PCI2. We also quantified the production of ethylene and salicylic and jasmonic acids in PCI2 by gas chromatography-flame ionization detection and liquid chromatography-electrospray tandem mass spectrometry, respectively.
Results: The obtained results showed a reduction of disease severity in the root of tomato plants pre-inoculated with PCI2 and an increase in shoot and root dry weight of plants over the untreated pathogen control. No fragments for the encoding genes of 2,4-diacetylphloroglucinol, phenazine-1-carboxylic acid, pyrrolnitrin, pyoluteorin or hydrogen cyanide were amplified from the DNA of PCI2. On the other hand, PCI2 produced 0.7 ng ml^{-1} h^{-1} of ethylene in King´s B broth plus L-methionine and 6.95 and 0.091 µg ml^{-1} of salicylic acid and jasmonic acid, respectively, in Luria Bertani medium.
Conclusions: This study shows that *P. putida* PCI2 applied to tomato seeds increases the resistance of plants to root rot caused by the fungus *F. oxysporum* MR193 and that PCI2 produces compounds that may be involved at different levels in triggering an induced systemic resistance. Certainly, this work suggests that PCI2 represents a non contaminating management strategy potentially applicable in different agro-ecosystems, particularly in vegetable crops such as tomato.

P PPI 79

Quantitative yield loss of coffee (*Coffea arabica*) caused by Antestia Bug (*Antestiopsis spp.*) in Rwanda

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Coffee is the most important cash crops and major source of rural income in Rwanda. The antestia bug is a major pest causing 30% -47% loss. The study aimed to establish yield loss at mid altitude of Rwanda. The data was collected at the farm, washing station, and cupping laboratory. We selected randomly five fields in the Maraba sector; and at each field, six trees (four from border and two from middle). We assessed bugs population from each tree using knockdown method. After harvesting, we hand sorted the cherries and grouped them into damage categories: (i) insect damaged, (ii) abiotic factors and (iii) clean cherries; and recorded weight for each category. We repeated hand sorting at washing station before floatation. The hand sorted cherries were floated in water, and again sorted out according to the three categories. The seeking and floating cherries were de-pulped and dried separately for further assessment of quality during cupping. The middles trees had one bug/tree, while border had 4 bugs/tree, and the average was three bugs/tree; which is above ET of two bugs/ tree. The loss of cherries by hand sorting was 6%, of which 4% was antestia damage. After floatation, the loss was 24.8% (18.6% by antestia damage), making a total yield loss of 30.8% (22.6% by antestia bug). The yield loss by hand sorting alone was not effective. Yield loss due to poor quality will be reported after cupping is completed. The data were recorded from fields where farmers applied pesticide as recommended.

P PPI 80

Rhizobacteria promoting growth and defense in rice plants against *Magnaporthe oryzae*.

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Plant growth-promoting rhizobacteria (PGPR) are bacterias that lives around the plants roots and are involved in the induction of resistance of plants to diseases. This study investigated the effect of PGPR in promoting growth of rice roots and suppressing leaf blast (*Magnaporthe oryzae*). The experiment was conducted in completely randomized blocks with six treatments, consisting of microbiolized seed with rhizobacterias (T1=235; T2= 82R, T3=235 + M. oryzae, T4=82R + M. oryzae, a negative control (T5=M. oryzae) and a positive control (T6=microbiolized seeds water only)). The rice cultivar BRS Primavera was sown in trays containing fertilized soil (FTE 1g / kg soil, Zn 1g / 2kg and NPK - 5/30 / 15 g / kg). Twenty one days old plants were spray inoculated with M. oryzae suspention (3,105 conídios.mL-1). At the same time, rice seeds (with the same treatments) were sown in test tubes containing water-agar (0.8%), kept under controlled conditions in a growth chamber (25 ° C) during 14 days for of roots and shoots growth measurement. The leaf blast severity index (SBF) in microbiolized plants with rhizobacteria 235 was suppressed by 80% compared to the control (Duncan, p = 0.05). In plants treated with the PGPR isolate 235, the increase in leaves and roots length was 60.86 and 101.24 mm, respectively (Duncan, p = 0.05). These results suggest that rhizobacterium 235 promoted the growth of root and shoot of rice plant, suppressed the leaf blast and can be explored as a potential biological agent.