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The goal of this project has been to develop innovative production practices for the cultivation of a straight growing variety of black locust, providing profit for farmers, as well as environmental benefit. One stand of *var. Rectisima* was scheduled for clear cut, and we met our goal of securing the genetics. Several production techniques were greatly improved, and local outreach increased.

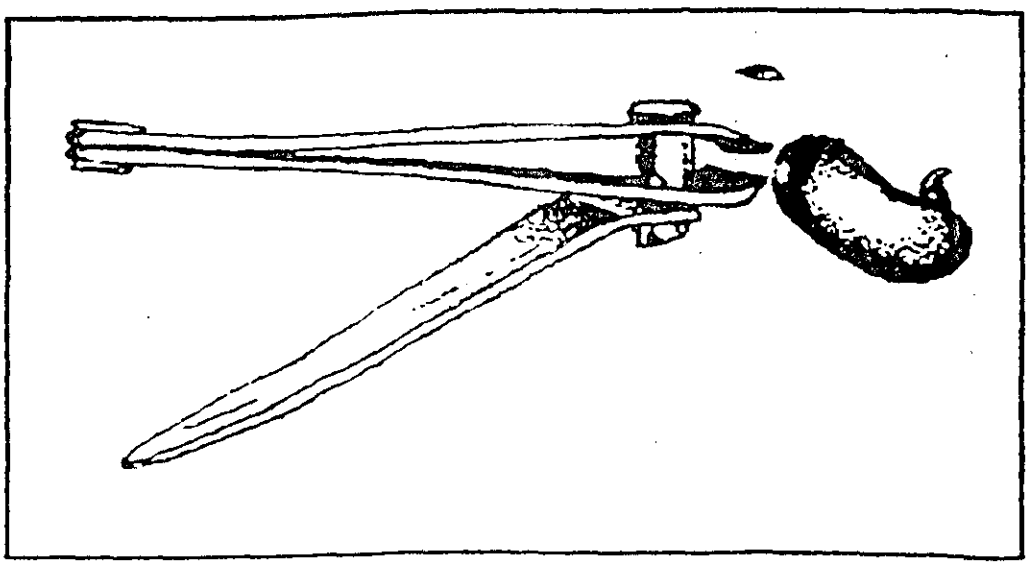
In addition to the original eight acre site, Dave Gell has secured management of other sites: two sites at Cornell's Arnot Forest, one of which has been harvested to build local bridges, and replanted; three acres in the Finger Lakes National Forest; three acres of privately owned locust (on an eighty acre farm).

On the original eight acre site owned by Dave Gell, and one half acre belonging to Andy Hillman, superior locust are approaching five years of age, and young roots can be harvested this fall to greatly multiply the stock. A nearby forty acre superior provenance is being managed to yield a continuous supply of rootstock for propagation. Our tools, procedures, and data forms are greatly advanced. Susan Gell has increased her successful "Windswept Farm" locust nursery output.

A local dairy farmer was quick to recognize genetic selection to increase yield and allowed us to propagate from his straight locust before they were cleared. Details of environmental conditions for this site were recorded in our pilot "standmap", indicating these trees enjoyed diversity and held their place in the canopy with other pioneer and intermediate species, which had naturally moved into this previously cleared area (no pits and mounds). Roots were harvested digging with metal tools at first, then with a dibble stick near the roots. During the clear cut logging operation, a skidder was able to

push over smaller trees, exposing the root ball and saving much time. During spring 2001, in another straight growing provenance, harvest was carefully conducted using an air-spade, running off a large 185 cubic foot/minute compressor, to expose roots.The trees were numbered and located on our improved stand map (again recording the diversity of species and size). Following our prototype root cutting procedure/contract, approximately 10% of each tree's roots were harvested by following one buttress flare. A map of each root, depth, size, and distance from tree were sketched.

To measure the productivity of common locust, a thirty year old stand, 100'x150', planted 10'x10' at Cornell's Arnot Forest was harvested yielding 2800 board feet of lumber for use in two bridges locally. The Enfield Youth Program, sponsored by Cornell Cooperative Extension, replanted with genetically superior locust, catalpa and chestnut between the stumps (so still 10'x10') and raised the pH of the soil with limestone.



At GreenStar Food Co-op, Enfield Eco-foresters produced locust lumber to directly install foyer accessories . Our pilot "*green-accounting*" was started, with the added "*green*" values of using local locust (not pressure treated).

A local patent attorney is helping design procedures for local people to benefit from progressive management of local phenotypes/genotypes.

A formal journal was started, recording all the germination, pot trials, root harvest, site soil tests, and taxonomy. Photography of procedure was improved, with a focus on pre-determining emergent sites on roots , before cutting to length.

We performed several germination tests and found the seed scarification method of nicked seeds, soaked overnight, the most successful with 100% germination. Treating with boiling water showed no significant difference between 10 seconds, 60 seconds, and pouring boiling water, 1" deep, over 100 seeds and left overnight. Boiling water treatments yielded approximately 70% germination each. An unexpected result was that although seeds imbibe water, germination is poor in hot weather.

Root excavation showed cut roots heal nicely and in ten years have ample re-growth. Approximately 50% fine sand added to commercial growing mix is recommended for root cuttings. We tried 11 mixes including rock phosphates. Sand is brought to the site to replace soil lost during digging.

The best emergence results were from a 7/8inch diameter,13 feet long root with no taper, or branching. (84% of the cuttings from this root were successful.) This root looked and acted more like a rhizome,than a root that was after water and nutrients. From our stand map and root map, we can determine that this unique root was growing toward an opening

in the canopy. Some roots were not successful at all and we will soon be able to compile photos, root maps, and measurements as the process progresses. A sampling of roots was sent to University of British Columbia and data is being exchanged.

Seedlings in open conditions did poorly, perhaps due to cold conditions at night, hot soil temperatures during the day, or too much UV-B. A 1/5th acre clearing in the woods seems ideal, and we are embarking on increased research in canopy measurement/phenotype.

The local demand for locust is skyrocketing, with a gradual increase in locust management and production, primarily through our workshops, plantings, propagation, and numerous extension activities.

Previously we priced locust lumber at $1 per board foot, equivalent to pressure-treated lumber. Now we are easily getting $1.50 per board foot and improving supply and efficiency. Our collection of site soils, taxonomy, and total evaluation of the stands, is improving our harvest for niche markets, and long-term progressive forestry.

This year, a heat wave drastically diminished the sprouting of a late batch of seeds, indicating April is better than June to start. Earlier, successful starts did poorly in open field, fine in partial shade. A heavy snow in March interfered with our use of the trailered 185cu.ft./min. compressor for the air spade. Two hundred feet of hose caused the compressor to overheat and shut down thermostatically..

Because arsenic is in the news, and pressure (arsenic) treated wood is less favored, locust management is being seen as economically viable locally. We have been demonstrating the most progressive techniques including local niche marketing,

value added by sawing on site, increasing future yield by taking nutrients back into the site at the time of harvest, improved production through better genotypes and environment, and assigning a "*green*" value to social benefits.

Our forthcoming relationship with the Alternatives Federal Credit Union new building project will clarify the economics of community forestry, including locust management, as we, together, produce a wooden product to embody the concepts.

Next year we will harvest more roots from more provenances and use manure bottom heated cold frames.

The established clones, now 5 years old, will be dug up, nice young roots cut for propagation, and replanted with six provenances represented. The straight -growing locust seldom sets seed, except trees stressed in this way (by moving and root pruning). A percent of these seeds may have hybrid vigor (the combined genetics of several superior clones from within 75 miles of each other), or other desirable qualities. Seed is by far the most economical production method.

Our website, www.blacklocust.org needs a heavy edit to clearly present progressive locust management on existing stands and farm replanting.

Black Locust Initiative will continue to improve each foundation point: accounting, soils, our genetic collection, propagation technique, lumber harvest, sawing and utilization procedures and outreach.

The Enfield Eco-foresters, a Cornell Cooperative Extension, Rural Youth Services program managed by Shannon McSurely, conducted every germane activity at least once. At the computer, youth display a digital photo of themselves and remember the concepts and vocabulary to write clever captions

while our staff evaluates and improves the curriculum. Other workshops include Learning Web, Longview Aided Care, Cornell Natural Resource students, Elmira College, home-schoolers, and Ulysses Youth Council.

Black Locust Initiative presented to Cornell's Center for the Environment :"*Community Forestry*" and "*Locust Management*"; and to the Cornell "Greens": "*Proactively Improving National Policy*".Our next major outreach is October 7th at The Finger Lakes National Forest, where we are managing a 3-acre pilot project to connect the community with its resources.

LOGS FROM BURDETTE SITE.

(PREVIOUS MECHANICAL DAMAGE LEFT ENTRY FOR HEART-ROT FUNGUS)

TRACTOR WAS USED TO OBTAIN ROOT-CUTTINGS FROM BLOWDOWNS IN SHIRMAST LOCUST STAND.

select

WHEN GROWN FROM SEED, 80% GREW STRAIGHT.

One year old clone