

Class Concept

Nematology

Positions provide leadership to other lower-level technicians (Agricultural Program Technician I) by acting as a technical advisor in the extraction and identification of plant parasitic nematodes. They direct daily activities, execute quality control measures, and provide ongoing training for lower-level technicians. Through their daily oversight, they ensure the maintenance of the North Carolina nematode specimen collection and serve as a technical lead on molecular diagnostic testing with the polymerase chain reaction (PCR) and gel electrophoresis to analyze PCR results. Positions perform other highly skilled tasks to process research and regulatory samples and participate in the development of new laboratory procedures. Positions perform work independently under the supervision of the laboratory supervisor. Work may include other duties as assigned.

Seed Analysis

Positions act as technical advisors and provide leadership to lower-level seed lab technicians (Agricultural Program Technician I) conducting seed analysis tests. They direct daily activities, develop, and execute quality control measures, and provide ongoing training of lower-level technicians. They serve as the technical advisor and provide leadership over weed and seed species identification based on physiological characteristics; separation of sample components between weed, crop kind, and variety; germination tests to determine the percent of seeds capable of growing and determine the presence of seedborne diseases; and the performance tetrazolium chloride staining to estimate seed viability. Weed seed identification is the state's first line of defense in preventing the spread of noxious, invasive weeds. Positions perform other highly skilled tasks for seed analysis within the laboratory. Some employees obtain a Registered Seed Technician Certification offered by the Association of Official Seed Analyst (AOSA). Positions perform work independently under the supervision of the laboratory supervisor. Work may include other duties as assigned.

Recruitment Standards

Knowledge, Skills, and Abilities

Nematology

- Thorough knowledge of nematode taxonomy and morphology
- Thorough knowledge of principles, procedures, and techniques of nematode extraction
- Technical skill in the operation of microscopes, centrifuges, balances, and other laboratory equipment
- Ability to visually identify and count plant parasitic nematodes under microscopic examination which requires good vision, a high degree of manual dexterity, and hand-eye coordination
- Ability to understand, follow, and explain instructions which relate to the identification of nematodes and other laboratory processes, including extraction methods
- Ability to keep written records of analysis performed and the results obtained
- Ability to direct the daily activities of other employees
- Ability to develop and execute quality control measures
- Ability to train other employees, providing both initial training and continuing education training
- Ability to lead and provide guidance to lower-level technicians
- Ability to work in a seated stationary position for extended periods of time

Seed Analysis

- Thorough knowledge of the techniques, terminology, and standards used in determining the purity and germination characteristics of a variety of seeds used in the state
- Thorough knowledge of the state and federal seed laws, rules, and regulations.
- Thorough knowledge of a wide variety of grasses, agricultural, and weed seeds
- Knowledge of botany, plant physiology, plant morphology, chemistry, and crop and weed science
- Thorough skillset in calibrating and operating seed testing equipment such as dividers, blowers, analytical balances, calculators, germinators, and mechanized purity boards

Note: This is a generalized representation of positions in this class and is not intended to identify essential functions per ADA.

- Ability to visually identify and manually separate inert matter from seed samples requiring good vision, a high degree of manual dexterity, and hand-eye coordination
- Ability to understand, follow, and explain oral and written instructions which relate to testing methods and quality standards.
- Ability to keep written records of analysis performed and the results obtained
- Ability to direct the daily activities of other employees
- Ability to develop and execute quality control measures
- Ability to train other employees, providing both initial training and continuing education training
- Ability to lead and provide guidance to lower-level technicians
- Ability to work in a seated stationary position for extended periods of time

Minimum Education and Experience

Nematology

Associate degree in a biological science, horticulture, soil science, plant science, or a closely related curriculum from an appropriately accredited institution and three years of general laboratory experience; or an equivalent combination of education and experience.

Seed Analysis

Associate degree in horticulture, horticulture technology, or a closely related degree and three years of experience in the analysis of seeds; or an equivalent combination of education and experience.