



## ***CUSTOMIZED ASSESSMENT BLUEPRINT***

### **PLANT SYSTEMS**

**Test Code: 8994**

**Version: 01**

**Preliminary Blueprint - final version is subject to slight changes.**

#### **Specific competencies and skills tested in this assessment:**

##### **Foundations of Agriculture, Food, and Natural Resources**

- Demonstrate understanding of agribusiness (e.g., SAE, expenses)
- Demonstrate understanding of animal systems (e.g., breeds of livestock, anatomy)
- Demonstrate understanding of agriculture innovation and technology
- Demonstrate understanding of food products and processing (e.g., protein sources, food preservation)
- Demonstrate understanding of natural resources (e.g., renewable resources)
- Demonstrate understanding of plant systems (e.g., plant parts, processes, soil)
- Demonstrate understanding of power, structural, and technical systems (e.g., measurement)
- Demonstrate knowledge of leadership development through FFA (e.g., motto, parliamentary procedure, official dress)

##### **Plant Anatomy, Classification, and Identification**

- Identify and classify plants (e.g., nomenclature, monocots)
- Identify major plant parts and functions (e.g., root systems, phloem, node)
- Demonstrate understanding of plant life cycles (e.g., pollination, seed vigor, perennial)

##### **Plant Propagation, Growth, and Nutrition**

- Demonstrate understanding of photosynthesis and respiration (e.g., transpiration, functions of leaves)
- Demonstrate understanding of naturally occurring plant hormones and synthetic plant growth regulators (e.g., ethylene, PGR)
- Identify essential nutrients for plant growth and development (e.g., macro/micronutrients, phosphorous, nitrogen)
- Identify soil types, properties, and pH and the impact on horticultural plant production (e.g., soil triangle, aeration, pH)
- Demonstrate understanding of synthetic fertilizer formulations and application (e.g., amounts to apply, inorganic)
- Demonstrate understanding of organic matter and its role in nutrient storage and plant nutrition (e.g., manure, organic)
- Demonstrate understanding of propagation techniques (e.g., sexual and asexual, seed germination)

## *Plant Systems (continued)*

### **Plant Pests and Pest Management**

Identify plant pests, disorders, and diseases (e.g., aphids, crop scouting, damping off, leaf disease)

Identify pest control strategies associated with integrated pest management (e.g., lady bug, selective, post-emergent, days to harvest)

### **Plant Production Schedule and Season Extension**

Identify crops that can be produced in high tunnels

Describe low-cost season extension practices and systems (e.g., cold frames, hoop houses)

Demonstrate understanding of planning and scheduling various crops based on hardiness zone (e.g., hardiness zone map, soil test)

### **Agricultural Innovation and Technology**

Identify emerging technology in the various plant systems industries (e.g., hybrids, biotechnology)

Identify career opportunities in technology, innovation, and entrepreneurship in plant systems industries (e.g., floriculture, landscape, propagator)

### **Plant Systems Entrepreneurship and Financial Record Keeping**

Demonstrate understanding of entrepreneurship and financial record keeping (e.g., calculate profit, crop insurance)

Demonstrate understanding of value-added agriculture and direct marketing (e.g., supply vs. demand, business plan)

Demonstrate understanding of sustainability (e.g., economic and environmental future)

*Plant Systems (continued)*

**Knowledge-Based Assessment:**

Administration Time: 2 hours

Number of Questions: 107

***Areas covered:***

38%	Foundations of Agriculture, Food, and Natural Resources
8%	Plant Anatomy, Classification, and Identification
22%	Plant Propagation, Growth, and Nutrition
10%	Plant Pests and Pest Management
8%	Plant Production Schedule and Season Extension
6%	Agricultural Innovation and Technology
8%	Plant Systems Entrepreneurship and Financial Record Keeping

***Sample Questions:***

Agricultural innovations have allowed farmers to

- A. eliminate the use of chemical fertilizers
- B. increase the use of chemical fertilizers
- C. produce more crops on less land
- D. produce fewer crops on more land

FFA business meetings are run using an established set of rules known as

- A. Business Rules
- B. Meeting Rules
- C. Parliamentary Procedures
- D. Business Procedures

Garden soil should be subjected to a chemical soil test to determine

- A. how well water drains off the surface
- B. what fertilizer and other amendments to add
- C. the correct depth for plowing
- D. whether the soil is too wet to plow

The nursery landscape industry involves the growth, installation, and maintenance of

- A. grasses, plants, trees, and shrubs
- B. grasses, plants, trees, and fruits
- C. grasses, plants, trees, and vegetables
- D. shrubs, grain crops, vegetables, and fruits

The amount of an agriculture commodity available for sale at a given time is the

- A. elasticity
- B. demand
- C. cycle
- D. supply