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## CURRICULUM VITAE

<b>1</b>	Name	SHOOR VIR SINGH			
<b>2</b>	Sex	Male			
<b>3</b>	Date of birth	<b>21.06.1956</b>			
<b>4.</b>	Place of birth & Native Place	<b>Nasirabad, Rajasthan, :</b> Vill.&PO-Amkhera Via-Dhampur, Dist-Bijnore, <b>UP</b>			
<b>5</b>	Father's Name	Sri Inder Bhan Singh			
<b>6</b>	Designation / Post held	Principal Scientist			
<b>7</b>	Institution where employed	Central Institute for Research on Goats, Mathura, UP			
<b>8</b>	Parent Organization:	Indian Council of Agriculture Research, New Delhi			
<b>9</b>	Postal address for correspondence	Dr. S.V.Singh, Principal Scientist, Animal Health Division, CIRG Makhdoom, PO – FARAH, Dist. MATHURA, UP, 281 122			
<b>10</b>	Contact details	Mobile	09719072856, 09412826674		
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		E-mail	<a href="mailto:shoorvir.singh@gmail.com">shoorvir.singh@gmail.com</a> shoorvir.singh@gmail.com		
<b>11</b>	Mode of selection to present post	All India written and oral competiton conducted by Agricultural Scientist Recruitment Board of ICAR (1984).			
<b>12</b>	Citizenship	Indian, By Birth			
<b>13</b>	Community (SC/ST/OBC/General)	General			
<b>14</b>	<b>Qualifications</b>	B. Sc. (Biology), B. V. Sc. & AH (Vet. Medicine) M. V. Sc. (Vet., Bacteriology, Virology & Immunology), Ph.D. (Veterinary Microbiology & Virology)			
<b>15</b>	Discipline / Specialization	Veterinary Microbiology			
<b>16</b>	Pay Scale	Rs. 37,400/- 67,000 + RGP of Rs 10,000			
<b>17</b>	Basic Pay & Total Emoluments	Rs. 50,830+NPA 15208) = <b>66,038.0</b> , Rs. <b>1,05,361=0</b>			
<b>18</b>	Experience	<b>26.11 Yrs (1.2 yrs-Vet.Off. (SUMUL,MP Dugdhd Sangh, &amp; 25.10 years as Research Scientist</b>			
<b>19</b>	<b>Publications:</b>	<b>National</b>	<b>International</b>	<b>Total</b>	
		<b>Research Articles:</b>	<b>31</b>	<b>65</b>	<b>96</b>
		<b>Papers Presented:</b>	<b>50</b>	<b>50</b>	<b>100</b>
		<b>Books:</b>	<b>8</b>	<b>--</b>	<b>8</b>
		<b>Book chapters:</b>	<b>19</b>	<b>--</b>	<b>19</b>
		<b>Patent:</b>	<b>1</b>		
		<b>Commercialization:</b>	<b>1</b>		
		<b>Students:</b>	<b>Guide: Ph.D.- 3</b>	<b>M.V.Sc. Co-guide: 4</b>	<b>M.Sc. C0-guide: 11</b>
<b>20</b>	<b>Research Interests</b>	Molecular Epidemiology, Genomics, Diagnostics, virulence, pathogenesis, Vaccinology, genetic resistance against chronic infections, Economics of chronic infections, Public health aspects of <i>Mycobacterium avium</i> sp. <i>paratuberculosis</i> .			

## 7. Academic background

Sn.	Standard / Year	Specilization	Institute/ University
1	B.Sc. / 1976	Biology	Agra University, Agra
2	B.V.Sc. & AH / 1981	Veterinary Medicine	CSA Uni. of Agric. & Tech., Kanpur
3	M.VSc. / 1983	Vet. Bact. Virol. & Immunol.	CSA Uni. of Agric. & Tech., Kanpur
4	Ph. D./ 1998	Vet. Bact. Virol. & Immunol.	CSA Uni. of Agric. & Tech., Kanpur

## Consolidated duration of different positions in the following pay scale

	From	To
Scientist - Rs. 8,000-13500 (Pre-revised)	20. 12. 1984	26.09. 1998 (14 years)
Senior Scientist - Rs.12,000-18,300 (Pre-revised)	27. 09. 1998	27.09.2006 (08 years)
Senior Scientist -Rs. 37,400-67,000 (RGP 10,000)	28.09.2006	Continuing (4 yrs 0 Months)

Title	Pages	Publisher	Year
<b>Thesis: Ph.D. – Four ( 4 )</b>			
1. Diagnosis of Paratuberculosis in goats	245	S.V. Singh	1994-98
2. Characterization of the genome of Indian isolates of <i>Mycobacterium avium subsp. paratuberculosis</i> based on IS 900 polymorphism.	186	Jagdip Singh Sohal & S.V.Singh (Supervisor)	2005-09
3. Molecular Epidemiology of <i>Mycobacterium avium subsp. paratuberculosis</i> in cases of inflammatory bowel disease in human beings, with special reference to it's zoonotic importance.	190	Ajay Vir Singh & S.V.Singh (Supervisor)	2004-09
4. Association of MHC class II DRB gene polymorphism with disease susceptibility & resistance & host cytokine expression against caprine paratuberculosis.	Writing	Pravin Kumar Singh & S.V.Singh (Supervisor)	2007 -
<b>Thesis: M.V.Sc.- Five ( 5 )</b>			
1. 'Studies on the Humoral and Cellular Immune Response of Guinea Pig against Aphtho-virus infection'	137	S.V.Singh	1983
2. 'Identification of <i>Mycobacterium avium subsp. paratuberculosis</i> , in sheep and goats and prospective evaluation of an ELISA and AGID test for the diagnosis of Johne's Disease'.	141	Varun Kumar & S.V.Singh (Co-Supervisor)	2001-02
3. Patho-biology of spontaneous and experimental paratuberculosis in goats with special reference to early lesions.	95	Sukanta Hajra & S.V.Singh (Co-Supervisor)	2002-03
4. Prevalence and molecular characterization of <i>Mycobacterium avium subsp. paratuberculosis</i> , the cause of juvenile paratuberculosis (Johne's disease) in goat kids in Agra region.	150	Pradeep Kumar & S.V.Singh (Co-Supervisor)	2003-04
5. Evaluation of 'Indigenous Therapeutic Vaccine' using MAP strain of goat origin, for the control of Johne's disease in advance clinically infected dairy herds.	125	Abhishek Srivastav & S.V.Singh (Co-supervisor)	2009-10
<b>Dissertation: M.Sc. – Eleven ( 11 )</b>			
1. Prevalence and molecular characterization of <i>Mycobacterium avium subsp. paratuberculosis</i> , the cause of Johne's disease (Paratuberculosis) in buffaloes in Agra region.	117	Deepak Yadav & Dr. S.V.Singh (Supervisor)	2003-04
2. Prevalence and molecular characterization of	98	Gaurav Sharma &	2003-04

<i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , the cause of Johne's disease (Paratuberculosis) in cow milk in Agra region.		Dr. S.V.Singh (Supervisor)	
3. Prevalence and molecular characterization of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , the cause of Johne's disease (Paratuberculosis) from goat milk in Agra region.	91	Satendra Kumar & Dr. S.V.Singh (Supervisor)	2003-04
4. Isolation and characterization of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , (cause of Johne's disease in ruminants), in Blue Bull ( <i>Boselaphus tragocamelus</i> ) population by culture and molecular methods	101	Subodh Kumar & Dr. S.V.Singh (Supervisor)	2004-05
5. Studies on spectrum of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , infection in digestive, reproductive and udder tissues by culture and molecular methods (IS 900 PCR) vis a vis serum ELISA in goats and sheep.	80	Jyoti Vohra & Dr. S.V.Singh (Supervisor)	2004-05
6. Isolation and characterization of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , in the commercial pasteurized and un-pasteurized milk and dairy products in North India.	95	Hari Shankar & Dr. S.V.Singh (Supervisor)	2005-06
7. Standardization of blood PCR for the early detection and monitoring of MAP infection in young and adult goats.	71	Harish Kumar & Dr. S.V.Singh (Supervisor)	2007 -08
8. Molecular detection and characterization of MAP isolates from soil and in-silico comparison with reference to other Indian isolates.	126	Ashish Tiwari & Dr. S.V.Singh (Supervisor)	2008-09
9. Molecular basis of association of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , the cause of Johne's disease in animals, in cases of colitis / inflammatory bowel disease (suspected for Crohn's disease) in human population from the Saharanpur region of Uttar Pradesh.	95	Apoorva Panwar & Dr. S.V.Singh (Supervisor)	2008-09
10. Investigate the role of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , in causation of Inflammatory Bowel Disease (suspected for Crohn's disease) in human population of Ghaziabad region of UP, using microscopic, serologic & molecular methods	91	Anurudh Kumar Shishodia & Dr. S.V.Singh (Supervisor)	2008- 2009
11. Comparative evaluation of microscopic examination, serological and molecular assay for the diagnosis of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> , infection in goats from herds endemic Johne's disease.	60	Meeta Solanki & Dr. S.V.Singh (Supervisor)	2008-09
12. Characterization of DRB region of MHC-II gene and its association with MAP bacteraemia in goats with respect special reference to genetic susceptibility of goats.	75	Praveen Kumar & Dr. S.V. Singh (Co-supervisor)	2009- 2010

<b>Books: Eight ( 8 )</b>			
1. <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> infection in animals and public health aspects.	104	S.V.Singh & CSIR, New Delhi	2009
2. Johne's disease status, diagnosis and control: Indian Scenario.	58	S.V.Singh & CSIR, New Delhi	2009
3. Project Profile: Development and characterization of indigenous vaccine and diagnostics for Johne's disease.	18	S.V.Singh & CSIR, New Delhi	2009
4. Johne's disease of animals and public health significance.	18	S.V.Singh & CSIR, New Delhi	2009

5. Jones Rog : Pashu Evum Jan Swasthya mein mahatva.	26	S.V.Singh & CSIR, New Delhi	2009
6. A laboratory manual for the diagnosis of Johne's disease and isolation, identification and characterization of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> .	170	S.V.Singh & CSIR, New Delhi	2009
7. Achievements in Paratuberculosis Research 1984 - 2009	173	S.V.Singh & CSIR, New Delhi	2009
8. Book on Herpes Virus (EHV-1 infection), in Equines: Present scenario and future strategies. NATP project on Veterinary diagnostic of prevalent and emerging diseases	21	B.K.Singh, S.V.Singh & D.D. Kulkarni, CSIR, New Delhi	2002
<b>Reports: 21 as under and 24 (CIRG Annual Reports) = Total 45 reports</b>			
<b>Compendium:</b> Seminar Book of Lead Papers and Abstracts III National Seminar on Small Ruminant Diseases. (2-3, Feb., 1997), CIRG, Mathura	136	ISSGPU, Avikanagar	1997
<b>Monographs: 3</b>			

<b>Significant contributions</b>		
<b>Title</b>	<b>Patent / Registration / Commercialization</b>	<b>Year</b>
1. <b>Patent:</b> Modified 'Indigenous ELISA kit' for the diagnosis of Johne's disease in animals'.	Full patent application filed <b>(Registration No. 751/DEL/2010).</b>	2010
2. <b>Commercialization:</b> Modified 'Indigenous ELISA kit' for the diagnosis of Johne's disease in animals'	NRDC, New Delhi screened & approved for commercialization and has been approached for purchase	2009
3. First ' <b>Therapeutic</b> Indigenous Vaccine' against JD : Inactivated vaccine for the control of Johne's disease in goats and sheep using well characterized & genotyped native <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> 'Indian Bison type' of goat origin. First Indian vaccine against Johne's disease in ruminants	Collaborating with Industry (MIS Biovet, Bangalore) for Indian license and release of vaccine	2007
4. Molecular Characterization of native strain of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> as ' <b>Indian Bison Type</b> '.	' <b>Indian Bison Type</b> ' genotype reported <b>first time in the world</b> from goats sheep, cattle, buffaloes, wild ruminants and human beings in India & not reported outside India.	2005-2007
<b>Diagnostic kits: Indigenous diagnostic kits for the diagnosis of Johne's disease in ruminants and Crohn's disease in human beings</b> 5. Plate ELISA kit: For cattle, buffaloes, goats, sheep serum and milk samples, More than 150 kits sold to 10 users in the country. Rs. 785/- (revised to Rs 1600) per 40 serum & milk 6. PCR Kit: For Cattle, buffaloes, goats, sheep; feces, milk, tissues, blood samples. 7. Culture Kit: For Cattle, buffaloes, goats, sheep; feces, milk, tissues, blood samples. 8. Dot ELISA kit: For Cattle, buffaloes, goats, sheep; feces, milk, tissues, blood samples.	Request for Commercialization of the kits received from (MIS Biovet, Bangalore) and is under process for deciding the modalities          <b>4</b>	2005-2010

<p><b>9. Registration of DNA sequences with GenBank database</b> A total of <b>89 DNA Sequences</b> (related to different regions of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> genome) <b>deposited with GenBank Database.</b></p>	<p>EF514818 - EF514876 (<b>42 seq</b>) EF514848 - EF514864 (<b>17 seq</b>) EU232747 - EU232757 (<b>11 seq</b>) EU714035 - EU714042 (<b>08 seq</b>) EU370554 - EU370563 (<b>10 seq</b>) and EU130943 (<b>01 seq</b>)</p>	<p><b>2005-08</b></p>
<p><b>10. New method of DNA isolation</b> from <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i>: Without chemicals &amp; user friendly–<b>First time</b></p>	<p>Published</p>	<p>2007</p>
<p><b>11. Repository</b> of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> <b>Indian isolates.</b></p>	<p>Maintained at CIRG</p>	<p>2000 - 2007</p>
<p><b>12. National Database on diseases of goats:</b> On important infectious diseases and PPR of goats and sheep in India.</p>	<p>Maintained and yearly upgraded at CIRG</p>	<p>1998 - 2003</p>
<p><b>13. Characterization</b> of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> native ‘Indian Bison Type’ - <b>S 5</b> genotype and reported a <b>new genotype of MAP first time and not reported in the world literature so far.</b></p>	<p>In collaboration with TCGA, New Delhi <b>‘A new Genotype of MAP First time Reported in the World literature’</b></p>	<p>2006</p>
<p><b>14. Characterization ‘Lipid Pattern’</b> of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> native Indian isolates</p>	<p>In collaboration with CJIL, Agra</p>	<p>1995 – 96</p>
<p><b>15. Dot ELISA kit as Spot Diagnostic Test for <i>Brucella melitensis</i>,</b> for goats and sheep with DRDE, Gwalior.</p>	<p>In collaboration with DRDE, Gwalior</p>	<p>1992-94</p>
<p><b>16. Control of <i>Brucella melitensis</i> infection</b> in endemic farm flocks/herds (36% abortion rate)</p>	<p>Disease has been controlled in goat &amp; sheep farms of CIRG</p>	<p>1992-94</p>
<p><b>17. Development of indigenous Vaccine against <i>E. coli</i></b> and control of disease in young kids using ‘Motherhood vaccination’.</p>	<p>Disease controlled in young kids of CIRG farms using this vaccine</p>	<p>1988 – 1990</p>
<p><b>18. Development and validation</b> of ‘Annual Preventive Goat Health Calendar’ for diagnosis of important infectious diseases of goats/sheep.</p>	<p>Commercialization not attempted–farmers use</p>	<p>1984 – 2007</p>
<p><b>19. Plate ELISA kits for Johne’s disease sold</b> to IVRI, CSWRI, PAU, TANUVAS, CIRB, IAH &amp; VB, UP-AHD etc.</p>	<p>Request for commercialization received from M/ S Biovet, Bangalore</p>	<p>2004 - 2008</p>
<p><b>20. Control of JD in flocks and herds: Production doubled and mortality, morbidity and shedding of MAP bacteria reduced by vaccination of flocks and herds</b> (CIRG, Makhdoom; CSWRI, Bikaner and Sheep unit (Jakhrana) Mannavanur and TANUVAS, Chennai, Veterinary coll, Mathura)</p>	<p>Commercialization of JD vaccine underway with Biovet, Bangalore and Bharat Biotech Foundation, Hyderabad with CIRG</p>	<p>2008 - 2011</p>
<p><b>21. Control of PPR in flocks and herds: Actively involved in validation of first indigenous PPR vaccine developed by IVRI, Mukteshwar.</b> Vaccination reduced mortality in goat herds &amp; sheep flocks of CIRG, SAUs, Private farms.</p>	<p>Farm (CIRG, Makhdoom &amp; other farms), farmer’s &amp; has been commercialized</p>	<p>1998 – 2004</p>
<p><b>22. New and Improved version of ELISA kit for diagnosis of Johne’s disease in goats and</b></p>	<p><sup>5</sup> Request for commercialization of kit received from private companies</p>	<p>2007-</p>

<b>sheep by addition of absorption step.</b>		08
<b>23. 'TG' gap</b> in IS1311 PCR-RE (locus 2) as <b>Molecular Signature of 'Indian Bison Type'</b> <i>Mycobacterium avium</i> subsp <i>paratuberculosis</i>	Under process for filling a process patent	2008-09
<b>24. Novel one step method</b> for the detection of <b>'Indian Bison type'</b> strains from other MAP strains and <b>'Bison type'</b> strains of MAP.	Microbiology laboratory, CIRG, Makhdoom	2007-09
<b>25. Nodal lab</b> for Johne's disease in India: Microbiology laboratory of CIRG has been functioning as Nodal lab for last 20 years for the diagnosis, control and training of man power with respect to Johne's disease in India	Microbiology laboratory, CIRG, Makhdoom	1989-2009
<b>26.</b> Standardized PCR based detection of <i>Mycobacterium avium</i> subsp <i>paratuberculosis</i> in blood samples	Microbiology laboratory, CIRG, Makhdoom	2007-08
27. Milk PCR standardized for <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> presence 111 raw and pasteurized milk samples.	Microbiology laboratory, CIRG, Makhdoom	2003-04
28. Tissues PCR standardized for <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> presence in tissue samples.	Microbiology laboratory, CIRG, Makhdoom	2003-04
29. Characterization of DRB region of MHC-II gene and its association with MAP bacteraemia in goats with respect special reference to genetic susceptibility of goats. Three types of genotype (BB, bb, Bb) with respect to DRB region of MHC-II gene was reported from Jamunapari goats	Correlation between genetic susceptibility of BB profile as compared to Bb and bb with respect to MAP infection was reported in the study. BB genotype of DRB region of MHC-II gene was reported first time from India in this study from Jamunapari breed of goats Microbiology laboratory, CIRG, Makhdoom	2009-2010
<b>Institutional &amp; personal recognition</b>		
<b>1.</b> B.V.Sc. & AH: Scholarship for all 4 years	<b>Four</b>	1979-1981, Veterinary Coll. (C.S.A.Univ. Kanpur for Ist (2 years) & IIIrd (2 years) positions..
<b>2.</b> Book prizes in three subjects	<b>Three</b>	1979-1981, Veterinary Coll. & C.S.A.Univ. Kanpur
<b>3.</b> Captain of Cattle Judging Team	<b>One</b>	All India Cattle Fair in 1981 at Bharatpur, Rajasthan
<b>4.</b> Chancellor Gold Medal for B.V.Sc. & AH.	<b>One</b>	1981, C.S.A.Univ. Kanpur
<b>5.</b> ICAR (New Delhi) junior research fellowship for M. V .Sc. (Veterinary Bacteriology)	<b>One</b>	<b>1981-83</b> , Veterinary coll. & C.S.A.Univ. Kanpur
<b>6.</b> Third Prize at paper reading contest held at PAU, Ludhiana	<b>One</b>	1980
<b>7.</b> 'Jawaharlal Nehru Award' for Ph.D Degree in Veterinary Science	<b>One</b>	Awarded prestigious ' <b>Jawaharlal Nehru Award</b> ' for outstanding post-graduate research for 1998 by ICAR, N. Delhi on <b>Thesis Topic</b> 'Diagnosis of Paratuberculosis in goats'.
<b>8.</b> Helping Hand Fellowships for 9 <sup>th</sup> International Colloquium on paratuberculosis at Japan.	<b>6</b> Three (Self & 2 Ph.D. std.)	Awarded three helping hand fellowships by International Association of Paratuberculosis to attend 9 <sup>th</sup> ICP at

		Japan from 28 Oct, to 3 <sup>rd</sup> Nov., 2007
9. Invited Keynote Speaker at 9 <sup>th</sup> International Colloquium on paratuberculosis at Tsukuba, Science City, Japan, on 1.11.2007.	One	Invited by organizers of 9 <sup>th</sup> International Colloquium on Paratuberculosis (Japan), as Keynote Speaker in Session E (1) on Epidemiology & control strategies on topic, ' <b>Current Status &amp; Control Strategies for Caprine Paratuberculosis in India</b> '
10. Free registration at 9th ICP, Japan	Three (Self & 2 Ph.D. std.)	At 9 <sup>th</sup> International Colloquium on paratuberculosis at Tsukuba, Science City, Japan.
11. Two years Honorary membership awarded by IAP, USA	Three (Self & 2 Ph.D. std.)	International Association of Paratuberculosis, USA (2007-09)
13. Invited to deliver a status paper and to represent India and Asia, at Spain from 28 – 30, October, 2004.	One	In 'Panorama of sheep and goat dairy sectors, Asia and India', at International Symposium on, 'Future of sheep & goat dairy sectors.
14. Honorary Membership of International Society	One	Awarded 1 year Honorary membership twice for 2002-03, by <b>Wildlife Disease Association</b> , PO. Box 1897, Lawrence, KS, USA
15. Representing South Asia as Regional Director and as Director (South Asia) on IGA board of Directors from 2008 upto 2012	One	<b>Regional Director</b> – South Asia ; International Goat Association, USA (2005-2008 & 2008-2012)
16. Gold Medal awarded by IGA, in Pretoria, South Africa	One	During 8 <sup>th</sup> International Goat Conference., held at S. Africa in 2004
17. Representing India on Editorial Board of Small Ruminant Research of Elsevier group	Four years	On Editorial Board of Small Ruminant Research Journal (As health expert, 2002-06)
18. Awarded <b>Travel grant</b> (1000 USD) by John's Disease Integrated Program, USA	One	To present paper at 4th annual conference (17-20, April, 2008), at Michigan. USA
19. Key note address at Health section of 9th International Conference on Goats	One	<b>Queretaro, Mexico</b> (28 Aug to 5 Sept, 2005) at Mexico (Diagnosis & Control of John's diseases: An Indian Experience).
20. Free registration	One	At 10th International Goat Conf., at Queretaro, Mexico (Aug., 2005),
21. Two years Honorary membership awarded by IAP, USA	Three (self + 2 students)	International Association of Paratuberculosis, USA (2007-2009)
22. Invited by UP-CST to be Guest Speaker in 'Science Year of UP'	One	UP Council of Science and Technology, Lucknow invited to delivered talk on 'Safe drinking water, health and hygiene' at Science Day celebrated at Government college, Bijnore on 21.12.2004.
23. Invited as expert on John's disease of domestic animals	7 One	Invited as expert on John's disease of domestic animals to attend, and provide expert opinion in the Brain

		storming session on TB JD, and sexually transmissible Diseases (STDs) in Bovines held at IVRI, Izatnagar from 11.2.05 to 12.2.05, organized by CADRAD, IVRI.
24. Invited to give presentation on prevalence, diagnosis and control of Johne's disease in animals before Ms Nita Chaudhary, Deputy Commissioner.	One	Invited to give presentation on prevalence, diagnosis and control of Johne's disease in animals to Additional Secretary (AH & Dairying), Animal Husbandry Commissioner and Deputy Commissioner (livestock Health), in the Dept. of Animals Husbandry and dairying, Ministry of Agriculture, New Delhi on 11.4.05.
25. Member of Expert Committee on diagnosis and control of Brucellosis at Central Sheep Breeding farm, Hisar.	One	Invited by Ministry of Agriculture, 9-11 November 05, as member of the Expert Committee to advise on diagnosis and control of Brucellosis in goats and sheep with reference to Central Sheep Breeding Farm, Hisar.
26. Invited to present lead papers	Five	Invited to present lead paper on ' <i>Mycobacterium avium</i> subspecies <i>paratuberculosis</i> infection in ruminants in India: Diagnosis and control measures' at National Seminars (ISSGPU), 3-5, Feb., 2007, ASCAD Symposium 10-11, March 2007. Regional Disease Diagnostic Center, Dept. of Animal Husbandry, Udaipur, Rajasthan, Seminar by UP-AHD, Lucknow on 'Conservation of Jamuanpari goats' from 28 – 29, Sept., 2006 at LUCKNOW, Seminar by UP, Animal Husbandry Dept. on 13.02.07 at Etawah. ASCAD seminar, Mathura.
27. Best Paper Award (III)	One	National seminar on 'Emerging diseases of small ruminants and their containment under WTO regime, Feb., 3-5, 2007, (ISSGPU), Mathura.
28. Best Paper Award (I)	One	National seminar on 'Rural India Developmental Alternatives: Sectoral Convergence for livelihood security', Jan., 16 – 18, 2009, (Society for community mobilization for sustainable development), CIRG, Makhdoom.
29. Oral presentation awarded to one paper in Public Health section of the 7 papers submitted,	One	Paper presented at 10th International Colloquium on Paratuberculosis at Minnesota State University, Minnesota (9 Aug, to 13th Aug, 2009
		Fellowship awarded to attend and



<b>30. Helping Hand Fellowships</b> (2 Ph.D. students, International Association of Paratuberculosis, USA, Aug, 2009.	Two students	present papers at 10th ICP, Minnesota, USA (\$1500, free registration & 2 years membership of IAP each).
<b>31. First Rank in All India CSIR-SRF, New Delhi examination 2009 for Ph.D. fellow-ship</b>	Ph.D., student	First rank in the All India competition for the year 2009. Fellowship awarded for two years (2009 – 2011)
<b>32. Invited to join Johne's disease Integrated Program of USA for the control of Johne's disease. Aug., 2009.</b>	With students	At JDIP meet held at Minnesota, USA,
<b>33.'Indigenous ELISA kit' for JD</b>	One	Full Patent submitted.
<b>34.'Indigenous ELISA kit' for JD</b>	One	NRDC, New Delhi invited for the presentation of technology for <b>commercialization</b>
<b>35. Invited to join International initiative on Bio-control of Johne's disease by Dr. Irene Grant of Queens University, Belfast, UK</b>	Three partners	Dept. for International Development and Biotechnology & Biological Sciences Research Council of UK for funding under program 'Combating Infectious Diseases of Livestock for International Development (CIDLID)
<b>36. Invited for Oral presentation by Director, CSWRI on 'Diagnosis and control of JD' to CSWRI faculty on 1.10.09.</b>	One	Director, CSWRI organized a meeting of the scientists of CSWRI at Avikanagar to give presentation for the control of JD using CIRG model in Chokla breed of sheep at Avikanagar.
<b>37. Request for JD vaccine for control of JD in SRC, Mannavanur and WRC, Bikaner received.</b>	Two	Vaccination of the entire sheep flock and sheep sick due to JD was done at SRC and WRC centers of CSWRI, Avikanagar at Mannavanur and Bikaner, respectively in 2007.
<b>38. Request for 'Indigenous ELISA kit' received from 15 institutions across the country for the diagnosis of JD in animals.</b>	Two	The first 'Indigenous ELISA kit' for diagnosis of JD in animals was sold to ICAR, Central and State Govt. institutions across the country.
<b>39. Specific help by HOD for training, cultures of MAP &amp; standardization of PCR for specific sequences of <i>M bovis</i> Received from <b>division of Standardization at IVRI, Izatnagar, UP.</b></b>	One	Problem in the specific PCR; test was resolved by intervention of Microbiology la, CIRG, Makhdoom.
<b>40. The request help in conducting Research and training for M.V.Sc., students and teaching staff on different aspects of <i>Mycobacterium avium</i> subspecies <i>paratuberculosis</i> (Johne's disease) was received from Veterinary colleges at Ludhiana, Mathura, Bikaner, Dantiwada, Pondicherry, Jabalpur And Chennai, and IVRI, Izatnagar, SRRDL, Bangalore and commercial firms like M/S Biovet, Bangalore and Number of Private Institutions received.</b>	By team (self+ 3 students)	Following staff & students were trained from 2002 to 2009 Veterinary Coll., Ludhiana: 2 (twice) +3 Veterinary College, Mathura: 2+ 10 Veterinary College, Bikaner: 0+ 1 Veterinary College, Dantiwada: 0+1 Veterinary College, Pondicherry: 0+ 1 Veterinary Coll., Chennai: 1+0 (2-times) Veterinary College, Jabalpur: 0+ 1 IVRI, Izatnagar: 0+ 1 SRRDL, Bangalore: 1 =0 Commercial firm M/S Biovet, Bangalore: 1+2 Private Institutions: 0+12

41. Rapporteur in session entitled "Health care and Management of livestock during natural disasters and calamities" .	Self	National symposium on technological interventions for livestock improvement & Production thrust: disaster management, ISSGPU, Avikanagar (17-19 Feb, 2006)
42. Award for Excellence in field work at Madhubani, Bihar by PI ATMA project & DM, Madhubani.	One	Treatment, prophylaxis, vaccination and Consultancy services had been provided at Madhubani, Bihar, 2001.
43. Best Oral Paper Presentation Award (II):	Ph.D., student, self & others	For article 'Genotypic profile of <i>Mycobacterium avium</i> subsp <i>paratuberculosis</i> in human beings in India' by Singh AV et al., at UP MICROCON 2010 held from 13-14 March 2010, 6 <sup>th</sup> annual conference of Association of Medical Microbiologists UP chapter at NJIL-OMD (ICMR) Agra..
44. Invited to deliver an expert lecture on 'Indigenous paratuberculosis vaccine on 10 March 2010,	Self	Invited by department of Biotechnology, School of Basic Sciences, ARNI University, Indora at Kathghar Dist Kangra, HP.
45. Invited to present lead paper on recent advances on development of Johne's disease of Goats: the case of India under section animal health	Self	Invited by Chairman organizing committee 9 <sup>th</sup> International conference on goats Held at Querataro Mexico. 31 <sup>st</sup> Aug-5 Sep 2008, under central theme of 'Sustainable goat production challenges & opportunities of small & large enterprises'.
46. Invited to present lead paper on diagnosis and control of Johne's disease in animal at the national seminar on recent advancements in the diagnosis of the diseases of livestock and poultry	Self	Invited by organizers of ASCAD program of Govt., of India. held at DUVASU Mathura on 20 Feb 2010. Letter no. 612/path/19/01/2010.
48. Invitation to serve as distinguished Guest faculty for CAFT course. On 'Modern trends in veterinary vaccines and diagnostics for the control of infectious diseases' (March 5-25, 2010).	Self	Under auspices of ICAR center of advanced faculty training on the topic 'Diagnosis and strategies for the controlling of the Johne's Disease of bovine' by Department of Microbiology by ICAR center of Advance faculty training CAFT, CCSHAU Hisar, letter No. VMI/CAS-23/CAFT-1/10/779.
49. Request for JD vaccine for comparative study from Washington State University, USA.	CIRG and self	Request received from Dr. William Davis, Dept. of Microbiology to compare our vaccine with his mutant vaccine against JD
50. Request for training on molecular diagnosis JD from University of Shiraz, Iran.	CIRG and self	Professor (Dr.) Masoud Hagkhak of Shiraz University, Iran requested for training in Oct., 2010.
51. Foreign scientists visited JD laboratory at CIRG, Mahdood to see progress of work on different aspects of Johne's disease, especially	<sup>10</sup> CIRG and self	Dr. R.J.Greenstein, MD, New York – twice. 2005 and 2010 Dr. Fung Chang, Cornell Univ US, 2009 Dr. Ingrid Olsen, Norway – 2009

diagnostics and Therapeutic Vaccine, developed by CIRG, Makhdoom.		Dr. E.Momotani, IAH, Japan -2009 Dr. Ian J Links, Australia – 2010
52.Three oral presentations at 6 <sup>th</sup> JDIP conference, Denver, Colorado, USA from Jly, 11-22, 2010.	Self & 3 students	Oral presentations at International conf. was great honour for me.

<b>In-service Awards/Recognition</b>				
<b>Name of the Award / Recognition / Reviewer</b>	<b>Awarding Organization</b>	<b>Year</b>	<b>National / International</b>	<b>Individual / collaborativ</b>
1. EDITORIAL BOARD Health Section	Elsevier, The Netherlands	2004 - 2008	Small Rumin. Research J.	Individual
2.Regional Director,South Asia	IGA, USA	2004 Cont.	Int. Goat Assoc.	Individual
3.Honorary Membership	Wildlife disease association, USA	2002	Wild Life Dis. Assoc.	Individual
4. Member of expert committee on Brucellosis control	Min. of Agric. & Dairying	9-11 Nov, 2005	National	Individual
5. As expert on JD in Brain storming on TB JD, and STDs	CADRAD, IVRI, Izatnagar	11-12 Feb, 2005	National	Individual
6. Presentation on National Scenario on Johne's disease	Min. Agric. & Dairying, N.Delhi	11 Apr, 2005.	National	Individual
7. Reviewer	Indian J of Ani. Sci., Indian J of Exp Biol, Indian J of Gastro-enterol, PLoS ONE online Journal	2002 - 2009	National	Individual
8. Microbiology lab of CIRG got recognition as resource lab for JD in India	Government Institutions	1989 to 2010	Indian	Collaborative
9. Sold ELISA kits	Government Institutions	2004 - 2009	Indian	Collaborative
10. Travel grant: for 6 <sup>th</sup> Annual meet of JDIP, Denver, USA	NGO, Vrindavan	2010	Indian	Self

<b>Institutional Research Projects</b>				
<b>Type of project</b>	<b>Details such as Title, PI/Co-PI, etc.</b>	<b>Durati on</b>	<b>Accomplishments</b>	<b>Individual / Collaborative</b>
1. Institutal project	GH 5.05: Studies on different aspects of Johne's disease and its prevention in goats	1985 – 1991	Successfully completed. Culture of bacilli standardized. Screening of the farm herds with fecal culture done first time in the country.	Collaborative (As CoPI)
2. Institutal project	GH 5.04: Studies on various aspects of pneumonia and enteritis in goats with special reference to neonatal mortality	1985 - 1991	Causes of Pneumonia and enteritis in neonatal kids identified. Relationship of season with sex, age and birth weight and breed of goats established.	Collaborative (As CoPI)
3. Institutal Project	GH 5.06: Prevention of Enterotoxigenic <i>E.coli</i> infection in kids.	1991 – 1994	Pathogenic and toxigenic <i>E.coli</i> strains sero-typed. Multi-component motherhood vaccine developed & used to control disease in kids	Collaborative (As CoPI)

4. Institutional Project	GH 5.07: Studies on <i>Mycoplasma agalactiae</i> infection in goats	1989 – 1991	<i>Mycoplama mycoides</i> subspecies <i>mycoides</i> (LC) identified as cause of arthritis and lameness in goats and kids.	Collaborative (As PI)
5. Institutional Project	GH 5.08: Monitoring, surveillance and forecasting of important goat diseases.	1990 - 1997	State-wise database on retrospective information from different states of country on goat disease prepared. Dot ELISA, plate ELISA and micro CFT used to screen and control brucellosis in herds and flocks of CIRG.	Collaborative (As CoPI)
6. Institutional project	GH 5.09: Studies on the development of immuno-diagnostic and vaccine against Johne's disease ( <i>Mycobacterium paratuberculosis</i> ) in goats and sheep	1991- 1994	The causative bacilli (MAP) was successfully isolated from feces and tissues of goats & sheep was characterized on the basis of cultural characteristics. Correlation of disease with production parameters, infertility and endocrine insufficiency studied.	Collaborative (As CoPI)
7. Institutional Project	GH 15.01: Monitoring and Sero-surveillance of important infectious diseases of Livestock and poultry on seasonal basis	1997 - 2000	Active survey of disease and diagnosis of outbreaks at Micro (farm) level and Macro - level (farmers) level conducted. Documentation of goat disease Correlation of disease with meteorological data.	Collaborative(As CoPI)
8. Institutional Project	GH 15.01: Monitoring and surveillance of important infectious diseases of goats	2000- 2002	Outbreaks of PPR documented across the country and controlled. Johne's disease identified as primary cause of losses in productivity.	Collaborative(As PI)
9. Institutional Project	Field trials of the 'indigenous vaccine' against Johne's disease in goats and sheep farms located in different agro-climatic regions of the country	April, 2007- March, 2008	Field trials of vaccine in herds showed very high improvement in goats. Clinical trials extended to breeding herds and flocks of CIRG and CSWRI (Bikaner, Mannamanuvar).	Collaborative(As CCPI)
10. Institutional Project	XI/GH-2.3 Control of Brucellosis in goats by molecular Diagnosis and epidemiology	April 2007- cont.	Molecular typing of local strains of Br. melitensis isolated from, diagnostics developed (ELISA & PCR)	Collaborative (As PI)

## H. Externally Funded Projects

PI or Co-PI	Title of Project (s)	Year	Amount (Lakhs)	Funding agency
1. Co- PI	Studies on the development of immuno-diagnostic and vaccine against Johne's disease ( <i>Mycobacterium paratuberculosis</i> ) in goats and sheep.	1994 - 1997	18.20	Dept of iotechnology, New Delhi
2. Cooperating Center PI	Animal Health Information System through Disease Monitoring and Surveillance	2000 – 2003	21.30880	NATP: (World Bank funded) New Delhi
3. PI	Development of inactivated vaccine using native <i>Mycobacterium avium</i> subspecies <i>paratuberculosis</i> isolates against Johne's disease in sheep and goats.	2004- 07	16.4 + CIRG share	DSIR, New Delhi

4. PI	Molecular diagnosis of Johne's disease of goats by PCR & DNA probes.	2004 – 07	4.5 + CIRG share	UP-CST, Lucknow
5. PI	Development and characterization of Indigenous vaccine and Diagnostics for Johne's Disease	2008 - 2011	574.9	NMITLI, CSIR, N.Delhi, M/S Biovet, Banglore & BBF, Hyderabad
6. CO- PI	Goat Husbandry based integrated approach for livelihood security in disadvantaged districts of Bundelkhand region	2008 - 2012	516.519	NAIP (World bank funded)
7. Cooperating Center PI	<b>ICAR outreach program on Zoonotic diseases</b> 'Zoonotic potential of <i>Mycobacterium avium</i> sp. <i>paratuberculosis</i> as cause of Inflammatory Bowel Disease (Crohn's Disease) in human beings	2009-2012	70	ICAR Network Project

## Publication

### a. Total Publications (Research & Review Articles)- 97

### b. Selected Publications on Paratuberculosis

1. **Singh, S.V.**, Singh, P.K., Singh, A.V., Sohal, J.S., Gupta, V.K., Vihan, V.S. 2007. Comparative efficacy of an indigenous 'inactivated vaccine' using highly pathogenic field strain of *Mycobacterium avium* subspecies *paratuberculosis*, 'Bison type' with commercial vaccine for the control of Capri-paratuberculosis in India. *Vaccine*. 25: 7102-7110.
2. Sohal, J.S., **Singh, S.V.**, Singh, P.K., Singh, A.V. 2010. On the evolution of 'Indian Bison type' strains of *Mycobacterium avium* subspecies *paratuberculosis*. *Microbiological Research* 165:163-171.
3. **Singh, S.V.**, Singh, A.V., Singh, R. Sandhu, K. S., Singh, P. K., Sohal, J.S., Gupta, V. K., Vihan, V.S. 2007. Evaluation of highly sensitive indigenous milk ELISA kit with fecal culture, milk culture and fecal-PCR for the diagnosis of bovine Johne's disease (BJD). *Comparative Immunology Microbiology and Infectious Diseases*. 30: 175-186.
4. Sharma, G., **Singh, S.V.**, Sevilla, I., Singh, A. V., Whittington, R. J., Juste, R. A., Kumar, S., Gupta, V. K., Singh, P. K., Sohal, J. S. Vihan, V. S. 2008. Evaluation of indigenous milk ELISA with m-culture and m-PCR for the diagnosis of Bovine Johne's disease (BJD) in lactating Indian dairy cattle. *Research in Veterinary Science*. 84 (1): 30-37
5. **Singh, S. V.**, Singh, A. V., Singh, R., Sharma, S., Shukla, N., Misra, S., Singh, P. K., Sohal, J. S., Kumar, H., Patil, P. K., Misra, P., Sandhu, K.S. 2008. Sero-prevalence of Johne's disease in buffaloes and cattle population of North India using indigenous ELISA kit based on native *Mycobacterium avium* subspecies *paratuberculosis* 'Bison type' genotype of goat origin. *Comparative Immunology Microbiology and Infectious Diseases*. 31 (5): 419-433.
6. Yadav, D., **Singh, S. V.**, Singh, A. V., Sevilla, I., Juste, R. A., Singh, P. K. Sohal, J. S. 2008. Pathogenic 'Bison-type' *Mycobacterium avium* subspecies *paratuberculosis* genotype characterized from riverine buffalo (*Bubalus bubalis*) in North India. *Comparative Immunology Microbiology and Infectious Diseases*. 31(4): 373-87).
7. Sohal, J. S., Sheoran, N., Narayanasamy, K., Brahmachari, V., **Singh, S.V.**, Subodh, S. 2009. Genomic analysis of local isolate of *Mycobacterium avium* subspecies *paratuberculosis*. *Veterinary Microbiology*. 134 (3-4): 375-82.
8. Kumar, S., **Singh, S. V.**, Singh, A. V., Singh, P. K., Sohal, J. S., Maitra, A. 2010. Wildlife (*Boselaphus tragocamelus*)–small ruminant (goat and sheep) interface in the transmission of 'Bison type' genotype of *Mycobacterium avium* subsp. *paratuberculosis* in India. *Comparative Immunology Microbiology Infectious Diseases*. 33: 145-159.
9. Sohal, J. S., **Singh, S. V.**, Subhodh, S., Sheoran, N., Narayansamy, K., Singh, P. K., Singh, A.V. Maitra, A. 2009. *Mycobacterium avium* subspecies *paratuberculosis* diagnosis and geno-typing: Genomic insights. *Microbiological Research* . 164:330-337.
10. Kumar, P., **Singh, S. V.**, Bhatiya, A. K., Sevilla, I., Singh, A.V., Whittington, R. J., Juste, R. A., Gupta, V. K., Singh, P. K., Sohal, J. S. Vihan, V. S. 2007. Juvenile Capri-Paratuberculosis in India; Incidence and characterization of by six diagnostic tests. *Small Ruminant Research*. 73, (1-3) :45-53.
11. Kaur, P., Folia, G., **Singh, S.V.**, Patil, P.K., Sandhu, K.S. 2010. Molecular detection and typing of *Mycobacterium avium* subspecies *paratuberculosis* from milk samples of dairy animals. *Tropical Animal Health and Production*. DOI 10.1007/s11250-009-9521-6.
12. **Singh, S.V.**, Singh, P.P., Singh, N., Gupta, V.K. 2000. Characterization of lipid pattern of *M. paratuberculosis* isolated from goats and sheep. *Indian J. Animal Sciences* 70 (9): 899-903.

13. Sevilla, I, **Singh, S. V.**, Garrido, J.M., Aduriz, G., Rodriguez, S., Geijo, M.V., Whittington, R.J., Saunders, V., Whitlock, R.H., Juste, R.A. 2005. Molecular typing of *Mycobacterium avium* subspecies *paratuberculosis* strains from different hosts and regions. *Scientific and Technical Review (OIE)*: 24 (3): 1061 – 1066.
14. Shankar H. **Singh, S.V.**, Singh A.V. Singh P.K. Sohal J.S., Greenstein R.J. 2009. Presence, characterization and genotype profile of *Mycobacterium avium* subspecies *paratuberculosis* from un-pasteurized individual and pooled milk commercial pasteurized milk and milk products in India by culture PCR and PCR-REA methods. *International Journal of Infectious Diseases*: 14: e121-e126.
15. Singh, A.V., **Singh, S.V.**, Makharia, G. K., Singh, P.K., Sohal, J.S. 2008. Presence and characterization of *Mycobacterium avium* subspecies *paratuberculosis* from clinical and suspected cases of Crohn's disease and in the healthy human population in India. *International Journal of Infectious Diseases*. 12: 190-197
16. **Singh, S. V.**, Sohal J. S. Singh P. K. Singh A. V. 2009. Genotype Profiles of *Mycobacterium avium* subspecies *paratuberculosis* isolates recovered from animals commercial milk and human beings in North India. *International J of Infectious Diseases* 13:e221-227.
17. Sohal, J.S., **Singh, S. V.**, Tyagi, P., Subodh, Swati, Narayanswami, K., Singh, P.K, Singh, A.V. 2008. Immunology of Mycobacterial Infections: with special reference to *Mycobacterium avium* subspecies *paratuberculosis*. *Immunobiology*. 213: 585-598
18. **Singh, S.V.**, Singh, P.K., Singh, A.V., Sohal, J.S., Subodh, S, Narayanasamy, K. 2007. Non-chemical method of DNA recovery and characterization of *Mycobacterium avium* subspecies *paratuberculosis* using IS900 PCR. *Indian .J. of Experimental Biology*. 45: 812-816.
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20. Singh, N., Vihan, V.S., Sengupta, U., **Singh, S.V.** 1999. Evaluation of enzyme- linked immuno-sorbent assay using wild type species specific sonicated antigen for diagnosis of *Mycobacterium paratuberculosis* in goats. *World Review of Animal Production*. 34 (2): 78-81
21. Vihan, V.S., Singh, .N., **Singh, S.V.** 1997. Evaluation of combined therapeutic regimes in the treatment of natural form of paratuberculosis in goats. *Indian J. of Veterinary Medicine*. 17: 108-110.
22. **Singh, S.V.** Singh, N. 2000. Effect of climate on Johne's disease incidence in goatherds. *Indian J. Animal Sciences*. 70 (5): 492 - 493
23. Singh, N., **Singh, S.V.**, Vihan, V.S., Sood, S. B. 2000. Management practices and Johne's disease incidence in goatherds. *Indian J Animal Sciences* 70 (3): 263-264.
24. Sohal, J. S., Subodh Swati, **Singh, S. V.**, Singh, A. V., Singh, P. K. 2009. Interspecies sharing of 'Indian Bison type' *Mycobacterium avium* subspecies *paratuberculosis* as revealed by the 'Short Sequence Repeat Typing'. *Indian J of Animal Sciences*, 79 (3): 272-274.
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29. **Singh, S.V.**, Singh, P.K., Singh, A.V., Sohal, J.S., Sharma, M.C. 2010. Therapeutic effects of a new 'Indigenous Vaccine' developed using novel native 'Indian Bison type' genotype of *Mycobacterium avium* subspecies *paratuberculosis* for the control of clinical Johne's disease in naturally infected goatherds in India. *Veterinary Medicine International*. doi:10.4061/2010/351846.
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