

1032-65-71

**Delia Julieta Valles Rosales\*** (dvalles@nmsu.edu), Department of Industrial Engineering, New Mexico State University, Las Cruces, NM 88003, and **Christopher Erickson, James Libbin, Mariani C Mariani, Maria P. Beccar Varela** and **Donovan Fuqua**. *Development of numerical methods and simulations to forecast and optimize New Mexico red chile harvest*. Preliminary report.

Dried red chile peppers [*Capsicum annuum* (L.)] are an important agricultural product grown in the Southwestern United States as it is used for a variety of food and commercial uses. Currently, chile can only be stored between 24 to 36 hours between harvesting and the beginning of processing before natural fermentation destroys the crop. The amount of wasted crop is determined by harvesting method, time of harvest following the optimal harvesting point, and variations in weather. In this work we developed numerical and statistical methods and simulations to forecast optimal harvesting distributions in order to help farmers and chile processors better plan planting and growth acceleration programs. The forecasting tools also will enable economic analysis of the feasibility of storage/stabilization systems, advanced mechanical harvesters, and other future advances based on the amount increase in chile yield. (Received August 10, 2007)