plant extracts on rumen fermentation and methane emission authored. **-2nd Best Poster Award**	Anamika, K. K. Singhal and **Brishketu Kumar.**

Professional Training Attended Outside the Institution/University

1. Winter school on "Micronutrients in Animal Nutrition" at Centre of Advanced Faculty Training (CAFT), Division of Animal Nutrition, Indian Veterinary Research Institute (IVRI), Izatnagar-243122, Bareilly, UP, India during 3rd-23rd Feburary-2016.
2. Winter school on "Optimization of Production Efficiency of Integrated Fish Livestock Farming" at ICAR Research Complex for Eastern Region, Patna-800014 from November 17, 2016 to December 07, 2016.

Members of Different Scientific Body/Society/Association

1	Member of scientific society	Animal Production AGRESCO Sub-Committee, Navsari Agricultural University, Navsari, Gujarat, India.
2	Member of scientific advisory committee	KVK, NAU, Dediapada, Narmada for the period of 05/04/2018 to 04/04/2021.
3	Member of research committee	Life member of Animal Nutrition Association, (CAFT, IVRI) of India.
4	Member of scientific society	Life member of Animal Nutrition Society (NDRI) of India.
5	Member of scientific body	Life member of Indian Poultry Science Association, (CARI) of India.
6	Member of scientific body	Life member of Indian Society for Sheep and Goat Production and Utilization
7	Member of Veterinary Council	Member of Gujarat State Veterinary Council, Gandhi Nagar, Gujarat, India.
8	Member of scientific advisory committee	KVK, Chasod, Netrang, Narmada for the period of 2022

Executive Office/Member in Recognized Professional Society

S. No.	Office Held	Professional Society/Journal Name with NAAS rating	Period (Duration)
1	Member, Scientific Advisory Board	International Journal of Livestock Research, **(NAAS-5.36)**	2020-2021

Got Certificate of Excellence in Reviewing

S. No.	Certificate of Appreciation/ Excellence in	Professional Society/Journal Name	Certificate No.
1	Reviewing	Asian Journal of Fisheries and Aquatic Research,2020	SDI/HQ/PR/CERT/60651/BRI
2	Reviewing	International Journal of Livestock Research	For[Mns.No.:IJLR-2020-09-424]
3	Reviewing	Asian Journal of Agricultural Extension, Economics and Sociology, 2021	SDI/HQ/PR/CERT/72394/BRI
4	Reviewing	Asian Journal of Fisheries and Aquatic Research,2021	SDI/HQ/PR/CERT/69192/BRI

EXTENSION ACTIVITIES (Lectures delivered at Farmer's Training/ Meetings)

S. No.	Particulars of Training Program	Topic of Lecture	Date
1	Krushi Mahotsav-Ankleshwar, Bharuch.	Dairy Livestock Management	26.5.2014-01.06.2014
2	Krushi Mahotsav, Bharuch	Managemental practices of dairy cattle and buffalo in south Gujarat	05.05.2015-09.05.2015
3	Farmer’s Training	Profitable dairy farming	2015
4	Krushi Mahotsav, Amod, Bharuch	Nutritional management of dairy livestock	02.01.2016
5	Krushi Mahotsav-Ankleshwar, Bharuch.	Poultry and goat farming	16-17.05.2016
6	Kisan Kalyan Mahotsav, Bharuch	How to start a dairy farm	02.05.2018

TRANSFER OF TECHNOLOGIES:

1. Department staff is also actively participating in Krushi mela, Khedut Din, Khedut Shibir and Seminar time to time.
2. This department is also guiding farmers and general public through publishing research articles as well as popular articles in various international and national journals as well as in monthly and quarterly magazines on various aspects of animal husbandry practices.

Assistant Rector:

From 1.07.2017 to 31.10.2019	Worked as an Assistant rector (Bhrugu Boys hostel, Wing-A), College of Agriculture, NAU, Bharuch during the mentioned time period and take care of all the activities and student related issues during my tenure as rector in most efficient manner.

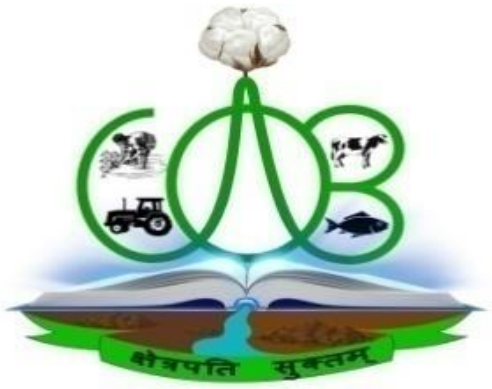
Assistant Academic Incharge-Polytechnic in Agriculture, NAU, Bharuch

Since 6.07.2013 to Still continuing…	Working as an Assistant academic in charge, Polytechnic in Agriculture, NAU, Bharuch since July 2013 and performing all the works and activities necessary for smooth running of the Polytechnic campus. Performing all the tasks related to admission of students and maintaining all the files of the students of polytechnic in Agriculture.

Active involvement in other co-curricular activities:

Since 10.07.2013 to Still continuing…	Active participation in activity viz., Teachers day celebration, Swacchata Abhiyan, Thalasemia & Blood Group Check up Camp, Shram Shibir, Tree plantation, International Yoga day celebration etc. Participating in Special camp under National Service Scheme (NSS) for students of Degree as well as Polytechnic in Agriculture

Designed LOGO of the College:

	
Designed the LOGO of College of Agriculture, NAU, Bharuch with highest efforts, creativity and dedication.	

Acting as the Head of the "Department of Animal Production"

Since 4.09.2013 to Still continuing…	Acting as Head of the department since September 2013 and did/doing all the necessary things to establish the department with establishment of Animal science laboratory with all the necessary equipments, glasswares, chemicals and all other facilities along with all the specimens needed for demonstration to students of diploma and degree under LPM courses single handly. ➢ Purchased all the instruments like AAS, Solvent extraction system, Fibre extraction system, Nitrogen analyzer, Muffle furnace, Hot air oven, Windey grinder mill, Water distillation system along with other instruments. ➢ Purchased various animal models of different livestock breeds (Full life size models of Gir cows and Surti buffalo along with models of Surti goat, Patanwadi sheep, Kankrej cow/bull, Murrah buffalo, WLH hen, RIR breed of poultry and models of reproductive and digestive system of large ruminants and poultry) and necessary LPM specimens like (specimens related to identification and restraining of livestocks, A.I. instruments and others). ➢ Going to start the dairy cattle farm (with 6 Gir cows). ➢ Time to time preparation of Annual reports of the department. ➢ Taking care of all the activities regarding purchasing of instruments and other departmental needs. ➢ Maintains all the register related to dead stock as well as consumable items of department. ➢ Publishing research articles time to time in reputed NAAS rated journals. ➢ Preparing and updating all the teaching materials time to time as per need or change in course curriculum at Diploma, Degree and Master and Ph.D. level, respectively. ➢ Taking classes/teaching in all the three colleges/campuses viz; Polytechnic in Agriculture and College of Agriculture, Bharuch and College of Veterinary Science and Animal Husbandry, Navsari main campus, respectively. ➢ Attending all the meetings of HOD's time to time under the leadership of our Dean of the college for the betterment of departments and college. ➢ Taking part in Krushi Mahotsav (Kharif and Rabi), Farmer's training and NSS activities, respectively.