Pulse Crop Health Initiative Funded Projects – Fiscal Year 2019

Breeding Projects

MP3: More protein, more peas, more profit

Clare Coyne (PI), USDA-ARS, Pullman, WA
$0 (project Year 2; Year 2 funding was provided in Fiscal Year 2018)

Development of efficient, genotype-independent gene-editing systems for common bean and chickpea

Shawn Kaeppler (PI), University of Wisconsin, Madison, WI
$78,149

Enhancing the nutritional and functional traits of dry bean through metabolomics, genetics, and breeding

Phil McClean (PI), North Dakota State University, Fargo, ND
$74,104

Karen Cichy, USDA-ARS, East Lansing, MI
$71,184

James Harnly, USDA-ARS, Beltsville, MD
$73,000

Phillip N. Miklas, USDA-ARS, Prosser, WA
$39,957

Improved short season cowpeas and development of unmanned aerial system (UAS) and other phenotyping tools to advance pulse breeding

Seth Murray (PI), Texas A&M University, College Station, TX
$148,829 (funding for project Years 1 and 2)

Improving the nutritional value of chickpeas

George Vandemark (PI), USDA-ARS, Pullman, WA
$40,625 (project Year 2; partial Year 2 funding was provided in Fiscal Year 2018)

Sustainability Projects

Increasing nitrogen fixation potential in pulses for environmental and economic sustainability

Clain Jones (PI), Montana State University, Bozeman, MT
$75,830

Optimizing nodulation in chickpea for enhanced nitrogen fixation

Audrey Kalil (PI), North Dakota State University, Williston Research Extension Center, Williston, ND
$49,746 (funding for project Years 1 and 2)

Field experiments to incorporate pulse crops in cropping systems and assess soil health and plant water use efficiency

Zachary Kayler (PI), University of Idaho, Moscow, ID
$68,909

Using native rhizobia to improve salt-tolerance in field pea

Christopher Graham (PI), South Dakota State University, Rapid City, SD
$68,659

Sustainable field pea cropping systems for the Great Plains

Kraig Roozeboom (PI), Kansas State University, Manhattan, KS
$172,502 (funding for project Years 2 and 3)

Sustainability and health impact assessment of US pulses

Greg Thoma (PI), University of Arkansas, Fayetteville, AR
$81,137

Food Technology Projects

Optimization in the production of protein hydrolysates from chickpea as novel functional food ingredients in the prevention of type-2 diabetes

Elvira de Mejia (PI), University of Illinois, Urbana, IL
$137,177 (funding for Years 1 and 2)

Tailoring processing strategies to produce the new generation of chickpea proteins and prebiotic oligosaccharides

Juliana Maria Leite de Moura Bell (PI), University of California, Davis, California
$90,000

Impact of Storage on Functionality and Nutritional and Phytochemical Compositions of Pea, Lentil and Chickpea

Clifford Hall (PI), South Dakota State University, Brookings, SD
$90,400

Atanu Biswas, USDA-ARS National Center for Agricultural Utilization Research, Peoria, IL
$20,000 (funds to be released in Fiscal Year 2020)

Flavor, nutrition and functional properties of pea protein

Baraem (Pam) Ismail (PI), University of Minnesota, St. Paul, MN
$0 (project Year 2; Year 2 funding was provided in Fiscal Year 2018)

Starch Inclusion Complexes to Enable New Uses for Starch-Rich Byproducts of Pulse Processing

James Kenar (PI), USDA-ARS, Peoria, IL
$39,000 (funds to be released in Fiscal Year 2020)

The effect of food processing on fermentable oligosaccharides from pulse crops in human colon and its microbiota

Sean Liu (PI), USDA-ARS, Peoria, IL
$82,250

Optimizing pulse protein functionality

Brennan Smith (PI), University of Idaho, Moscow, ID
$77,315

Human Health Projects

Hidden Nutrition: Understanding the encapsulation dynamics of the cotyledon cell to optimize consumer acceptability and nutritional benefits of dry beans

Karen Cichy (PI), USDA-ARS, East Lansing, MI
$75,695

Ray Glahn, USDA-ARS, Ithaca, NY
$50,800

Donna Winham, Iowa State University, Ames, IA
$66,906

Pulse Resistant Starch: Interplay Between Processing, the Microbiome and Health

Darrel Cockburn (PI), The Pennsylvania State University, University Park, PA
$61,314

Understanding the Pulse-Gut relationship and its role in modifying systemic inflammation and insulin sensitivity in humans

Indika Edirisinghe (PI), Illinois Institute of Technology, Bedford Park, IL
$340,000 (funding for project Year 1 and 60% of Year 2)

Gut microbiota dependent and independent impacts of dietary pulses on pre- and postprandial metabolism and inflammation in overweight/obese humans

Mary Miles (PI), Montana State University, Bozeman, MT
$160,774

Comparative analysis of chickpea, dry pea, lentil and dry bean for human health traits

Henry Thompson (PI), Colorado State University, Fort Collins, CO
$90,000

Mechanisms of dry bean mediated anti-obesogenic activity

Henry Thompson (PI), Colorado State University, Fort Collins, CO
$0 (project Year 2; Year 2 funding was provided in Fiscal Year 2018)