

IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES ▼
HUMAN RESOURCES ENTERPRISE

MICROBIOLOGIST

DEFINITION

Performs professional scientific laboratory work examining and analyzing food, feeds, drugs, water, blood, dairy products, environmental specimens or other organic materials to ensure conformity with public health, consumer protection, or business standards or regulations; performs related work as required.

The Work Examples and Competencies listed are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

WORK EXAMPLES

Tests food and water samples and environmental specimens in order to isolate, identify, and analyze the quantity of micro-organisms by performing qualitative analysis procedures such as plating, incubation, slide preparations, etc.

Tests water samples and environmental specimens in order to determine the quantity of microorganisms, and suitability for drinking.

Prepares samples for analysis in order to facilitate the procedures by weighing samples, preparing standard dilutions of reagents, setting up flasks and other equipment, etc.

Analyzes feeds and food products to determine kinds and concentrations of vitamins and antibiotics present to ensure compliance with state and federal regulations governing label claims.

Tests for total solids in milk, moisture content and fat residue in butter, and extraneous matter in other food products in order to ensure compliance with regulations governing quality and labeling of these products.

Performs chemical analysis of drugs in feed to determine if feed composition adheres to state and federal regulations governing the mixture of drugs in feed and the labeling thereof.

Maintains accurate records in order to document analysis by recording samples analyzed, procedures used, and results obtained.

Maintains work area and equipment free of chemical and microbiological contamination to insure valid test results and safety of the work environment.

Keeps acquainted with current developments in the field of microbiology by reviewing literature and attending staff meetings, conferences, and classes.

Maintains the growth and regeneration of bacterial cultures in order to provide a supply for future analyses.

Performs mathematical and statistical calculations throughout analysis procedures in order to determine concentrations and evaluate results by computing ratios, frequency distributions, etc.

Examines specimens from suspect hogs in order to identify tuberculosis by applying fluorescent microscopy procedures.

COMPETENCIES REQUIRED

Knowledge of agency laboratory safety practices for handling equipment, chemicals and glassware.

Knowledge of laboratory clean-up procedures used to prevent chemical and microbiological contamination.

Knowledge of various methods and procedures used to perform quantitative analysis of microorganisms in dairy samples, environmental specimens, food samples, and water.

Knowledge of the methods and procedures used to identify pathogenic organisms in water, other environmental specimens, food samples, and dairy products.

Knowledge of the correct methods for operating and cleaning laboratory equipment such as chromatographs, microscopes, etc.

Knowledge of the principles of microbiology.

Knowledge of current laboratory practices and procedures used in microbiological analysis.

Ability to read and comprehend laboratory and scientific procedures and literature.

Ability to isolate disease-producing microorganisms such as tuberculosis, scabies, brucellosis or other diseases affecting animals.

Ability to recognize, identify and isolate pathogens in food samples, dairy products, water and other environmental specimens.

Ability to perform statistical calculations such as frequency distribution, standard deviation, etc.

Ability to perform basic algebraic calculations necessary to determine proportions/concentrations of chemicals, vitamins, drugs, etc.

Ability to prepare and maintain culture media used for analysis.

Ability to perform laboratory procedures and techniques used in microbiological analysis such as plate and coliform counts, preparation of tissue smears, psychotropic counts, etc.

Ability to apply personal ethical standards such as honesty, responsibility, and trustworthiness, required to be a productive employee.

Visual acuity sufficient to read fine markings on instruments and equipment.

Displays high standards of ethical conduct. Exhibits honesty and integrity. Refrains from theft-related, dishonest or unethical behavior.

Works and communicates with internal and external clients and customers to meet their needs in a polite, courteous, and cooperative manner. Committed to quality service.

Displays a high level of initiative, effort and commitment towards completing assignments efficiently. Works with minimal supervision. Demonstrates responsible behavior and attention to detail.

Responds appropriately to supervision. Makes an effort to follow policy and cooperate with supervisors.

Aligns behavior with the needs, priorities and goals of the organization.

Encourages and facilitates cooperation, pride, trust, and group identity. Fosters commitment and team spirit.

Expresses information to individuals or groups effectively, taking into account the audience and nature of the information. Listens to others and responds appropriately.

EDUCATION, EXPERIENCE, AND SPECIAL REQUIREMENTS

Graduation from an accredited college or university with an undergraduate degree in biochemistry, microbiology, or a closely related biological science (i.e. virology, bacteriology, immunology, serology, etc.);

OR

a combination of experience and education, substituting one year of employment in a biology laboratory performing biochemical or micro-biological analysis for one year of the required education, with a maximum substitution of four years;

OR

employees with current continuous experience in the state executive branch that includes experience equal to eighteen months of full time work as a Laboratory Assistant 3.

NOTE:

All candidates will be required to obtain certification to test water quality from the Department of Natural Resources during the first six months of employment.

Effective Date: 4/98 BW