

NEMATOTOLOGY TECHNICIAN

This is skilled laboratory work in the extraction and identification of numerous genera and some species of microscopic plant parasitic nematodes.

Employees identify the genera, some species of plant parasitic nematodes, and the population of the same by using stereoscopic and compound microscopes, and a variety of extraction procedures. A taxonomic key is used in the identification process. Employees perform work independently under the supervision of the laboratory supervisor. Work is evaluated through observation of work methods and through review of all data for inconsistencies with cropping history, observed symptoms, and corrections for volume calculations. Work may include other duties as assigned.

I. DIFFICULTY OF WORK:

Complexity - Employees view, through a microscope, prepared soil and plant samples that have been poured into a counting dish and count by genera the plant parasitic nematodes in the sample. The species is identified for Lesion nematodes. Samples that contain Lance nematodes, but no adults or males, are referred to the Nematologist for further evaluation. Employees perform mathematical computations to determine the relative number of nematodes in samples which are smaller than the specified amount. Employees record findings on a sample report form and refer them to the nematology laboratory supervisor. Employees collect root material from soil samples or elutriator screens, clean adhering soil from root, and place roots on baermann trays or in aerated beakers for nematode extraction and counting. Employees may receive samples, assign laboratory numbers, and prepare soil samples for analysis by extracting nematodes from soil samples using a semi-automatic elutriator and a centrifuge. The preparation process requires the proper selection and preparation of sucrose solution, centrifuge speed, and size of screen.

Guidelines - Work is performed under detailed and specific guidelines which are applicable to most situations. Employees generally work with minimal direct supervision except when atypical results are obtained or difficulty is experienced in the identification process. Guidance and instruction are readily available for all unusual or non-routine situations.

II. RESPONSIBILITY:

Accountability - Employees are responsible for the accurate counting and identification of plant parasitic nematodes, recording the data and handling samples in such a manner that the integrity of the sample is protected.

Consequence of Action - The assay data is the foundation of the management recommendations made by the Nematologist. Errors in accurately identifying and counting the plant parasitic nematodes could result in incorrect management recommendations, which could cause crop loss or wasteful and environmentally hazardous applications of pesticides and possible litigation.

Review - Samples are destroyed by the technicians immediately following the identification, counting and data recording process, voiding any opportunity for direct verification of the data that is gathered. Work is evaluated through observation of work methods, through review of data for inconsistencies with known cropping history and observed symptoms, and for accuracy of computations made to determine the relative number of nematodes in samples which are smaller than the specified amount.

III. INTERPERSONAL COMMUNICATIONS:

Subject Matter - Employees must be knowledgeable of nematode morphology and taxonomy, and be familiar with the primary purpose of the laboratory, the laboratory processes, and the information on grower information sheets.

Purpose - Employees must explain techniques, methods and the proper use of laboratory equipment when guiding visitors through the laboratory.

IV. WORK ENVIRONMENT:

Nature of Working Conditions - Employees spend all of their time in a laboratory setting under mostly agreeable conditions; however, they must sit for long periods of time while exerting intense concentration during the microscopic examination of samples.

Nature and Potential of Personal Hazards - Employees are occasionally exposed to dust, elutriator and vacuum noise, moisture, and odors.

V. RECRUITMENT STANDARDS:

Knowledges, Skills, and Abilities - Thorough knowledge of nematode taxonomy and morphology. General knowledge of principles, procedures, and techniques of nematode extraction. Skill in the operation of microscopes, centrifuges, balances, and other laboratory equipment. Ability to sit for prolonged periods of time to visually identify and count plant parasitic nematodes under microscopic examination, which requires good eyesight and a high degree of manual dexterity and hand-eye coordination. Ability to understand and follow instructions which relate to the identification of nematodes and other laboratory processes, including extraction methods. Ability to keep records of results obtained.

Minimum Training and Experience Requirements - High school or General Educational Development diploma and two years of general laboratory experience; or an equivalent combination of education and experience. College level coursework in nematode taxonomy and morphology, biology or related laboratory science may be substituted for one year of experience.

Minimum Training and Experience Requirements for a Trainee Appointment - High school or General Educational Development diploma or an equivalent combination of education and experience. Employee may move through the progression with experience or completion of college level coursework in nematode taxonomy and morphology, biology or a related laboratory science from an appropriately accredited institution.

Special Note - This is a generalized representation of positions in this class and is not intended to identify essential functions per ADA. Examples of work are primarily essential functions of the majority of positions in this class, but may not be applicable to all positions.