J Plant Pathol Microbiol 2016, 7:5(Suppl)
http://dx.doi.org/10.4172/2157-7471.C1.003

A study on nematofauna associated to the olivier *Olea europaea* L. in some northen regions in Algeria

M Mihoub, S Sellami and **T Mateille**
High National School of Agronomic Sciences, Algeria

Surveys conducted during 2012 in some olive areas (Blida, Boumerdes and Mascara) in both orchards and nurseries revealed the presence of 9 genera of plant-parasitic nematodes. Four among them are considered to be dangerous on oliviers. *Pratylenchus* is detected in the majority of areas sampled with a frequency ranging from 12.5% to 71.42%. The *Helicotylenchus* are present at a frequency of 6.25% to 50% in almost all the studied sites. *Meloidogyne* are the most dangerous despite their low frequency of 14.28%, because they are classified in the A2 quarantine list. They only exists in the olive areas of Mascara with a density of 10 juveniles/100 g of soil which corresponds to the limit of harmfulness of this plant parasitic-nematodes. Among ectoparasites, *Xiphinema* are the only dangerous genera because they are virus vectors on citrus. Other genera such as: *Paratylenchus,Telotylenchus, Criconema, Gracilacus* and *Tylenchorynchus* do not present any problems on oliviers and are detected in low densities.

mme.mihoub.m@gmail.com

Impact of anatomical traits of maize (*Zea mays* L.) leaf as affected by nitrogen supply and leaf age on bundle sheath conductance

Moges Retta
Catholic University of Leuven, Belgium

The mechanism of photosynthesis in C_4 crops depends on the archetypal Kranz-anatomy. To examine how the leaf anatomy, altered by nitrogen supply and leaf age, affects the bundle sheath conductance (g_{bs}) when maize (*Zea mays* L.) plants grown under three contrasting nitrogen levels. Combined gas exchange and chlorophyll fluorescence measurements were done on fully grown leaves at two leaf ages. The measured data were combined with a biochemical model of C_4 photosynthesis to estimate g_{bs}. The leaf microstructure and ultrastructure were quantified using images obtained from micro-computed tomography and microscopy. There was also a strong positive correlation between g_{bs} and leaf nitrogen content (LNC) while old leaves had lower gbs than young leaves. Leaf thickness, cell wall thickness of bundle sheath cells and surface area of bundle sheath cells per unit leaf area (S_b) correlated with gbs although they were not significantly affected by LNC. As a result, the increase of g_{bs} with LNC was little explained by the alteration of leaf anatomy. In contrast, the combined effect of LNC and leaf age on S_b was responsible for differences in g_{bs} between young leaves and old leaves. Future investigations should consider changes at the level of plasmodesmata and membranes along the CO_2 leakage pathway to unravel LNC and age effects further.

moges.ash@gmail.com