

QWYK 4-21-20

SPECIALTY CROP

17-366 – NDSU – Advancing Viticultural Management techniques for North Dakota.

\$70,976.92

To meet the needs of the North Dakota grape and wine industry, viticultural techniques will be evaluated to enhance productivity, quality, and economic sustainability of grapes grown on commercial vineyards

17-375 – NDSU - Screening of the North Dakota State University Grape Germplasm Collection For Temperature Adaptive Acclimation Response

\$44,469.26

To develop improved grapevine germplasm with greater winter survival, dormancy acclimation is a critical suite of traits necessary for incorporation within a breeding context

17-377 – NDSU - Making Better Selections of Japanese Haskap for North Dakota

\$32,950

These plants and all of our data are the benchmarks with which we will judge and select plants that perform better in North Dakota conditions. This grant allows us to continue to visit their orchard and breeding fields and make selections that might perform better here. The third aspect of this project was to investigate the use of alternative bees in the place of native bees or honey bees, We theorize that this is due to a lack of bees at the time they bloom

18-263 – NDSU – Investigation the Polyphenol Content of ND Grown Aronia Berries

\$71,588

We propose that North Dakota-grown aronia fruit may possess superior quantities of polyphenolic compounds as compared to fruit grown at more southerly latitudes. With this research, we intend to show that North Dakota's 'McKenzie' fruit is indistinguishable from other types of aronia so that our growers can sell their fruit without reservation in the US market.

18-270 – NDSU - Evaluation, Development, and Postharvest Treatments for Improved Quality of Cold-Hardy Interspecific Grape Crosses.

\$212,809.17

To address the needs of the industry the NDSU Grape Enhancement program continued evaluation and culling of the 10,000+ accessions located at the NDSU North Central

Research Extension Center near Minot, ND and the NDSU Ag. Expt. Station for the advancement of material into replicated studies. North Dakota State University also initiated breeding efforts to increase disease resistance in germplasm and to conducted research fundamental to the expansion of the Upper Midwest grape and wine industries through investigating the commercial potential of elite grapevine selections and determining prospects of underdeveloped methodologies for improving fruit quality of Vitis riparia based red wine grapes.

20-483 – NDSU – Putting North Dakota Small Fruit Breeding into Action.

\$68,778

After years of examination, North Dakota State University is almost ready to release serviceberry and cold-hardy grape cultivars. North Dakota State University will collect cultivar specific release data and examine the best methods to increase plant material for release to licensed propagators.

20-484 – NDSU - Adaptive Management Response to Extreme Climatic Swings for North Dakota's Grape and Wine Industry

\$89,870

To lead and execute the project to evaluate grapevine acclimation, periderm accumulation, and mid-winter cold-hardiness following in-season foliar application of critical nutrients. Supplementary evaluation of grapevine fruit quality following in-season foliar application of foliar nutrients and evaluation of grapevine acclimation and periderm accumulation in a greenhouse environment will be conducted to support physiological results from field studies

21-304 – NDSU - Integrated Improvement Process of Cold-Hardy Grapes; from Breeding, Production, to Sensory Analysis.

\$266,634.57

To evaluate 11,000+ winter-hardy grape accessions, including breeding projects, to grafting and production improvements, to final microvinification (small batch wine) process and tasting evaluations at the NCI.

21-301 – NDSU - Virtual Experiences Delivering Real Protection of Specialty Crops from Plant Diseases and Economic Loss

\$120,305.11

North Dakota State University plant pathologists will deliver transformational educational experiences to growers by utilizing immersive 360-degree videos and drone imagery that teach disease management practices by letting growers 'experience' protection of specialty crops from diseases and yield loss.

22-240 - Evaluating Aronia for Edible and Ornamental Use for North Dakota

\$56,655.77

These cultivars, unreleased germplasm and species were evaluated as an ornamental shrub for landscape use, commercial nursery production to determine establishment, winter and drought hardiness, soil adaptation, pest susceptibility, aesthetic characteristics, fruit production and survival in North Dakota at two different locations including the NDSU Horticulture Research Farm

24-105 – NDSU - Evaluation, comparison and survival of hardwood and green cuttings for grape propagation in a northern climate

\$30,000

The North Dakota State University's North Central Research Extension Center in Minot will lead a project that evaluates, compares and determines survival rates for advanced grape lines in the current research vineyard consisting of ~2,000+ winter-hardy grape lines. These advanced lines will be evaluated for survival and ability to propagate when selected as hardwood and/or green cuttings. Hardwood cuttings will be taken from mature, dormant woody growth, while green cuttings are taken from fresh, green tissue.