Characteristics of Take-all Disease Suppressive Rhizobacteria from Different Soils. (S03-kremer171108-Poster)

Authors:

- B.Nasraoui - *Ecole Supereieure d'Agriculture du Kef, Tunisia*
- R.J.Kremer* - *USDA-ARS, Columbia, MO*

Abstract:

Root diseases of cereals are problematic because short rotations and no-tillage practices continue in intensive cereal production. Because bacterial biocontrol agents are effective toward root pathogens on entire root systems, we selected rhizobacteria for antagonism against Gaeumannomyces graminis var. tritici (Ggt) in contrasting soils and management systems. Soils with different crop management systems and histories of take-all were collected in Missouri and Tunisia. Bacterial isolates were cultured from wheat rhizospheres and screened against Ggt strains. Fungal inhibition depended on media and supplemental iron. Isolates were tested against Ggt on Madsen wheat seedlings in 'quick test tube assays', using vermiculite, original soil of bacterial isolate or different soils. Three bacterial species were selected based on severe inhibition of take-all disease on wheat roots. In the greenhouse, inhibition of take-all was confirmed for two bacterial species: Pseudomonas aureofaciens from Missouri and Bacillus subtilis from Tunisia effective in original soils. These bacterial cultures are potential biocontrol agents against take-all in soils specific to a wheat-growing region.

Corresponding Author Information:

Robert Kremer
USDA-ARS
302 ABNR Bldg
Columbia, MO 65211

phone: 573-882-6408
fax: 573-884-5070
e-mail:

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1632

Keywords:

Rhizosphere bacteria, Take-all fungal pathogen, winter wheat, soil quality