

## ACHYUT SHARMA, Ph.D.

### **EDUCATION & CREDENTIALS**

**Ph. D. in Microbiology**, Heriot Watt University, Edinburgh, UK. Dissertation Area; Antimicrobiological activities of Biocides compounds.

**Postgraduate Diploma in Industrial Microbiology** Heriot Watt University, Edinburgh, UK  
**Analytical Performance and Comprehension of Methodologies Relative to PCR**, EMSL Analytical Inc., Milpitas, CA

**Laboratory Analysis of Environmental Microorganism**, EMSL Analytical Inc., Atlanta, GA

### **EXPERIENCE**

2012 Director of Research Enzcycle Lab LLC

2003 – 2011 **Technical Manager, EMSL Analytical, Inc.**, Indianapolis, IN

- Routine operation and maintenance of laboratories and bench works
- Client consultation.
- Preparation of Project proposal
- Isolation and identification of environmental and food pathogenic microorganisms.
- Indoors Air quality.
- Isolation and I identifications microorganisms from different products such as industrial, medical devices, Pharmaceutical, air, water, food and other environmental samples
- Isolation and identification of pathogens from consumer products.
- USP 797 Testing
- Efficacy testing of antimicrobial compounds and natural products.
- Evaluating samples and recommending better solutions to clients.
- Quality control/ quality assurance for effective solutions.
- Research into new methods in microbiological testing
- Training to the analysts
- Calibration and Validation of equipments in microbiological laboratories

2002 – 2003 **Senior Microbiologist EMSL Analytical, Inc.**, Milpitas, CA

- Routine operation, maintenance of laboratories and bench works.
- Testing and microbial identifications from different products such as air, water, food and other environmental samples.
- Participate in Microbiology Proficiency Testing Programs
- Evaluating samples and recommending better solutions to clients.
- Quality control/ quality assurance for effective solutions.
- Research into new methods in microbiological testing.

### **Application Experience**

#### **General**

- Design, setup, maintenance and coordination of microbiological laboratories.
- Good manufacture practices (GMP)
- Good laboratory practices (GLP)
- Knowledge of ISO 9001, USP 797 testing, EPA and FDA regulations
- Application Scientist
- Analysis of microorganisms by direct methods - microscopic Gram staining and traditional techniques.
- Morphological, and physiological characterization of bacteria and mold
- Culture and isolation of bacteria and mold by aseptic techniques.
- Different methods of sterilization.
- Identification of bacteria and mold by:
  - Biochemical tests
  - Serological tests

- Automated identification system (Biolog, Vitek)
- Micro ID, API 20, Techniques.

### **Industrial Microbiology**

- Anti microbial activity of different Biocide and natural products.
- Anti microbial test in different physical & physiological condition of Microorganisms.
- Challenge testing.
- Biofilm extraction and its effects on Biocides activities
- Comparative studies of Minimal Inhibitory Concentration (MIC) of different Biocides against bacteria and mold
  - Quaternary ammonium compounds
  - Biguanides,
  - Glutaraldehyde,
  - Phenolic compounds
  - Homogenate compounds
  - Isothiazolones
  - Ampholytic surfactant
- Efficacy test of above listed Biocides against Slime forming Bacteria.
- Isolation of Biocides Resistant Bacteria.
- Using of Biocides in combination to control Resistant Bacteria.
- Study of phenotypic and genotypic resistance to Biocide
- Molecular basis of Biocide resistance microorganisms
- Test of Biocide action in combination
- Factors affecting the activity of antimicrobial agents
- Good manufacturing practice (GMP).
- Quality control and quality assurance in microbiology

### **Environmental monitoring**

- Surface, settling
- Air Cassette (Aerosol tests)
- Indoor air quality
- Bulk samples
- Swab samples
- Contact plate
- Gravity plate

### **Viable culture of microorganisms**

- Anderson plate culture
- Pour plate culture
- Streak plate culture
- Bioburden test
- Aerobic plate count

### **Qualitative and quantitative analysis of drinking, and industrial water**

- Multiple tube test method
- Membrane filter method
- Enzyme substance method
- Heterotrophic plate count method

### **PUBLICATIONS**

- Sharma B.K. and Sharma A.P. (2000). **Seasonal variation of air microflora of Katmandu, Nepal** Medical College Journal vol.1, no.1, pp. 23-28.
- M. Maharjan and Sharma A.P (2000) **Bacteriological Quality Ground Water in Urban Patan and Antibiotic Sensitivity against isolated enteritis bacteria.** Journal of Nepal Medical Association: 39:pp 269-274
- Sharma B.K. Sharma, A.P and Pokheral, A. (1999). **Air pollution and its effect on respiratory disease in Katmandu,** Nepal of Journal of Science and Technology, vol.3. No.1 pp.115-122.
- M. Maharjan and Sharma A.P (1999) **Quality of ground water and it's impacts on the public health in urban Patan,** Tribhuvan University Journal, Volume XXII, No. 2 pp (1-10)

- Thapa M. and Sharma A. P. (1999). **Study of Bacteriological Treatment of Water for Rural Communities, Nepal.** Journal of Science and Technology. 1 (1999) 27 - 34.
- Shrestha, S and Sharma A. P. (1998). **Study of physical composition and Bacteriological analysis of solid waste of Katmandu city.** Journal of Nepal Medical Association. Vol. 37, 125 pp. 407 - 412.
- Sharma, B.K. and Sharma, A.P. (1997) **Study on air bacterial flora of Katmandu Valley, Journal of Nepal Medical Association,** vol. 36, no. 124, pp. 373-377.
- Shrestha, G. and Sharma, A.P. (1996). **A preliminary study of allergens produced by Alternaria SP. And Aspergillus fumigates,** Indian Journal of Allergy and Apple. Immunology. Vol. 10, no. 1 pp. 5-9
- Devkota, S.R. and Sharma, A.P. (1995). **Atmospheric fungi of Katmandu, Nepal.** Journal of Institute of Medicine, vol12, no. 2, pp. 115-124.
- Battersby, N.S. Stewart, D.J. & Sharma, A.P. (1984). **A Simple Most Probable Number Method for the Enumeration of Sulphate Reducing Bacteria in Biocide Containing Water.** Journal of Applied Bacteriology. 58, 425-429.
- Sharma, A.P., Battersby, N.S. & Steward, D.J. (1987). Chapter on **“The Techniques for The evaluation of Biocide activity Against Sulphate-Reducing Bacteria”** in Preservatives in the Food. Pharmaceutical and Environmental Industries. No. 22, Society of Applied Bacteriology (SAB),

#### **AFFILIATIONS**

Member, **American Society of Microbiology**

Founder Member, **Nepalese Society of Microbiology**

Member, **Alliance for the Prudent Use of Antibiotics (APUA), Chapter- Nepal**

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