Soil & Plant Scientists

Occupational Profile

OVERVIEW

Conduct research in breeding, physiology, production, yield, and management of crops and agricultural plants or trees, shrubs, and nursery stock, their growth in soils, and control of pests; or study the chemical, physical, biological, and mineralogical composition of soils as they relate to plant or crop growth. May classify and map soils and investigate effects of alternative practices on soil and crop productivity. Belongs to the Agriculture, Food, and Natural Resources career cluster and the Plants Systems career pathway.

DOES THIS DESRIBE YOU?

Work Interests involve descriptive categories (compatible with Holland's Model) attributed to success in this career:

- **Investigative**—Involves working with ideas requiring an extensive amount of research, fact finding, problem solving, and thought analysis.
- **Realistic**—Involves work activities that include practical, hands-on problems and solutions; often dealing with plants, animals, and real-world materials like wood, tools, and machinery.

Work Styles depict worker characteristics conducive for this career:

- **Integrity**
- **Attention to Detail**
- **Dependability**
- **Achievement/Effort**
- **Initiative**

Work Values are associated with aspects of work that provide satisfaction in this career:

- **Achievement**—Sense of accomplishment; results oriented.
- **Independence**—Autonomy; working on your own.
- **Recognition**—Advancement potential.

Aptitudes reflect an ability to acquire skills and knowledge for success in this career:

- **Oral Comprehension**
- **Written Comprehension**
- **Category Flexibility**
- **Deductive Reasoning**
- **Inductive Reasoning**

SKILLS & KNOWLEDGE NEEDED

Basic Skills:

- Reading Comprehension
- Science
- Critical Thinking
- Active Learning
- Complex Problem Solving

Technology Skills:

- Analytical or Scientific Software
- Categorization or Classification Software
- Data Base User Interface and Query Software
- Map Creation Software
- Spreadsheet Software

Knowledge:

- Biology
- English Language
- Mathematics
- Education and Training
- Chemistry

Sources (including additional requirements): https://www.careerkey.org/choose-a-career/holland-personality-types.html#.WUQAGOvyuJA ; https://www.onetonline.org/ ; and https://www.iowaworkforcedevelopment.gov/career-exploration-resources

ESTIMATED & PROJECTED EMPLOYMENT

Occupational Title	2014 Estimated Employment	2024 Projected Employment	2014-24 Employment Change	Annual Growth Rate (%)	Total Annual Openings
Total, All Occupations	1,795,100	1,949,240	154,140	0.9	58,145
Life, Physical, & Social Science Occupations	12,830	14,060	1,230	1.0	525
Soil & Plant Scientists	1,585	1,685	100	0.6	65

Source: https://www.iowaworkforcedevelopment.gov/occupational-projections

2017 WAGE & SALARY ($)

Occupational Title	Mean Wage	Mean Salary	Entry Wage	Entry Salary	Exp Wage	Exp Salary
Total All Occupations	20.93	43,539	10.09	20,991	26.35	54,813
Life, Physical, & Social Science Occupations	29.01	60,339	17.49	36,383	34.77	72,317
Soil & Plant Scientists	35.94	74,761	21.33	44,371	43.25	89,957

Source: https://www.iowaworkforcedevelopment.gov/occupational-employment-and-wages

EDUCATION & TRAINING

Education	Work Experience	Job Training
Bachelor's Degree	None	None

Many employers desire applicants possessing a bachelor's degree in a related field, such as agricultural science, biology, botany, horticulture, or agronomy. Advanced degrees are required for research positions.
Sources: https://www.iowaworkforcedevelopment.gov/occupational-projections and https://www.bls.gov/emp/ep_education_training_system.htm

NATIONAL CAREER READINESS CERTIFICATE (NCRC)

Skill	Median Skill Level	Minimum Skill Level	Maximum Skill Level
Applied Mathematics	6	5	6
Locating Information	6	5	6
Reading for Information	7	7	7
Applied Technology	n.a.	n.a.	n.a.
Business Writing	5	4	5
Workplace Observation	4	4	5
Listening for Understanding	4	4	5

An ACT assessment-based credential issued in determining essential work skills needed for employment success across industries and occupations. The greater the score, the greater the skill level (Bronze = 3, Silver = 4, Gold = 5, Platinum = 6 & higher). Source: http://www.act.org/content/act/en/products-and-services/workkeys-for-employers/assessments.html

ADDITIONAL SOURCES:

This workforce product was funded by a grant by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner. This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Updates, revisions, and/or corrections made periodically. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit www.iowalmi.gov to obtain the latest workforce data and trends including this document. Published 9/2017.

PRIMARY INDUSTRY SECTORS

(Where are Soil & Plant Scientists Employed?)

Professional, Scientific, and Technical Services
Agriculture
Educational Services
Management of Companies

Source: https://www.iowaworkforcedevelopment.gov/occupational-projections

IOWA WORKFORCE DEVELOPMENT