Production of Protease Inhibitors in Coffee *Coffea canephora* cv. Caused by the Spider Mite *Oligonychus ilicis*

Faustino, V.A.¹; Silva, R.S.²; Silva, P.L.¹; Ribeiro, F.R.²; Chaves, G.S.¹; Oliveira, M.G.A.¹; Picanço, M.C.³

¹Dep de Bioquímica e Biologia Molecular; ²Dep de Fitotecnia; ³Dep de Entomologia, UFV, MG, Brazil

**INTRODUCTION:** Coffee is one of the most important row crops cultivated and traded in Brazil. One of main indirect pests found attacking coffee plants is the spider mite *Oligonychus ilicis*. It is known that herbivorous arthropods may elicit plants to produce defensive compounds such as protease inhibitors (PI). The inhibition of arthropod pests digestive enzymes compromises its physiology and development. The main objective of this study was to evaluate the production of PI by *Coffea canephora* cv attacked by *Oligonychus ilicis*. **MATERIAL AND METHODS.** The mites were fed coffee leaves from four different clones of *Coffea canephora*. The coffee leaves were exposed for seven days to the mites, and thereafter subjected to an analysis of protease inhibitors (PI). The data were subjected to a test of ANOVA and pairwise comparison using Scott-Knott. **RESULTS AND DISCUSSION.** Among the clones tested, number eight was the one that produced the highest amount of PI (617.01 mg of inhibited trypsin/g of protein) and it was 3.93 times higher than clone eleven, which produced the lowest amount of PI (157.18 mg of inhibited trypsin/g of protein). There was no significant difference (p> 0.05) among the clones that were not fed upon by the mites. The production of PI was also noticeable when the clones were individually assessed, considering those clones that were fed upon by the mites and those that were not. Among all the clones tested, number eight produced the highest amount of PI, which was 17.29 times higher than the control. Nonetheless, even though PI is known to affect the physiology of many other arthropod pests, our results show that PI production did not affect the biological responses of *Oligonychus ilicis*. **CONCLUSION.** The *Coffea canephora* clones responded to the attack of *Oligonychus ilicis* by producing high amounts of protease inhibitors. **Keywords:** Protease inhibitors, *Oligonychus ilicis*, *Coffea canephora*  
Support by: FAPEMIG, CAPES, CNPq and INCT-IPP