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David Jaures Fotsa Mbogne (mjdavidfotsa@gmail.com), Department of Mathematics and Computer Science, ENSAI, University of Ngaoundere, Dang, Cameroon, and **Chris Thron*** (thron@tamuct.edu). *Optimal control of coffee-berry disease using both chemical and cultivational methods.*

We present a spatial diffusion-reaction model for the control of coffee-berry disease (anthracnose) in a bounded domain. We use the model to simulate the combination of two different types of control strategies against anthracnose disease: continuous control (representing chemical means such as pesticides) and discrete-time control (which represents cultivational practices such as pruning and removal of mummified fruits). We have shown well-posedness of the model, and well as the existence of optimal control strategies with respect to a realistic cost function. We present and discuss the results of numerical simulations of both an aggregated version of the model and for the full model, in which optimal control strategies have been computed explicitly. (Received September 16, 2014)