Title: High Performance Liquid Chromatography

PI: Aymeric Goyer (Botany and Plant Pathology – HAREC)

College: Ag Sciences

Department: Botany and Plant Pathology

Amount of award: $48,376

Date of award: March 4, 2013

Type of award: RERF

Final budget:

Funds were used to purchase an HPLC system comprised of a quaternary pump, an autosampler, a degasser, a column oven, a diode array detector, a fluorescence detector, a Coulouchem III detector, Chromeleon software, and a PC. Matching funds were provided by the College of Ag Sciences, the Department of Botany and Plant Pathology, the PI, and the HAREC director.

Scholarly work/activities:

Since its installation in October 2013, the HPLC system has been used continuously to analyze plant samples for vitamins, sugars, phenolic compounds, and glycoalkaloid compounds. The system has been supporting research projects of the PI, the HAREC potato breeder, and the HAREC Extension entomologist.

Additional scholarly work/activities the RERF funding made possible:

The system has such broad applications that we have already started to analyze compounds that we were not initially planning on analyzing. For instance, phenolic compounds, in particular chlorogenic acid and tyrosine, are substrates of enzymatic browning reactions in food. We are quantifying these compounds to find solutions to this major problem of food browning.

List all external funding requests (i.e. proposals) that have been developed and submitted as a result of the RERF funding:
Project title: Breeding for Enhanced Flavor in Potato: An Integrated Participatory, Genetic and Biochemical Approaches to Study Flavor Dynamics in Potato
Principal Investigator(s): Vidyasagar Sathuvalli, Shelly Jansky, Julie Dawson, Aymeric Goyer, Leif Benson
Source: NIFA - Agriculture and Food Research Initiative
Effective dates: 01/01/2015 – 12/31/2017
Grant amount: $499,034

Project title: Production of virus-free potato lines and screening for PVY resistance genes in PNW cultivars
Principal Investigator(s): Alexander Karasev, Joseph Kuhl, Aymeric Goyer, Vidyasagar Sathuvalli
Source: Northwest Potato Research Council
Effective dates: 07/01/2014 – 06/30/2015
Grant amount: $31,001 ($9,965 to Goyer)

Project title: Consumer-oriented potatoes: Developing Tri-State varieties with superior appearance and nutritional value
Principal Investigator(s): Roy Navarre, Mike Thornton, Aymeric Goyer, Hanjo Hellmann
Source: Northwest Potato Research Council
Effective dates:
Grant amount: $56,060 ($9,500 to Goyer)

Project title: Shrinkage and bruising in russet potatoes
Principal Investigator(s): A. Goyer, Vidyasagar Sathuvalli
Source: Northwest Potato Research Council
Effective dates:
Grant amount: $34,600 ($29,600 to Goyer)

Project title: A new strategy for resistant and more nutritious rice
Principal Investigator(s): A. Goyer and P.C. Ronald (UC-Davis)
Source: Grand Challenges Explorations (Bill and Melinda Gates Foundation)
Effective dates: 07/01/2012 – 06/30/2013
Amount: $100,000