

Aronia Drip Irrigation Trial

Colorado Arid Locations

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What is Aronia?

- Perennial North American native berry bush
 - Also known as chokeberry and also an ornamental
 - *Aronia melanocarpa*, also *Photinia melanocarpa*
 - Small black pomaceous berry
 - *Aronia arbutifolia*, also *Photinia melanocarpa*
 - small reddish pomaceous berry
 - *Aronia prunifolia*, also *Photinia floribunda*
 - Natural hybrid, w/small dark purple pomaceous berry
 - *Aronia mitschurinii*, also *Sorbaronia mitschurinii*
 - Natural hybrid, w/small dark purple pomaceous berry





Aronia Cultivation

- Most of world commercial culture in Europe
 - Poland = 60% of production
 - Russia, Baltic states, Sweden → most of other %
- Increasing re-introduction into North America
 - Mostly Polish or Russian cultivars
 - Most production in Midwest, recently to Colorado
 - Prolific → up to 5 tons/acre at 3-5 years
 - Hardy to Zone 3, disease and pest resistant
 - Specialty Crop USDA designation





Aronia Marketing

- Marketed for high antioxidant content
 - Fresh berries
 - Strong unusual flavor (like or dislike)
 - Very astringent, a bit bitter
 - Freezing and heating reduce astringency
 - Jam, juice, tea, baking ingredient, wine
 - Juice concentrate
 - Marketed as health tonic
 - Used for juice blends, wine feedstock





Colorado Aronia Project Purpose

USDA/CDA Specialty Crop Block Grant

- “Field irrigation response of *Aronia melanocarpa* cv Galicjanka, a new multi-product Colorado fruit to enhance crop diversity”
- Produce horticultural data for growers
 - Growers use data for new commercial plantings
 - Test plots also are promotional demonstrations



Colorado Aronia Project Purpose

CDA Specialty Crop Block Grant

- Can be grown in arid locations?
 - Test application levels in drip irrigation system
 - Measure growth for levels of available moisture
- Two test plots of two ages, year 1 and year 3
 - CSU Agricultural Experiment Stations
 - CSU-OM and CSU-ARDEC South locations
 - *Aronia melanocarpa* cv Galicjanka



2018 Project Results

OM Results (ARDEC not yet available)

- Early normal season
 - May 5.82 in. and 66⁰ F ave.
- Mid-season dry and hot
 - June-Aug. 1.77 in. and 77⁰ F ave.
- Late season dry
 - Sep. 0.56 in. and 62.6⁰ F
- Plants stressed by hot, dry, windy mid-season
 - → doubled weekly irrigation for all test levels



2018 Project Results

OM Results (ARDEC not yet available)

- Preliminary Growth Data for all replicates
 - Range from 4 to 50 times increase in mass over season for all plants; ave. 9 times increase in mass
 - About 6 times ave. increase in mass for 0.5 gph emittters
 - About 6 times ave. increase in mass for 1.0 gph emittters
 - About 15 times ave. increase in mass for 2.0 gph emittters

