



THE STORY OF WILD BLUEBERRIES

10,000 YEARS IN THE MAKING

THE STORY OF WILD BLUEBERRIES OF MAINE

- Wild blueberries are considered a wild, place-based food. Through a happy convergence of geography, climate and natural phenomena, they grow in Maine.
- Wild blueberries emerged on the desolate plain, aptly called The Barrens of Maine following the retreat of the glaciers more than 10,000 years ago.
- Unlike ordinary blueberries, wild blueberries are not planted. Instead, they are indigenous (1 of 3 native North American fruits) and spread naturally where Mother Nature put them, with thousands of genetically different varieties in every field.
- The Wabanaki Tribe of Maine were among the first humans to use wild blueberries, both fresh and dried, for their flavor, nutrition, and healing qualities. Since then, generations of Maine's farmers have been doing all they can to nurture and protect them.
- Wild blueberries have never been hybridized or genetically modified to enhance or alter their naturally occurring characteristics.
- This diversity is what gives wild blueberries their intense, delicious, sweet-tart taste and their spectacular blend of complex flavors.

HOW WILD BLUEBERRIES GROW

- Wild blueberries have an extensive underground rhizome system. As much as 70% of the plant actually lives underground, spreading horizontally in the few inches of organic matter atop the sand and gravel of glacial soil below.
- When pruned, new stems sprout from the rhizome, grow, and form flower buds the first year.
- Wild blueberries are grown on a two-year cycle. Each year, half of a grower's land is pruned to encourage vegetative growth while the other half is prepared for the wild blueberry harvest from July through August.
- Wild blueberries survive in thin, acidic, glacial soils and thrive in cold, harsh climates. This has the benefit of naturally reducing crop insects and pests.



HEALTH BENEFITS OF WILD BLUEBERRIES

HEALTH BENEFITS OF WILD BLUEBERRIES VS. ORDINARY BLUEBERRIES

- Most people don't know that there are two kinds of blueberries — wild blueberries and ordinary cultivated blueberries — and that they are vastly different.
- The millions of plants on the wild blueberry barrens provide a unique genetic diversity and complex flavor profile that cannot be duplicated by ordinary blueberries, which have only a few varieties per acre.
- Maine's leading expert on wild blueberry plants, David Yarborough, Ph.D, Professor Emeritus of Horticulture, Professor Emeritus Wild Blueberry Specialist at the University of Maine, notes that wild blueberries have adapted to their native environment over thousands of years and have more plant diversity than their regular cultivated counterparts.
- They also contain a more intense concentration of bioactive plant compounds that provide taste and health benefits.

OVERALL HEALTH ADVANTAGES OF WILD BLUEBERRIES

- Extensive research over the last 20 years is revealing just how much wild blueberries can improve human health. Findings suggest that the antioxidant and anti-inflammatory properties of wild blueberries may contribute to better brain health, gut health, heart health, cancer prevention, reduced risk of diabetes, and increased urinary tract health.
- Wild blueberries have twice the antioxidant capacity per serving as compared to regular cultivated blueberries.
- Wild blueberries have a higher skin-to-pulp ratio than their larger cultivated counterparts. More skin and less water equals more antioxidant-rich pigment and more intense blueberry flavor.
- Wild blueberries have 30% less sugar than cultivated varieties, with just 10 grams of sugar per cup. Wild blueberries are a low-glycemic food, scoring 53 on the 100-point glycemic Index. They also have just 80 calories per one-cup serving.
- One cup of wild blueberries provides 4 mg or 200% of the recommended daily allowance of manganese, which the body needs to regulate blood sugar, heal skin problems, and maintain strong bone health. One serving (1 cup) of wild blueberries contains 8x more manganese compared to regular cultivated blueberries.



HEALTH BENEFITS

WILD BLUEBERRY HEALTH RESEARCH

To read about the dozens of health studies that have been conducted and to view a range of videos and consumer information, please visit www.wildblueberries.com.

Health Research-Related Links:

<http://www.wildblueberries.com/health-research/research/>

<http://www.wildblueberries.com/health-research/antioxidants/>

<http://www.wildblueberries.com/health-research/nutrition/>

<http://www.wildblueberries.com/the-better-blueberry/>

- With 0.8 mg of iron per cup, wild blueberries are ideal for anyone not eating other iron-rich foods, like meat.
- With 6.2 grams of fiber per cup – 25% of the recommended daily allowance – wild blueberries provide a delicious way to boost fiber intake. One serving of wild blueberries has 72% more fiber than regular blueberries.
- Wild blueberries have a higher concentration per serving of the flavonoid anthocyanin, a phytochemical found in blue-pigmented fruit, that is recognized for its anti-inflammatory and antioxidant properties.

WILD BLUEBERRIES & BRAIN HEALTH

- There is evidence of a growing connection between cardiovascular disease, Type 2 diabetes, and metabolic syndrome, and increased risk for dementia and Alzheimer's disease.
- With 33% more deep purply blue anthocyanins and 2x the antioxidants of ordinary blueberries, wild blueberries contribute to healthy brains.
- Research found significant positive effects on memory, decision-making, response times, concentration and mood when children consumed a wild blueberry beverage before testing.
- A large population study demonstrated that higher intake of anthocyanins is associated with a slower age-related decline in cognitive performance, and a substantial reduction in risk for Parkinson's disease was associated with anthocyanin consumption.
- Studies indicate daily that wild blueberry supplementation for elderly adults experiencing cognitive impairment can enhance neural response in certain areas of the brain, and decrease mistakes made in memory.
- A study of people over 68 who were at risk of dementia showed that daily blueberry supplements enhanced brain activity during a memory task.
- Research suggests that regular exercise leads to better brain health. Wild blueberries support enhanced fat burning and viral protection when combined with exercise.
- Daily consumption of wild blueberries may decrease inflammation implicated in chronic diseases, which can impact cognitive health.



FROZEN LOCKS IN FRESHNESS

AN EMERGING AWARENESS

FROZEN LOCKS IN FRESHNESS — AN EMERGING AWARENESS

- 99% percent of the annual wild blueberry harvest is individually quick frozen (IQF) within hours of being harvested. The remaining 1% is sold fresh, mostly in New England, during the month of August.
- Freezing wild blueberries within 24 hours of harvest helps ensure that their taste and nutrition health benefits are locked in.
- Research conducted by the University of California, Davis found that frozen fruits and vegetables have the same or greater nutritional value as their fresh counterparts.
- Imported fresh berries and even berries grown in the United States are often picked prematurely, before they fully ripen, in order to endure long journeys and transportation delays before ultimately being sold as fresh fruit. It's well documented that the moment a fruit is picked, its taste, antioxidant and nutritional values begin to deteriorate.
- Frozen wild blueberries are often less expensive than imported fresh berries.
- When consumers choose frozen wild blueberries, they are directly supporting rural farmers and their families in Maine. Because many farms are multi-generational, these purchases are helping preserve a rural way of life that has been enjoyed for hundreds of years.



HARVEST, CROP MANAGEMENT, POLLINATION, ORGANIC, AND ECONOMIC IMPACT

HARVEST CHANGES OVER TIME

- Wild blueberries were originally handpicked and packed in small wooden boxes, canned, and taken by schooner, and then by rail, to urban markets.
- In the 1800s, a hand rake was developed (and later improved upon), and is still in use on wild blueberry fields.
- A mechanical harvester was developed in the 1970s at the University of Maine, and a version of this tractor now harvests more than 80% of the wild blueberry crop.

SURVIVAL STRATEGY AND IRRIGATION

- Wild blueberries are a stress tolerant plant that is able to survive and thrive in low pH, sandy, loam soils that do not hold much water.
- Maine has ample rainfall — about 45 inches a year — but the summers can be dry with uneven precipitation.
- Wild blueberries need about one inch of rain each week; therefore, some growers have invested in irrigation systems to ensure the plants have the water they need for optimal productivity.

TWO-YEAR CROPPING CYCLE

- Native Americans discovered that wild blueberry fields increase their yield when pruned or burned. Originally, they used a practice of burning the fields every 5 years.
- Research from the 1960s found 2-year burn cycles to be the most productive and this practice was quickly adopted by growers.
- After the oil crisis of the 1970s, research done by the University of Maine indicated that mechanical mowing to within one inch of the ground was an effective alternative to burning and much lower in cost.
- Today, most fields are mowed. Over time, fields have also been leveled and cleared of large rocks, streamlining the mowing process.

LOW-INPUT CROP

- Wild blueberries are often referred to as a “low-input” crop because they are native to Maine, they have adapted to a unique growing environment, and they are naturally resistant to many native pests.
- Over the past 6 decades, wild blueberry growers have partnered with the University of Maine to develop state-of-the-art methods for controlling insects and plant disease, while also minimizing the use of pesticides.



HARVEST, CROP MNGT... cont.

USE OF POLLINATORS

- Wild blueberries must be insect-pollinated to produce fruit. Good pollination produces more and larger berries and a more consistent ripening.
- Although there are hundreds of different native pollinators in wild blueberry fields, their numbers and occurrence vary, so additional pollinators are needed to produce a larger crop.
- Maine imports thousands of honeybee hives (60,000 in 2016), making it the second largest user of bees, after California almonds.

SEASONAL FARMWORKERS

- Historically, wild blueberry crops were harvested predominantly by Maine families. However, today the industry relies on seasonal farmworkers, many of whom travel to Maine each summer for work.
- During the peak of the harvest season, wild blueberry growers may employ dozens of seasonal farmworkers to harvest and flash freeze the berries to ensure a high-quality product.
- The Maine Department of Labor coordinates services for seasonal workers in Maine, and wild blueberry growers follow detailed state and federal labor laws as they apply to seasonal and migrant workers.

ORGANIC PRODUCTION

- In Maine, there are approximately 40 growers who are certified organic, but because wild blueberries are a low-input crop, the vast majority of our growers employ the knowledge-based crop management system known as Integrated Crop Management (ICM).
- ICM techniques are based on University of Maine research, which allows growers to sustainably manage the crop with the least possible impact on people and the environment.
- Organic fields tend to be less than 10 acres and yields are much lower per acre than conventional fields (2,000 lbs. versus 8–12,000 lbs.).
- Organic is a small, but growing percentage of the total crop, and demand for organic wild blueberries is increasing.

ECONOMIC IMPACT

- Wild blueberries are harvested commercially only in Maine, Eastern Canada, and Quebec, and Maine is the largest producer of wild blueberries in the United States.
- The economic impact of the wild blueberry harvest in Maine provides \$173 million in direct sales, 2,500 jobs, and a \$63 million annual payroll, according to a 2009 study conducted by Planning Decisions, Inc.
- The wild blueberry is Maine's official state berry.
- Through careful management of the land, the indigenous wild blueberry crop of Maine now produces a total crop of roughly 100 million pounds every year. The state's five-year average is about 71 million pounds per year.