The Seed Science Center at Iowa State University provides a focus for teaching, research, and extension programs on seeds in the College of Agriculture and Life Sciences at Iowa State University.

Teaching
- Graduate program in Seed Technology and Business (only one worldwide)
- Undergraduate seed science degree (only one in the U.S.)
- Cooperating departments include: agronomy, agricultural and biosystems engineering, plant pathology, horticulture, and plant sciences institute
- Areas of study: production, conditioning, physiology, pathology, quality, marketing, and seed plant design
- Workshops and shortcourses in seed conditioning, trait testing, seed health, purity, and germination
- Practical experience for students

Research
- ISU seed research and testing since 1890
- Projects in sustainable agriculture, biotechnology, crop utilization, and new computer technologies, microbiology, toxicology, molecular biology

Research in Seed Physiology
- Coexistence of transgenic and non-transgenic crops
- Seed performance under environmental stress
- Biology of freezing injury in corn
- Differential genetic expression in freeze-damaged corn seeds
- Early seed metabolism and plant vigor
- Imbibitional injury in soybeans
- Soybean genome fluidity and “allele switching” in soybeans
- Seed nutritional properties and other value-added traits
- Biological and conventional seed treatments
- Seed applied insecticides

Research in Seed Pathology
- Standardization of seed health tests
- Transmissibility of seedborne pathogens to plants
- Epidemiology of seed and seedling diseases
- Seed treatments for multiple diseases and pests
- Impacts of mycotoxin-producing fungi in ethanol production
- Insect/pathogen interactions
Research in Seed Pathology (cont’d)
• DNA-based detection of seedborne pathogens
• Longevity of pathogens in seeds

Research in Seed Conditioning
• Seed cleaning and separation technology and procedures
• Color sorting and digital imaging applications
• Seed conditioning process development
• Seed drying technology and dryer management
• Seed treatment application and quality control methods
• Process control and automation of conditioning equipment
• Material handling and mechanical damage testing

Seed Laboratory
• Testing seeds on the Iowa State University campus for over 100 years
• Member lab, Association of Official Seed Analysts (AOSA)
• ISO 9001-2008 certified; National Seed Health System Certified
• Analysts are Certified Seed Analysts, Registered Seed Technologists, or Certified Genetic Technologists with over 160 years of collective experience
• Traditional tests include germination, purity, noxious weed exam, cold tests, tetrazolium, accelerated aging, and cultivar purity
• Recognized leader in seed health testing, testing over 300 pathogens for phytosanitary certification
• Trait tests offered include herbicide bioassay, ELISA, immunoassay, PCR, and IEF
• Extensive seed herbarium
• On-line service for sample testing

Extension
• State, national, and international clients
• Shortcourses for seed analysts and conditioners
• International seed improvement courses
• Seed conditioning workshops
• New technology demonstrations
• Iowa Seed & Biosafety newsletter
• Individual consultation

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