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## Specifications

**Project:** In situ root Imager

### GENERAL INFORMATION

- 1.0 Scope of Work:** The USDA-ARS St. Paul, Minnesota location is requesting quotes for an *in situ* Root Imager system that enables imaging plant root in soil in a field situation.
- 2.0 Background:** The St. Paul ARS Unit conducts research on improving alfalfa for agronomic traits such as winter survival, disease resistance, and carbon sequestration in soil. Unique alfalfa germplasm has been developed with different root architectures but selecting plants requires destructive sampling of digging plants from soil. New technologies allow visualization of roots in soil that will accelerate breeding and enhance knowledge of root growth/death during the seasons.

### CONTRACTOR REQUIREMENTS

- 3.0 Technical Requirements/Tasks:** Required specifications for in situ Root Imager
- Scanner for root imaging with an image size of 8.5 x 7.7 inches
  - Scanner speed: 0-480 seconds
  - Scanner resolution: 600 dpi
  - Scan head dimensions of 34.3 x 6.35 cm in diameter
  - Scanner weight: 750 g
  - Root tubes with an inner diameter of 2.5 inches, 183 cm length
  - Auger for drilling holes for root tubes 52 inches in length, 3-inch diameter bit
  - Image analysis software compatible with scanner
- 4.0 Government Furnished:** computer for downloading images.
- 5.0 Deliverables / Schedule:** Equipment should be delivered to: USDA-ARS, Plant Science Research Unit, 1991 Upper Buford Circle, Rm 411 Borlaug Hall., St. Paul, MN 55108; Delivery: 30-90 days after receipt of award.