



WYOMING TOUGH

Fruits, vegetables that survived former Cheyenne field station tests bested Mother Nature's worst

Jennifer Thompson

Thoughts of bountiful fruits and vegetables would be the last thing on your mind standing on a promontory called Roundtop west of Cheyenne in 1924 while looking out across the wind-swept high-elevation landscape

Little known to you, change was in the wind, and horticulture was about to arrive!

Congress established the USDA's Cheyenne Horticultural Field Station in 1928 on more than 2,000 acres northwest of Cheyenne. Its purpose? Test and propagate fruit, ornamental, shelterbelt and shade trees, shrubs, vegetables, fruits, and vines that were adapted to colder and drier climates.

Cheyenne was indeed the spot to be. Other authors have covered the testing and development of useful trees and shrubs in this challenging environment. Let's look at the station's contributions in the area of fruit and vegetables.

Initial Work

First tasks were planting windbreaks, constructing buildings, and preparing fields for planting. The first plantings began in the early 1930s. Apple, pear, plum, and cherry trees were planted in dryland and irrigated (watered twice a year) fruit orchards until 1949.

The intent was to test three plants of each fruit variety. A tree that died a year after the first planting was replanted if possible (the apple variety 'Gravenstein' was planted 31 times). More than 1,300 selections or "varieties" of apples, crabapples, pears, plums and cherries, usually grafted onto hardy rootstock, were tested in these orchards until the trials ended in 1960.

Conditions were tough. A quarter of the apple and crabapple varieties failed to have any plants survive long enough to further test for yield. Only 36 percent of pear varieties survived.

Varieties Sent to Ranches, Farms

Many of the more promising varieties were sent to cooperators at ranches and farms in the region and other experimental farms. Out of nearly 30 years of trials, some of the recommended apple varieties that can still be purchased at nurseries specializing in cold-hardy fruit trees include Anoka, Cortland, Haralson, Joyce, Lodi, Red Duchess, Redant, Sharon and Wealthy.

One of the hardier crab apples was Dolgo. Niels Hansen from the South Dakota Agricultural Experiment Station collected Dolgo seed during a plant discovery trip to Russia in the late 1890s.

Sweet cherries were generally too tender to survive ('Bing' cherry was planted and died 21 times). "Sour" or "pie" cherries were more successful. Varieties recommended were English Morello, Montmorency, Meteor, and Early Richmond.

Both European or "prune" plums and Asian hybrid plums were tested. Prune types that were recommended and are still available include Mt. Royal and Hildreth (a variety developed at the station and named after one of its directors). Recommended Asian hybrid plums included La Crescent, Pembina, and Superior. Even western sandcherry x native plum crosses were grown and tested – varieties recommended included Opata, Sapa, and Oka. Due to the short-lived nature of these particular hybrids, they are unlikely to be found today.

See the summer 2007 *Barnyards & Backyards* article by Mark Hughes for more information on the trees and shrubs of the station.



The experimental farm soon after establishment through modern days.

Unfortunately, most of the old, surviving fruit trees were cleared when the station became a grassland research station in 1974.

Small Fruit Variety Testing

The station also tested more than 300 varieties of small fruits for hardiness to drought and cold. Small fruit crops performed well. Those performing especially well included Red Lake and Red Cross currants, Pixwell and Red Jacket gooseberries, and Alpha, Beta, and Dakota grapes.

The station excelled in development of raspberry and strawberry varieties. To increase cultivated strawberry cold and drought tolerance, station geneticist Leroy Powers collected more than 42,000 native plants in the Rocky Mountain states from Montana to New Mexico.

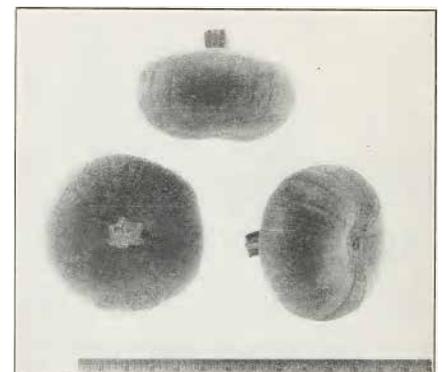
The native species fruit was small, so these plants were cross-pollinated with commercial varieties to produce hybrids adapted to the High Plains but also able to provide substantial-sized fruit. From this research, three varieties were released, and two are still grown today – Fort Laramie and Ogallala.

Similar breeding was carried out with wild raspberries and cultivated hybrids resulting in three varieties released for the high plains – Pathfinder, Plainsman, and Trailblazer. Raspberries occupied almost 10 acres of the station at one point.

And Vegetables Tested, Too

More than 8,000 vegetable varieties were tested for suitability in colder, drier climates. Varieties were also tested at experimental farms at Afton, Eden, Gillette, Lyman, Sheridan, Torrington, and Worland.

Myron F. Babb oversaw vegetable research at the station. In 1942, he and W. Quayle published a 39-page reference manual for growing vegetables (in irrigated, and in areas with



Early Cheyenne Pie Pumpkins



A wide variety of ornamental flower research was also conducted at the station including testing more than 700 species of herbaceous perennials and the development of the 'Cheyenne Hardy Chrysanthemum'. More than 45 varieties of the Cheyenne Hardy Mum were released.

higher rainfall, un-irrigated, garden plots) as a University of Wyoming Agricultural Experiment Station bulletin.

This document listed recommended vegetable crops and varieties for the state: asparagus, horseradish, perennial onions, rhubarb, cabbage, cauliflower, broccoli, collards, kale, spinach, Swiss chard, celery, lettuce, endive, parsley, beets, carrots, parsnips, radishes, rutabaga, turnip, a variety of beans, peas, tomato, pepper, eggplant, cucumber, muskmelon, watermelon, squashes and pumpkins, corn, and onions. Recommendations were given for higher and lower elevations in the state.

Mini-pumpkins and tomatoes were some of the more notable vegetables developed as part of selection and breeding programs. 'Early Cheyenne Pie Pumpkins' were small, pie pumpkins developed from plants selected for early maturity. These flat, wide, mini-pumpkins were large enough to make one pie.

A high number of tomato varieties were tested over time (400 in

some years). As might be expected, many of these varieties failed; however, in addition to testing common varieties from elsewhere in the U.S., researchers tested hardy varieties collected from other places in the world (such as Siberia).

These hardy strains were then cross-pollinated with more common commercial varieties. Three tomato varieties were developed at the station: Highlander, Colorado Red, and Alpine.

Although the variety trials and breeding work done at the station are now part of history, some of the varieties tested there still survive at heirloom nurseries (though exact identities may be clouded), as elderly fruit trees in backyards whose names have long been forgotten or as part of the genetics that now underlie some commercial cultivars.

You can learn more about the station's past and future (including links to original publications) by visiting Barnyardsandbackyards.com and reading the book "High Plains Horticulture: A History" by John F. Freeman.



Dolgo crab apple

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