

5/15/17

To: Chris Hamilton, NCRA Administrative Associate

From: Ron Perry, AA, NC 140

Subject: Response to reviewer comments

*I have addressed the question that was posed by reviewers regarding if we done a CRIS and NIMMS review regarding other projects. I have provided remarks in text format (italics) for each project noted using the search words fruit rootstocks.*

*In a search performed in NIMSS on 4/20/17, no projects were found that focused on Tree Fruit Rootstocks ([https://www.nimss.org/projects/run\\_advanced\\_search?keyword=Tree+Fruit+Rootstocks](https://www.nimss.org/projects/run_advanced_search?keyword=Tree+Fruit+Rootstocks))*

*<http://cris.nifa.usda.gov/cgi-bin/starfinder/1573/crisassist.txt>*

*Search in CRIS results on 4/20/17 where 62 projects were found using keywords Tree Fruit Rootstocks*

*The majority of projects found are submitted by individual participants and members of NC140 where research is being conducted within the framework of NC140. IMPROVING ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY IN TREE-FRUIT PRODUCTION THROUGH CHANGES IN ROOTSTOCK USE. (therefore; double reporting).*

*Several independent projects are outdated and terminated.*

Example of independent projects include:

**SUSTAINABLE FRUIT PRODUCTION IN NORTHERN NEW MEXICO; INVESTIGATOR: Yao, S.; Heyduck, RO, .**

*Investigator, Yao, S is an official member of NC140 with uniform rootstock trials as a collaborator*

**FUNCTIONAL ANALYSIS OF PRODUCTIVITY AND QUALITY TRAITS IN TREE CROPS; Investigator: Dandekar, UNIVERSITY OF CALIFORNIA, DAVIS**

*Investigator Dandekar is not a member of NC140. This project includes nuts (not a crop studied in NC140) with focus on basic research in DNA sequencing technologies to provide a deep profile of the transcriptome using RNAseq methods, high resolution proteomics and metabolomics. No duplication expected with a focus on California industry needs and problems.*

**GENETIC IMPROVEMENT OF SOUR CHERRY AND CHERRY ROOTSTOCKS: Investigator, lezzoni, AM, .; Sundin, GE, .; Hammerschmidt, RA, .; Perry, RO, .; Lang, GR,**

*Investigator lezzoni is breeding new rootstocks at Michigan State University from which new rootstocks are generated and elite clones enter into NC140 rootstock trials. No duplication of effort. lezzoni is providing new rootstocks for NC140 trials within Objective 2. To develop improved rootstocks for temperate-zone fruit trees, including breeding, using phenomic and genomic tools and*

*acquisition of new rootstocks from global sources. Lang, G is the official member of NC140 from Michigan in this project. Focus in this project is in developing rootstocks for resistance to Armillaria root rot in Michigan. Many of these rootstocks are being included in a uniform trial (Objective 1) to be established spring 2017.*

**FRUIT AND NUT TREES IN A DYNAMIC ENVIRONMENT ? QUANTIFYING SPECIES RESISTANCE TO ABIOTIC STRESSES (FREEZING, SALINITY AND DROUGHT) AND THEIR COMBINATIONS:** Investigator, Zwieniecki, MA, UNIVERSITY OF CALIFORNIA, DAVIS

*Studying tree resistance to major abiotic stresses--namely, freezing, salinity and drought for California fruit and nut industries (NC140 does include nut crops). No duplication of effort since this focusing on nuts and fruit in California only. Work in California is similar to NC140 Objective 3. To investigate physiological processes, biotic and abiotic stresses and scion/rootstock interactions on tree growth and productivity.*

**ACCELERATING THE DEVELOPMENT, EVALUATION, AND ADOPTION OF NEW APPLE ROOTSTOCK TECHNOLOGIES TO IMPROVE APPLE GROWERS PROFITABILITY AND SUSTAINABILITY:** Investigator, MAZZOLA M, USDA, ARS, Tree Fruit Research Laboratory, Wenatchee, WA.

*No duplication of effort. Mazzola is providing new rootstocks for NC140 trials for testing in WA as well as across North America (Objective 1).*

**IMPROVING DISEASE RESISTANCE, FRUIT QUALITY, AND GROWTH HABIT OF TEMPERATE FRUIT CROPS THROUGH GENETIC ENGINEERING:** Investigator, SCORZA R; DARDICK C D; CALLAHAN A M; BELL R L, USDA, WALT DISNEY PARKS & RESORTS U.S.. *Genetic engineering will be utilized to improve traits that have been either impossible or too time consuming to approach through traditional breeding techniques. These traits include disease and insect resistance, particularly exotic pests and pathogens, flower, fruit and seed development, and tree architecture. Traditional breeding approaches not used. Genetic material created in this program will be included in NC 140 trial testing (Objective 1).*

**ASSESSING THE POTENTIAL OF ROOTSTOCK TECHNOLOGIES AND RESEARCH TO INCREASE PROFITABILITY AND SUTAINABILITY IN TREE FRUIT PRODUCTION:** Investigator, G. Fazio, USDA, NY. *Investigator is an active member of NC140 and utilizes the project to test elite progeny developed via breeding program for rootstock trials (Objective 1).*

**THE IMPACT OF MODERN ORCHARD ARCHITECTURES AND ROOTSTOCKS ON PRODUCTION, QUALITY, AND MINERAL NUTRITION OF FUJI APPLE;** *Investigator E. Fallahi, Parma, ID is an active member of NC140. This project is focused on Fuji apple improvement and in Idaho. Works within objectives of NC140 framework.*

**ROOTSTOCK AND INTERSTEM EFFECTS ON POME AND STONE FRUIT;** *Investigator, Michelle Warmund, University of Missouri, is an active member of NC140. This project is outdated with termination in 2006.*

**IMPROVING ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY IN TREE-FRUIT PRODUCTION THROUGH CHANGES IN ROOTSTOCK USE; *Investigator G. Lang, R. Perry and G. Sundin, Michigan State University. Works within objectives of NC140.***