



Perennial Baki™ Bean

Imagine a vibrant, protein-rich, pink-flowered perennial pulse crop that begins to show up on the landscape and store shelves. We think it's possible, and The Land Institute's perennial legume program is onto something. We're calling it perennial Baki™ bean.



Terminology

Legume: a member of the plant family Fabaceae, along with other common crops like peas, soybeans, alfalfa, and clovers. Many legumes form symbiotic relationships with bacteria in nodules on their roots, allowing them to convert nitrogen from the atmosphere to a form that plants can use.

Grains: small, hard, dry, edible, and nutritious seeds of plants.

Pulses: grains that provide proteins.

Benefits

- pollinator habitat
- honey production
- pulse crop
- soil health
- nitrogen fixation
- forage

Nutritional Quality

38.8% protein	6.96% crude fat
<small>compared to 39.9% for soybean</small>	<small>higher than most pulses</small>

Composition (g/100g, dry matter)

Sainfoin (*san-foyn*) is currently used by farmers as a forage crop in the northwestern US, mainly Montana, Wyoming, and Idaho, states known for their long winters and short growing seasons. The Land Institute is developing sainfoin as a potential perennial pulse crop that could yield nutritious, edible seeds and deliver numerous ecological benefits under the trademarked “perennial Baki™ bean.” “Baki” means eternal in Turkish, acknowledging the plant's origins, honoring our collaborative efforts with researchers in this Fertile Crescent region, and symbolizing our vision for perennial agriculture.

While The Land Institute's exploration of sainfoin as a potential staple food is relatively recent, people have used it as a forage crop for hundreds of years in Eurasia. The legume could deliver ecological and economic benefits on farms. Its ability to pull nitrogen, an essential nutrient for plants, from the atmosphere and incorporate it into soils may reduce or eliminate the need to apply synthetic fertilizers, decreasing farm input costs. Combined with sainfoin's [drought tolerance](#) and efficient use of soil nutrients, farmers and ranchers could also see enhanced economic and climate change resilience.



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By sequestering carbon, improving soil structure, and requiring fewer resources, perennial Baki™ bean has the potential to transform agriculture.
BRANDON SCHLAUTMAN
 Lead Scientist for Perennial Legumes



In our journey to breed sainfoin as a food crop, we've researched its notable nutritional qualities and safety for people to consume. Baki bean holds promise as a staple food crop since it's shown to be high in fiber, gluten-free, and has a high protein content similar to soy and fat levels akin to chickpeas. [New research released this year](#) in 2024 also highlights how Baki bean might satisfy daily adult nutrient requirements for protein and amino acids, illustrating its potential as a nutritious part of human diets. Researchers are also exploring whether people could use it as a plant-based protein source with a low-carbon footprint.

To scale perennial Baki bean, researchers are focusing on two key areas:

1. Verify Baki Bean is Safe for Humans to Eat: We're finalizing the FDA regulatory process to establish sainfoin seeds and seed co-products as Generally Regarded As Safe (GRAS) in the US. Achieving GRAS status will enable food manufacturers to produce foods and products verified as safe for human consumption.

2. Accelerate Baki Bean Genetic Improvement: Long-term breeding and management practices are critical to cultivating perennial Baki bean as a highly productive crop. In 2023, we launched breeding trials in Montana to develop new varieties and refine agronomic best practices for high-yielding Baki bean production in the region where it is already grown as a forage. Simultaneously, we are collaborating with research partners in Alabama and Turkey to sequence the sainfoin genome and develop genomic-assisted (non-GMO) breeding platforms for accelerated progress.

Your help is essential in co-creating a truly regenerative food future. By collaborating with us to unlock the full potential of sainfoin as a versatile and edible crop, you're catalyzing a transformative shift in agriculture toward sustainability and resilience.



With your support, we can advance perennial Baki bean toward its full potential as **the world's first scaleable perennial pulse food crop** for temperate regions.

[Donate today to realize this perennial future.](#)