

Brief Biodata

Name	:	Sushil Kumar	
Designation	:	Head, Cattle Genetics & Breeding Division	
Discipline	:	Animal Genetics & Breeding	
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★ Education qualification <i>(Graduation on wards)</i>			★
Degree	Subject (s)	Institute	
B. Sc. (Ag)	Agriculture	Gorakhpur University, Gorakhpur	
M. Sc. Dairying (Animal Genetics & Breeding)	NDRI, Deemed to be university, Karnal	Animal Genetics & Breeding with other essential courses	
Ph. D. (Animal Genetics & Breeding)	NDRI, Deemed to be University, Karnal	Animal Genetics & Breeding other essential courses for degree	
❖ Area of research			❖
 Cattle Breeding for milk production  Molecular genetics area for production enhancement from Cattle			
❖ Fellowships/Awards etc. (Not more than five)			❖
1.	Bioved Reserch Associate Award		
2.			
3.			
4.			
5.			
❖ Patent / Technologies / Methodologies / System etc. (Not more than five) :			❖
1.	A colour based assay for differentiating cow and goat milk/meat (Patent Number: 503089)		
2.	Development of an in-house built lamp assay for rapid detection of cow components aluterated in buffalo milk/meat (Patent Number: 474562)		
3.	Development of a rapid, user friendly single tube tetra prime PCR based diagnostic assay for detection of bovine leukocyte adhesion deficiency (BLAD) carriers in cattle (Patent Number: 411559)		
4.	Development of a single tube PCR assay for rapid detection of Bovine Complex Vertebral		

	Malformation (CVM) carrier.	
❖ Selected Publications: (Max. 20)		❖
1.	Kumar, S., Ganguly, I., Deb, R., Singh, U., Mandal, D.K., Mann, S., Singh, R., Kumar, M. and Sharma, A. 2015. Elucidating the role of bovine GnRHR on semen quality traits among crossbred bull. <i>Indian Journal of Animal Sciences</i> , 85 (12):1314-1317.	
2.	Kumar, S., Deb, R., Singh, U., Ganguly, I., Mandal, D.K., Singh, R., Sharma, S., Singh, G., Singh, R., Kumar, M. and Sharma, A. 2014. SNPs at exonic region of aquaporin- 7 (AQP-7) Gene may effects semen quality parameters among crossbred bulls, <i>Journal of Genetics</i> , 93:e108-e112. J263 7.17	
3	Kumar, S., Deb, R., Singh, U., Ganguly, I., Mandal, D.K., Tyagi, S., Kumar, M., Sengar, G., Sharma, Sheetal, Singh, R. and Singh, R. 2015. Bovine Circadian Locomotor Output Cycles Kaput (CLOCK) and Clusterin (CLU) mRNA quantitation in ejaculated crossbred bull spermatozoa. <i>Reproduction in Domestic Animals</i> , 50(3): 505-509. R029 8.01	
4	S. Kumar, R. Gulyani, V. Kumar and R. N. Singh (2000) Effect of genetic and non- genetic factors on weekly body weight of broiler rabbits in semi-arid region of Rajasthan. <i>Indian Journal of Animal Sciences</i> , 71(11):1075-77. I041 6.32	
5	Sushil Kumar, Arora, A L., Prince, L L L and Singh, V K (2006). Effect of nongenetic factors on greasy fleece yield in Avikalin sheep under semi-arid conditions of Rajasthan. <i>Indian Journal of Animal Sciences</i> , 76 (7): 557-559. I041 6.32	
6	Kumar, S., Alex, R., Singh, U., Kumar, A. and Das, A.K. 2015. Comparative performance evaluation of Frieswal bulls in organized farms and farmers herd. <i>Indian Journal of Animal science</i> , 85 (3): 316 – 319.	
7	Sengar, G.S., Deb, R., Singh, U., Junghare, V., Hazra, S., Raja, T.V., Alex, R., Kumar, A., Alyethodi, R.R., Kant, R., Jakshara, S., Joshi, C.G. 2018. Identification of differentially expressed microRNAs in Sahiwal (<i>Bos indicus</i>) breed of cattle during thermal stress. <i>Cell Stress and Chaperones</i> , 23(5): 1019-1032. C043 9.67	
8	Alex, R., Ramesha, K.P., Singh, U., Kumar, S., Alyethodi, R.R., Deb, R., Sharma, S., Sengar, G.S., Kumar, A., Prakash, B. 2018. Promoter variants of OAS1 gene are associated with reproductive performance and incidence of normal calving in cattle. <i>Theriogenology</i> , 108: 255-261.	
9	Alex, R., Ramesha, K.P., Singh, U., Kumar, S., Alyethodi, R.R., Deb, R., Rai, S., Sharma, S., Sengar, G.S., Kumar, A., Prakash, B. 2017. Association analysis of novel polymorphisms in 2',5'-oligoadenylate synthetase gene with reproductive traits in indigenous and crossbred cattle of Indian origin. <i>Reproduction in Domestic Animals</i> , 53(2): 442-449. R029 8.01	
10	Sengar, G.S., Deb, R., Singh, U., Raja, T.V., Kant, R., Sajjanar, B., Alex, R., Alyethodi, R.R., Kumar, A., Kumar, S., Singh, R., Jakhesara, S.J., Joshi, C.G. 2017. Differential expression of microRNAs associated with thermal stress in Frieswal (<i>Bos taurus</i> x <i>Bos indicus</i>) crossbred dairy	

	cattle. Cell Stress and Chaperones, 23(1): 155–170. C043 9.67	
11	Sengar, G.S., Deb, R., Raja, T.V., Singh, U., Kant, R., Bhanuprakash, V., Alyethodi, R.R., Kumar, S., Verma, P., Chakraborty, S., Alex, R., Singh, R. 2017. RT-LAMP assay: an alternative approach for profiling of bovine heat shock protein 70 gene in PBMC cultured model. Molecular Biology Reports, 44(3): 281–287. M072 8.32	
12	Bhanuprakash, V., Singh, U., Sengar, S. G., Raja T.V., Sajjanar, B., Alex, R., Kumar, S., Alyethodi, R.R., Kumar, A., Sharma, A., Kumar, S., Bhusan, B. and Deb, R. 2017. Comparative expression profile of NOD1/2 and certain acute inflammatory cytokines in thermal stressed cell culture model of native and crossbred cattle. International Journal of Biometeorology, 61 (5): 931-941. I185 9.79	
13	Alyethodi, R.R., Deb, R., Alex, R., Kumar, S., Singh, U., Tyagi, S., Mandal, D.K., Raja, T.V., Das, A.K., Sharma, S., Sengar, S.G., Singh, R., Prakash, B. 2016. Molecular markers, BM1500 and UMN2008, are associated with post-thaw motility of bull sperm. Animal Reproduction Science, 174:143-149. A179 8.15	
14	Bhanuprakash, V., Singh, U., Sengar, G., Sajjanar, B., Bhusan, B., Raja, T.V., Alex, R., Kumar, S., Singh, R., Ashish, Alyethodi, R.R., Kumar, S., Deb, R. 2016. Differential effect of thermal stress on HSP70 expression, nitric oxide production and cell proliferation among native and crossbred dairy cattle. Journal of Thermal Biology, 59:18-25. J517 8.90	
15	Deb, R., Sajjanar, B., Singh, U., Kumar, S., Sengar, G., Alex, R., Das, A.K., Tyagi, S., Raja, T.V., Alyethodi, R.R., Singh, R., Bhanuprakash, V., Prakash, B. 2016. Cytosine deletion at AP2 box region of HSP70 promoter and its influence on semen quality traits in crossbred bulls. Journal of Genetics, 95 (4): 1035-1038. J263 7.17	
16	Deb, R., Sengar, G.S., Singh, U., Kumar, S., Alyethodi, R.R., Alex, R., Raja, T.V., Das, A.K., Prakash, B. 2016. Application of a loop-mediated isothermal amplification assay for rapid detection of cow components adulterated in buffalo milk/meat. Molecular Biotechnology, 58: 850-860. M075 8.70	
17	Sajjanar, B., Deb, R., Singh, U., Kumar, S., Brahmane, M., Nirmale, A., Bal, S.K., Minhas, P.S. 2015. Identification of SNP in HSP90AB1 and its association with the relative thermotolerance and milk production traits in Indian dairy cattle. Animal Biotechnology, 26 (1): 45-50. A172 8.28	
18	Deb, R., Sajjanar, B., Singh, U., Alex, R., Raja, T.V., Alyethodi, R.R., Kumar, S., Sengar, G., Sharma, S., Singh, R., Prakash, B. 2015. Understanding the mechanisms of ATPase beta family genes for cellular thermo tolerance in crossbred bulls, International Journal of Biometrology, 59: 1783-1789. I185 9.79	
19	Deb, R., Singh, U., Raja, T.V., Kumar, S., Tyagi, S., Alyethodi, R.R., Alex, R., Sengar, G., Sharma, S. 2015. Designing of an Artificial Neural Network model to evaluate the association of three combined Y specific microsatellite loci on the actual and predicted post thaw motility in crossbred bull semen, Theriogenology, 83 (9): 1445–1450 T059 8.74	
20	Alex, R., Ramesha, K.P., Singh, U., Kumar, S., Alyethodi, R.R., Deb, R., Rai, S., Sharma, S.,	

	Sengar, G.S., Kumar, A., Prakash, B. 2017. Association analysis of novel polymorphisms in 2',5'-oligoadenylate synthetase gene with reproductive traits in indigenous and crossbred cattle of Indian origin. Reproduction in Domestic Animals, 53(2): 442-449. R029 8.01	
★	<u>Full list of Publications (in PDF)</u>	
❖	On-going research projects	❖
	Genetic Improvement of Indigenous Cattle Breeds through Progeny Testing – Indigenous Breeds Project (IBP)	
	Optimization of Guide RNA for CRISPR/Cas9-Mediated Knockout of CD46 in cattle fibroblast	
	Genome-wide Analysis of Copy Number Variations Affecting Semen Quality Traits in Frieswal and Sahiwal Bulls	
❖	Research Scholar	
	Dr Vaibhav Patel, Ph. D. Scholar, ICAR-IVRI, deemed to be University	