THE PROJECT OF RAMIE CULTIVATION

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1、Project resource
2、Production and Distribution
3、Propagation and Cultivation
4、Our research activities
1. PROJECT RESOURCE

Project Funding: Ministry of Agriculture, China

Project Network: Bast Leaf Fiber Crops, Chinese Agricultural Research System (BLFC-CARS)

Annual Funding: 700,000 ¥

Project Duration: 2010-2015
Main researches

(1) Ramie cultivation for high yield and high efficiency

(2) Techniques of ramie cultivation in slopeland

(3) The mechanism of anti-drought in ramie

(4) The obstacle of continuous cropping in ramie
Stress in Ramie

Crop Environment

Abiotic stress

Biotic stress

Mold in the rhizosphere

Root nematode

Disease obstacle

Low nutrition in margin land

Nutrition efficiency for ramie

Abiotic stress

Biotic stress

Low nutrition in margin land

Nutrition efficiency for ramie

Disease obstacle
2、PRODUCTION AND DISTRIBUTION

(1) Production
Ramie cultivation in China have a long history

More than 4,700 years from now. Ramie cloth unearthed from the Mawangdui, Changsha, according to research of the Western Han Dynasty Relics.

Mummy restored image
Horadrump ancient unearthed
Four pieces of ramie fabric coffin found well preserved. The unearthed ramie fabrics were woven fabric, warp and weft density of coarse linen to 17.9 / cm and 18.1 cm.
Ramie plantation is mainly distributed in North latitude 19 ° ~ 39 °; The plantation is generally divided into the Yangtze River area (including Hunan, Sichuan, Chongqing, Hubei, Jiangxi, Anhui province), Southern China ramie area (including Guangxi, Fujian, Guangdong, Yunnan and the Yellow River region (including Shanxi, Henan and the southern part of Shandong province).
3. PROPAGATION AND CULTIVATION

(1) RAMIE ROOT, STEM, LEAF AND FLOWER

Ramie flower

Ramie stem and leaves
Collection in Burger Zoo for Nettle
Opposite leaves, Oval-shaped
## Characteristics of range in Ramie varieties

<table>
<thead>
<tr>
<th>Yielding traits</th>
<th>ranges</th>
<th>Mean value</th>
<th>Coefficient of variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant height (cm)</td>
<td>40.0~210.0</td>
<td>138.07</td>
<td>16.72</td>
</tr>
<tr>
<td>Stem diameter (cm)</td>
<td>0.40~1.40</td>
<td>0.825</td>
<td>14.32</td>
</tr>
<tr>
<td>Bark thickness (mm)</td>
<td>0.30~1.16</td>
<td>0.663</td>
<td>20.36</td>
</tr>
<tr>
<td>Fiber ratio of fresh bark (%)</td>
<td>5.0~16.1</td>
<td>10.25</td>
<td>20.78</td>
</tr>
<tr>
<td>Raw Fiber (kg/hm²)</td>
<td>225~3150</td>
<td>1278</td>
<td>37.98</td>
</tr>
</tbody>
</table>
RAMIE UNDERPART SYSTEM
(INCLUDING STEM AND ROOT)

- Dragon-shape root
- Bambo pole-shape root
- Horse running root
- Radish-shape root
- Fibrous root
(2) Ramie growth and nutrition

Ramie growth:

Perennial Crop: 10–30 years, up to 100 years

Baby age: 1–2 years

Strong age: 3–7 years or more

Elder age: More than 8 years
Fertilizer be applied with mostly nitrogen in this stage. The optimum temperature of 23-29 ℃, The growth will be influenced when above 32 ℃.
Vigorous growth period:
NPK Combined; Optimum temperature of 24-27 °C
Phosphorus and potassium ratio increase, promote development of fiber; fiber maturity suitable temperature 17-32 °C.
Three Cuttings annually (Yantze river area):

First cutting: growth of 85–90 days
  (Mar.– beginning of Jun.)

Second cutting: 50–60 days
  (Late of Jun. to beginning of Aug.)

Third cutting: 75–85 days
  (Beginning of Aug. to late of Oct.)
3 Propagation and Cultivation

(1) Seed propagation

Sowing date:
Late February or Beginning March in Yangtze river areas.
Soil Preparation
Seed Propagation
Seed sowing demonstration
Seed Sowing demonstration
(2) PROPAGATION BY CUTTING

Suitable duration:
April-June and Aug. –Sept.

Materials:
Shoot cuttings
Yung shoot -cutting
Spray anti-mold substance
Water spray
Cover preparation
Cover for keeping humidity
Living Seedling

New ramie plantation
4 OUR RESEARCH ACTIVITIES

(1) Creation of high-yield plantation in Ramie

Land preparation: Sunny is not easy to waterlogging, soil layers deep
Rectangular, the long side perpendicular to the wind
Deep plowing 25-35cm above.
A, Demonstration of high yield variety

B, Experimental on the fertilizer and plant density
Second cutting Crop growing
Ramie Growing in slope land
(2) Effects of Rhizosphere environment on ramie yield and quality research

Difference of microbes between rhizosphere and non-rhizosphere soil
4BM-260 Ramie decorticator
Larger scale ramie decorticator
Thank you for your attention