PENRA: Program of Excellence in Natural Rubber Alternatives

OARDC, Oregon State University, University of Guelph, University of Akron, Bridgestone, Cooper, Ford, Goodyear

The PENRA Pilot Plant produces **Taraxacum kok-saghyz Natural Rubber (**TNR) from roots grown at OARDC and other locations in Ohio and from research partners at Oregon State University and the University of Guelph.

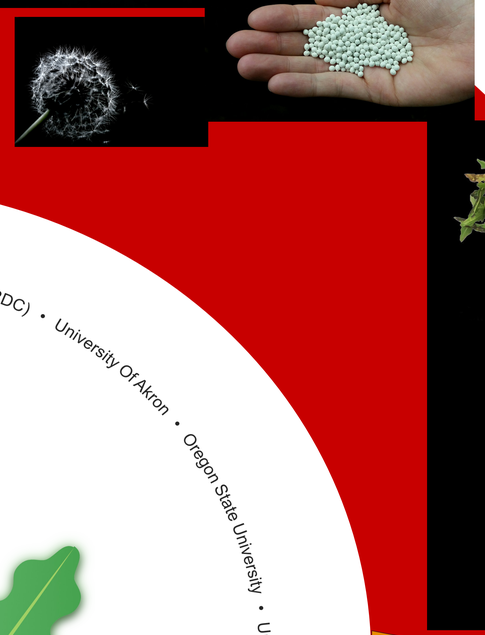
Rubber Processing methods are being improved to maximize the extraction of clean TNR rubber from TK roots. Our goal is to meet ASTM standard for tire rubber.

TK Roots are washed post-harvest to provide clean roots to the PENRA processing plant.

Cold Storage of fall harvested TK roots increases rubber content post-harvest.

Mechanized Root Harvest is currently accomplished using a gensing harvester that allows deep under-cutting to release roots from soil.

Mechanical Seeders are used to plant TK pelleted seed for large acreage production. Planting density is still being optimized for high rubber yield.



Taraxacum kok-saghyz (TK) Seed is produced and selected in greenhouses and fields to advance TK development and to optimize vigor, uniformity and rubber yield.

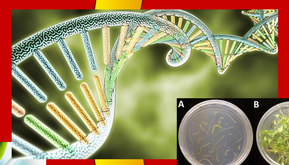
Pelleted Seed is used for ease of mechanized planting and to increase plant establishment in the field.

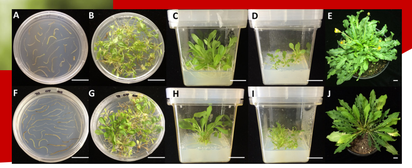
TK Plant development is transforming plant structure to improve havest efficiency.

Fertile TK is vital to reproduction and expansion of populations with crop characteristics suited to high rubber production.

Plant Breeding is key in developing plants that will adapt to diverse on-farm environments and maximize land use.

Weed Control by chemical and mechanical means is paramount to commercial crop production.





Modern Modified Plant Breeding Techniques provide efficient platforms for germplasm improvement including herbicide resistance, vigor and yield.

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