

Idaho Incubation Fund Program

Progress Report Form

Proposal No. IF16-014
Name: (Amy) Hui-Mei Lin
Name of Institution: University of Idaho
Project Title: All Natural Low GI Potato
Reporting Period: Jan 1, 2016 – June 30, 2016

Information to be reported in your progress report is as follows (attach additional information as needed):

1. Summary of project accomplishments for the period just completed and plans for the coming reporting period:

The goal for the first year of funding was to establish a database of Idaho potato cultivars and modify potato tubers using natural approaches to modulate glycemic response (The proposed timeline is attached at the end of this report).

During Jan-June 2016, we examined starch characters and micro-tissue of major potato cultivars developed in Idaho and selected two candidates, which have desired micro-tissue (e.g. cell walls) to respond to modification. In the first year, we chose enzymatic modification to generate a pathway for guest molecules that will interfere digestion and decrease glycemic impact after consumption. We tested various types of enzymes to generate the desired channels but maintain the fiber amount that is beneficial to slow digestion. We continue examining the fine structure of starch for best interaction with selected guest molecules. Before the end of the first year funding period, we also started to test the second modification, which is a mechanic interruption of potato tissues.

2. Summary of budget expenditures for the period just completed (**include project burn rate**):

	<i>Salary & Fringe</i>	<i>Graduate student fees</i>	<i>Travel</i>	<i>Equipment</i>	<i>Consultant</i>	<i>Operation and suppliers</i>	<i>Total</i>
Budgeted	21,868	8,200	4,932	1000	19,000	6,700	61,700
Balance	0	0	0	0	0	0	0

The budget was closed in mid of June, and the current balance is zero.

3. Numbers of faculty and student participation resulting from the funding, including internships:

One faculty member, one graduate student, two undergraduate students (May only), and a consultant participated in this project.

4. List patents, copyrights, plant variety protection certificates received or pending:
N/A
5. List technology licenses signed and start-up businesses created:
N/A
6. Status of private/industry partnerships (include enough information to judge level of engagement):
The potato industry has shown their excitement and continues supporting this project this project with technical supports. The PI visited several potential partners in the South of Idaho in May 2016 to update the progress of this project.
7. Any other pertinent information that will indicate to the council that the project is meeting satisfactory progress.

This project was awarded in September 2015 to prove the concept that we can use natural approaches, without any chemicals or food additives, to modify the glycemic impact of potato after consumption. Students are using techniques that they learned in the classroom to create a new potato product with a low glycemic impact after consumption. We, for the first time, screened the structural characters of the major potato cultivars developed in Idaho; it was the first step to the understanding of potato's performance in quality attributes, including technical and nutritional qualities. We tested guest molecules, which are food ingredients, and enzymatic and mechanic approaches to modify potato's digestibility. Though the second year of the funding was not awarded in FY17, this project "all natural low GI potato" has gotten attention from the potato industry, especially potato processors in Idaho. With the support in FY16, we have built a strong case. We will continue seeking for grant opportunities to resume this project.

Appendix: The proposed timelines:

The project timelines include screen potato varieties, develop the proposed technology (modification), produce powder form product, assess nutritional and technical quality, and demonstrate the application. During Year 1, we completed the variety selection and

produced preliminary data of the proposed technology. It will take additional two years, working with the industry collaborators to bring the new products to market.

