CROP PROFILE

Tartary Buckwheat and the Reawakened 25

TARTARY BUCKWHEAT IS A STAPLE CROP IN WESTERN CHINA AND THE HIMALAYAS. Its nutritional profile is particularly appreciated because of being rich in rutin and quercitrin. These nutrients have been proven effective in detoxification and prevention of liver damage. Unfortunately, its major gift is also its biggest condemnation; rutin and quercitrin are responsible for the buckwheat's bitter taste. Women in Southwest China are the drivers for the rediscovery of this crop, playing a critical role in managing buckwheat production, food preparation and seed exchanges. Combining their actions with the work of local geneticists and biologists could be the recipe for the success of Tartary buckwheat.

TARTARY BUCKWHEAT

Fagopyrum Tataricum

Origin: China
Grown across China
Stable crop with antitumor, antioxidant, anti-inflammatory, and anti-diabetic properties

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BOTANY

Slightly daintier than its well-known relative common buckwheat, Tartary buckwheat grows 15-45 cm tall, with arrow-shaped leaf blades 2-7 × 2-8 cm (Farms.com). Tartary buckwheat is a warm season annual; in the summer, it produces small greenish-white flower clusters, which eventually produce small, ovaloid black-brown seeds. Because buckwheat belongs to the Polygonaceae family, it is not a true cereal grain. However, buckwheat and cereal grains contain similar chemical compositions and have similar utilizations (Ikeda). Thus, buckwheat is considered a "pseudo-grain."

CULINARY USE

Tartary Buckwheat is consumed in China, Japan, Nepal, India, Eastern Europe, and across North America. Although the Tartary variety is more bitter than common buckwheat, both varieties are nutty, earthy and delicious. Buckwheat may be consumed whole, as tea, or ground into flour for breads, pancakes, and various baked goods. Currently, the most popular buckwheat product is soba, a mixture of water and buckwheat meal extruded to form a noodle. Soba originated in China, but is now a staple in Japanese cuisine. In Europe, buckwheat is commonly eaten as kasha, roasted whole buckwheat groats. Kasha is a nutritious alternative to quinoa, bulgur, or other grains. In the Himalayas, the groats and flowers are steeped for tea. Owing to buckwheat's versatility and widespread geographic distribution, the pseudo-grain has numerous unique culinary applications (Tartary Buckwheat).

NUTRITION AND MEDICINAL USE

For more than 1000 years, Chinese traditional medicine has utilized Tartary buckwheat as a medicinal herb. Packed with vitamins, minerals amino acids, antioxidants, and dietary fiber, Tartary buckwheat is a highly nutritious alternative to wheat, corn, and rice. Further, Tartary buckwheat contains high levels of sulphur-containing amino acids, glycine, and arginine, which lower cholesterol and alleviate hypolipidemic and hypoglycemic effects when treating diabetes. Compared with common buckwheat, Tartary buckwheat also provides higher levels of rutin, an antioxidant with anti-inflammatory and cancer-fighting properties. Rutin has also been shown to fight memory impairment in conditions like Alzheimer's (Cai et. al).

AGRICULTURE

Historically, Tartary buckwheat has been cultivated in temperate zones of the Northern hemisphere in areas with poor soil quality, low temperatures, and little rainfall. Additionally, Tartary Buckwheat requires little tilling, chemical fertilizers, or pesticides (Farooq et. al). Tartary buckwheat has also been cultivated in elevations up to 4500m (Suvorova and Zhou). The short growing season spans from late summer to early autumn. Its short growing season also makes Tartary buckwheat the perfect crop for crop rotations; in China, Tartary buckwheat is planted in the fallow season, which improves soil fertility (FAO 63). Crop rotational diversity provided by Tartary buckwheat also provides late-summer nutrients for insects, resulting in greater biodiversity across the food chain (Zhou et. al 230).

HISTORY

Tartary buckwheat is a descendant of a wild buckwheat species F. tataricum ssp. potanini, from which it was domesticated in Yunnan, China (Ohnishi). Since domestication, Tartary buckwheat has diffused across Asia, especially in regions with high-elevation, and eventually made its way to Eastern Europe and North America. In 1791, the Tartary buckwheat cultivar was classified and named Fagopyrum tataricum (Ohnishi, Rufa). In the Himilayan region, fried buckwheat noodles are used in religious ceremonies. The Yi people in Southwest China conduct religious ceremonies using buckwheat and give the staple crop to neighbors as a gift of gratitude (Song et. al). Tartary buckwheat is growing in popularity in China, and has great potential for worldwide cultivation (FAO).

RESEARCH

For many years, Tartary buckwheat was known in China as a poor quality, inedible crop. Today, Chinese researchers at various organizations in China have been correcting misinformation by disseminating knowledge of Tartary buckwheat's uses and nutritional benefits. The IPGRI (International Plant Genetic Resource Institute), with partners in China, has also promoted Tartary buckwheat as an underutilized crop with great potential to improve nutritional outcomes in the 21st century (Rufa). Recognizing Tartary buckwheat's nutritional capacities, the Chinese government began storing over 2000 buckwheat germplasms in banks, which, as of 2008, held 879 bitter buckwheat varieties (Rufa, FAO 83). Unfortunately, buckwheat cultivation has declined in recent years due to low yields. In order to ensure that buckwheat demand can be met, crop improvement programs, scientists, and agricultural communities should focus efforts on improving farming techniques and buckwheat breeding to increase yield and revitalize buckwheat's cultivation (Zhou et. al).

CUISINE

- Himalayan Tartary Buckwheat Tea
- Spicy Buckwheat Noodles
- Cooking Buckwheat Kasha

SOURCING

- Seeds
- Tartary Buckwheat Soba Noodles
- Buckwheat tea

COMMUNITY RESOURCES

- Tartary Buckwheat Crash Course
- Tartary Buckwheat Overview

RESOURCES

- Buckwheat Agriculture
- Cai et. al, Tartary Buckwheat Nutrition
- FAO
- Zhou et. al
- Farms.com Growing Tartary Buckwheat
- Farooq et. al
- Janovská and Čepková Buckwheat Nutrition
- Ohnishi Origin of Buckwheat
- Maksimovic et. al Advances in Buckwheat Research
- Rufa
- Tartary Buckwheat Culinary Uses
- Suvorova and Zhou
- Song et. al