The Chancellor of Ghent University has the honour of inviting you to attend the public defense of the doctoral dissertation of

ir. Gil Luypaert

Title of the doctoral dissertation:

The broad mite, *Polyphagotarsonemus latus*, and its interactions with pot azalea, *Rhododendron simsii* hybrid

The public defence will take place on October 1st 2015 at 4pm in the Academieraadzaal (Hall of the Academic Board), room A 0.030 Faculty of Bioscience Engineering, Coupure links 653, 9000 Ghent.

There will be a contiguous reception to which you are heartily invited.

Please confirm your attendance before September 25th to: gil.luypaert@ugent.be or 0474/24.74.70

**Abstract of the doctoral research**

The broad mite *Polyphagotarsonemus latus* (Banks) (Acari: Tarsonemidae) is an economically important pest in greenhouses and field crops worldwide. In Belgium it is a key pest in pot azalea production (*Rhododendron simsii* Planch hybrids). Damage symptoms are seen as malformation of the youngest growth tips and flowers, and down-curling of leaves. The overall objective of this study was to provide a better understanding of the bio-ecology of the broad mite *P. latus* as one of the most important pests in *R. simsii* hybrid production in Belgium, and to investigate the role of defence responses in this ornamental plant against the pest. We concluded that the pest is able to survive the whole spectrum of temperatures encountered during *R. simsii* production, indicating its potential to spread and build up a population very easily when conditions are favourable. Our findings also showed the existence of resistant genotypes in the *R. simsii* gene pool. Glandular trichomes with a sticky end are thought to be involved in the resistant characteristics of these genotypes. Confirmation of this hypothesis requires additional research to determine the composition of the sticky exudates and to assess their effect on *P. latus* physiology. We found that jasmonic acid-mediated responses might contribute to resistance against this pest. Further research is warranted to study the role of jasmonic acid and salicylic acid defence pathways upon *P. latus* infestation and to assess the effect of external application of elicitors inducing defence responses in the plant.

**Brief Curriculum Vitae**

Gil Luypaert (Jette, 03/04/1988) obtained a Master degree in Bioscience Engineering, option Cell and Gene Biotechnology in 2011. After graduation he immediately started as research associate at the Institute for Agricultural and Fisheries Research (ILVO). He conducted research in a project funded by IWT (LO-100859) on plant resistance against *Polyphagotarsonemus latus* in floriculture. Besides this research he studied the interaction between the plant feeding mite *Polyphagotarsonemus latus* and pot azalea, *Rhododendron simsii* hybrid under supervision of Prof. dr. ir. Patrick De Clercq, Prof. dr. Martine Maes and Dr. ir. Jan De Riek. The present doctoral research is the result of latter project. Results were presented by Gil during several national and international meetings and published in peer-reviewed international journals.