



Rubber from Dandelions

Domestic natural rubber, grown hydroponically in the U.S.

THE OPPORTUNITY

Natural rubber is a strategic material the United States does not produce. It goes into tens of thousands of products, from tires and medical devices to military vehicles and aircraft, yet almost all of it is tapped from tropical trees in Southeast Asia. The U.S. imports about 1.5 million metric tons a year, and as demand grows across Asia, India, China and Brazil, global demand is forecast to exceed available supply. A supply disruption would carry real defense and economic consequences.

THE SOLUTION: RUBBER DANDELION

Taraxacum kok-saghyz (TKS), the rubber dandelion, stores high-quality natural rubber in its taproots, equivalent to rubber tapped from the Brazilian rubber tree. It was identified as an alternative rubber source in the 1930s and is well documented in scientific literature. Unlike tropical rubber trees, it thrives in temperate climates. Greenfield Hydroponics, GTG's sister company, grows genetically improved TKS indoors in a controlled environment, making commercial-scale domestic rubber production possible year-round.

THE MARKET AT A GLANCE

Indicator	Figure	What it means
Global natural rubber market	9.7M tons / ~\$20B a year	A large, established commodity market
Price since 2001	Up about 5×	Sustained pricing pressure on buyers
Forecast demand vs. supply	Demand +15% over supply	A structural shortage is forming
U.S. imports	~1.5M metric tons a year	Near-total dependence on foreign supply
Source of natural rubber	Asia 92% · Americas 3% · Rest 5%	Supply concentrated in one region
U.S. domestic production	Effectively zero	No commercial-scale domestic competitor today

RISKS OF IMPORT-DEPENDENT RUBBER

- **Reliance on foreign imports.** Nearly all U.S. natural rubber is imported, with no meaningful domestic production to fall back on.
- **Supplier concentration.** A single growing region creates environmental and political exposure.
- **Environmental vulnerability.** Rubber tree plantations are susceptible to blight, disease and drought.
- **Slow, labor-intensive harvesting.** Traditional latex tapping limits how quickly supply can scale.
- **Unsafe work environments.** Harvesting conditions in traditional growing regions are often unsafe and inconsistent.

THE MADE-IN-USA ADVANTAGE

National security and supply-chain resilience • Removes dependence on foreign products • Timing is right to scale U.S. production • No domestic commercial competition today

"There are over 40,000 things made with natural rubber, including 400 medical devices. Life as we know it wouldn't be possible without natural rubber."

Dr. Katrina Cornish, leading U.S. natural-rubber scientist

THE SCIENCE BEHIND THE CROP

- **University research partnership.** Ohio State University's OARDC research center in Wooster, Ohio is developing TKS as America's domestic source of natural rubber.
- **Cross-breeding for yield.** Selective breeding steadily improves rubber content, biomass and resilience with each generation.
- **Proprietary seed development.** High-performance seed lines create a defensible, scalable commercial foundation.

THE GREENFIELD HYDROPONICS CEA SYSTEM

A full turnkey Controlled Environment Agriculture (CEA) platform for indoor dandelion cultivation:

Computerized control system	High-density vertical towers	Water control system
Fertigation and nutrient delivery	LED illumination system	Setup and installation

Optional add-ons: water-pipe infrastructure, power supply, and GTG Atmospheric Water Generators for a clean, independent water source.

FROM PILOT PLANT TO COMMERCIAL SCALE

A **6,000 sq ft operational pilot plant** in Wooster, Ohio, with OSU OARDC as research and operations partner, is the launchpad for domestic production. Commercial processing plants are planned for **Lorain, Ohio**.

MORE THAN RUBBER

Cultivation and harvesting feed a biorefinery process that yields far more than latex. The same crop produces **natural rubber, animal feed, bioplastic, biogas and bioethanol**, spreading revenue across multiple product streams.

SCIENTIFIC LEADERSHIP

Dr. Katrina Cornish is internationally recognized as a principal authority on natural-rubber biosynthesis, production, properties and products. She leads a program in alternative rubber production and bio-emergent materials, including converting food-processing wastes into value-added products and biofuels. PhD, Plant Biology, and BSc, Biological Sciences, University of Birmingham.

WHY PARTNER

Greenfield Hydroponics and GTG combine a proven crop, university research, a working pilot plant and turnkey CEA systems to bring natural rubber production home.

Next step: Contact us to discuss partnership, investment or offtake opportunities in domestic natural rubber.

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