



Godar SENE

Laboratoire Commun de Microbiologie IRD/ISRA/UCAD

Centre de Recherche et de Formation à la Recherche IRD/ISRA de Bel-Air Dakar,
Sénégal

Université Cheikh Anta Diop

Greenhouse inoculation effectiveness of native and exotic *Bradyrhizobiums* sp. strains in a Senegalese agricultural soil: case study on five peanut cultivars

Jeudi 15 décembre 2022 À 12 H 30

Pavillon Charles-Eugène Marchand, salle Hydro-Québec (1210)

Vous pouvez maintenant assister à la conférence via Zoom en cliquant sur ce lien :

[Accéder à la vidéoconférence](#) (pour une expérience plus agréable, préférez l'installation de l'application Zoom à l'utilisation du navigateur). >> [Instructions pour la configuration de l'audio](#) <<

Abstract:

Peanut (*Arachis hypogaea* L.) is a major grain legume grown and consumed in sub-Saharan Africa, including Senegal. It is one of the choicest world agriculturally economic important crop and forms a major component of the predominantly cereal based farming systems in Senegal (called peanut basin-PB). However, peanut cultivation is faced with the low soil fertility contain accentuated with the effects of climatic change. Microbial inoculation is a promising strategy to improve crop yield and reduce the use of chemical fertilizers, thereby creating environment-friendly agriculture. The purpose of this study was to isolate the most specific and effective strain for peanut, and to determine the level of variability in peanut cultivars response toward inoculation. The seeds of five cultivars namely 55-437, *Fleur* 11, *Sunu Gaal*, *Amoul Morom* and *Assamaay* were inoculated with ten bradyrhizobial strains individually (LMG9283 and USDA3187 which are the reference strains, ISRA (400, 426, 430, 432, 454 and 519) strains isolated from nodules of *Fleur* 11 cultivar collected in the PB of Senegal, and ORS (3640 and 3644) strains isolated from nodules of siratro, an herbaceous species from the same cross inoculation group with peanut), and were grown in the greenhouse conditions using a mixture of agricultural sandy soil and vermiculite (1/1, v/v). Results obtained in term of nodule formation revealed a positive effect of bradyrhizobial inoculation. Assessment of the data on plant growth, chlorophyll content, shoot biomass and pods yield revealed that, the response of peanut inoculation is cultivars dependent. Yet, *Sunu Gaal*, 55-437 and *Fleur* 11 cultivars produced the largest increase in the studied parameters. In these circumstances, the yield increase of some peanut cultivars should be considered as new promising data towards the adoption of microbial technology for peanut improvement in Senegal. Similar screening tests are performed using elite mycorrhizal fungal strains and PGPR bacteria in order to optimize biofertilizer formulations for each cultivar.

Hôte : Damase Pierre Khasa

Responsable : Juan Carlos Villarreal Aguilar et Davoud Torkamaneh

juan-carlos.villarreal-aguilar@bio.ulaval.ca;

davoud.torkamaneh.1@ulaval.ca