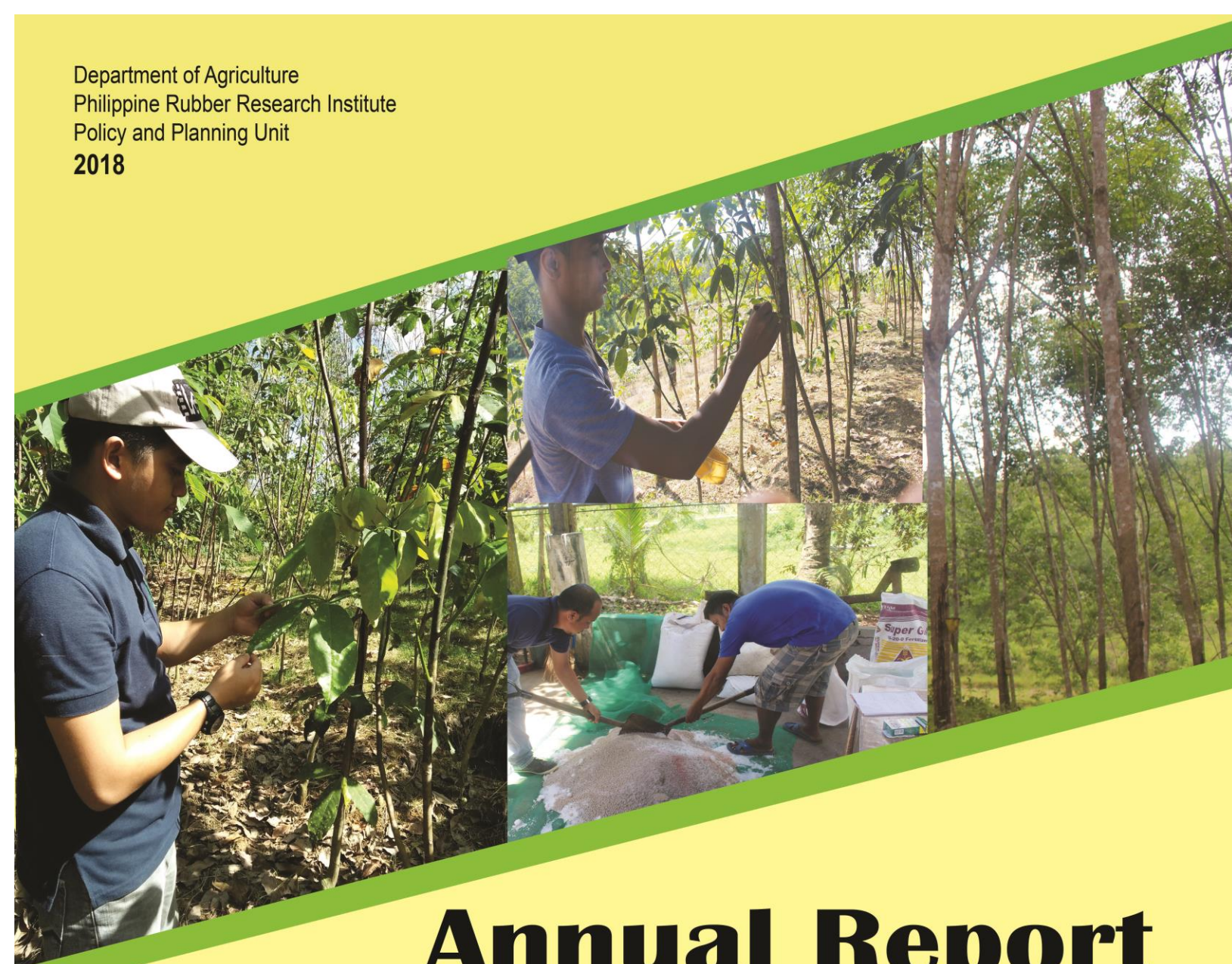


Department of Agriculture
Philippine Rubber Research Institute
Policy and Planning Unit
2018



Annual Report 2018



Department of Agriculture
Philippine Rubber Research Institute
ZAMPIARC Compound, Sanito, Ipil, ZSP



Philippine Rubber Research Institute - Annual Report 2018

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Published by:

Department of Agriculture
Philippine Rubber Research Institute
ZAMPIARC Compound, Sanito, Ipil, ZSP
www.da.prri.gov.ph

Printed in the Philippines

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Philippine Rubber Research Institute

2018 ANNUAL REPORT

Mandate

To initiate and administer research and development programs to improve productivity and quality of rubber in the country.

Vision

A leading institution for Research, Development and Extension for a globally competitive, technology based, economically and environmentally sustainable Philippine rubber industry for the improvement of the quality of life of rubber stakeholders.

Mission

To initiate and administer research, development and extension programs to improve quality and increase productivity of rubber especially for the benefit of the smallholder rubber producer.

Message from the Executive Director

The year 2018 brought about a positive havoc of change to our beloved organization, the Philippine Rubber Research Institute (PRRI). Through the difficult situations and adversities we've encountered, we managed to surpass them all by firmly standing to our feet living up to our agency's core values. Our mission, vision and mandates definitely helped us navigate the labyrinth of options to our possible end-destinations. By constant perseverance, we shall be able to scale along the jagged mountain of challenges lying ahead of us.

Despite the lack of a systematic organizational structure, we showed unity and resilience in the midst of conflicting ideas and opinions. Optimistically, we become more impenetrable from all bullets of division and the spirit of mediocrity being prevalent in most government institutions.

On October 2018, PRRI's mere existence has drastically changed, enhanced for ultimate optimization to become a fully functional government agency. The hiring of 15 Contractual employees served as a milestone to our organization. Now, with these organic personnel effectively executing their tasks, we shall surely see better days ahead of us. With consistent effort to wilfully implement good governance and unbiased leadership in our workplace, PRRI shall someday be at par with the leading, top-notch rubber institutes worldwide.

Let us remind ourselves that failure is inevitable if we weren't able to respond with a concerted mind and effort to forsake all negativities and unite ourselves for the good and betterment of our beloved organization. Only, let us continue to work persistently the job entrusted to us by the upper echelons in the government. With all enthusiasm and self-determination, we aim to provide the best "elastomeric service" possible to all rubber processors, consumers and stakeholders.

PRRI has been dubbed by many as insignificant part of the Department of Agriculture but through the span of three arduous years, we have proven to our naysayers that our rock-solid commitment and our unwavering dedication to our profession catapulted us to dauntlessly surmount all challenging situations. With unparalleled amount of hardwork and by the help of the sovereign grace and guidance of our Almighty God, I believe that we shall be able to conquer new heights to aid the rapid growth and technological advancements of the Philippine rubber industry. To kick-start 2019, all of us shall gallantly say, "Lambo pa Pilipinas, Lambo pa Philippine Rubber."



DENNIS H. PALABRICA, DR Dev
Acting Executive Director



CY 2018 MAJOR FINAL OUTPUT

**MFO 2. Technical Support Services
13 Research and Development Activities Conducted:
9 Groups Benefitted
230 Individuals Benefitted**

CY 2018 FINANCIAL PERFORMANCE (AS OF DECEMBER 2018)

| MFO/PROGRAMS/ PROJECTS | Approved Budget (GAA) ('000) | Obligation ('000) | Disbursement ('000) | % Performance |
|---|------------------------------|-------------------|---------------------|---------------|
| PROGRAMS | | | | |
| I. General Admin & Support Services (GASS) | 20,069 | 15,388 | | |
| II. Operations | | | | |
| Various Research and Development Activities | 12,000 | 9,817 | | |
| TOTAL CURRENT APPROPRIATIONS | 32,069 | 25,205 | | |

RESEARCH AND DEVELOPMENT

Conducted twelve (12) research and development activities:

1. Phenotypic Diversity of Small Scale Hevea Germplasm Grown in PRRI Nursery
Proper identification of rubber clones plays a vital role in crop management system and research although clones do not exhibit highly distinct variations. Most of them possess certain minor but more or less stable morphological features which can be used further for identification. Collection of germplasm resources is significant component of any conservation program and is likely costly and logistically difficult, It is highly important to characterize and evaluate cultivars to look for novel gene sources that can be potential and useful for future breeding study, This study is conducted to assess the genetic diversity of the collected hevea germplasm under PRRI nursery condition to facilitate efficient selection if parent materials for hybridization and the identification of highly heterotic groups.



2. Efficacy of Indigenous Botanical Fungicides Against White Root Rot Disease of Rubber

White root rot disease is one of the most serious disease-affecting root system of rubber, causing slow death of rubber in all growth stages from seedling to mature trees. The present method of application of collar protectant after exposing the disease root system will be replaced by soil drenching techniques when treating the significant root disease due to increasing labour costs in next millennium. Thus, this study is conducted in attempt to minimize the use of chemical indigenous botanical fungicides available in the country side.



3. IRRDB/Multilateral Clone Exchange Program

The multilateral clone exchange program was organized by the International Rubber Research Development Board (IRRDB) to preserve potential clones of good performance. Popular clones evolved in different countries are being introduced to member countries and will be evaluated under local agro-climatic conditions. Fifteen countries under IRRDB membership are participating. In total there are forty-nine clones to be exchanged by 12 countries. The Philippines contributed by giving its lone

The following are clones that are received and their country of origin:

| COUNTRY OF ORIGIN | CLONES |
|--------------------------------|---|
| 1. Thailand | RRIT 3904 RRIT 3604 RRIT 251 RRIT 408 RRIT 226 |
| 2. Myanmar | ARCPC-2 ARCPC-6 |
| 3. India | RRII 414 RRII 429 RRII 430 RRII 422 RRII 417 |
| 4. Indonesia | IRR 5 IRR 104 IRR 119 |
| 5. Cote d' Ivoire, West Africa | IRCA 825 IRCA 331 IRCA 317 IRCA 230 IRCA 47 |
| 6. Ghana, France | FDR 5788 FDR 5665 PMB 1 CDC 312 |
| 7. China | REYAN 7-20-59 REYAN 7-33-97 HONGSHAN 67-15 ZHANSHI 8-67-3 BAOTING 936 |



4. Assessment on the Growth and Yield Performance of Rubber as Intercropped with Other Agricultural Crops



This study is conducted to assess the effect of intercropping to the growth and yield performance of rubber to determine its sustainability over a long period of time. Intercropping is a multiple cropping practice where it involves planting of two or more crops in a parcel of land. It is one way of maximizing the use of the resources on the particular land so that it can give a great yield and income to the farmer.

Since rubber has a long gestation period where harvesting is done on the sixth year after planting, utilizing of rubber-based farming system or intercropping was done.

5. Assessment on the Effectiveness of Rice Hull Gasifier Powered Creping Mill and Electric Powered Creping Mill

Electric powered creping mill which is used nowadays uses electricity to produce pale crepes therefore milling fee is present and when there will be blackouts will not function until the electricity will return.

Rice hull can be converted into valuable fuel that will be used as gasifier. Gasifiers are used to convert biomass into combustible gas, a secondary form of renewable energy.



This study will compare the performance of Electric Creping Mill and Rice Hull Gasifier Powered Creping Mill.

6. Documentation and Assessment of Effluent Treatments in Natural Rubber Processing Plants in Zamboanga Peninsula

Discharge of untreated rubber effluent to waterways resulted in water pollution that affects human's health and the environment. Effluent includes wash water, small amounts of uncoagulated latex and serum with small quantities of protein, carbohydrates, lipids, carotenoid, salts and high concentration of nitrogen.

Without proper treatment, the discharge of wastewater from the rubber processing industry to the environment may cause serious and prolonged consequences, that's why suitable technologies must be used for treating the wastewater.

This study will be conducted to assess and document the waste water from different processing plants before it will discharge to the ponds and river.



7. Management of Termite Infestation in Rubber using Phytoinsecticides in Zamboanga Peninsula



Termites are highly devastating and polyphagous insect pest, which causes damage to buildings, furnitures, plants and agricultural crops. Termite infestation in Region IX is in moderate degree with severity incidence rate of 17% in Zamboanga Peninsula.

Since plants are rich sources of bioactive anti-insect and disease compounds, botanical plants or botanical extracts have been subjected to various researches in an effort to develop alternatives to conventional insecticides and pesticides. Also, it is cheap, readily available, eco-friendly and effective at managing the population of insect. Thus, this study is conducted to determine the effective management of termites under laboratory and field conditions using different botanical extract

8. Rubber Database Establishment and Management

Rubber is one of the potential export commodities that significantly contributed to the economy of the country where 240,000 hectares of land area has been planted all over the country. Thus, necessary support from the Government in terms of provision of logistics and technical assistance to strengthen and develop the industry is important.



9. Profiling of Rubber Stakeholders in the Philippines



This study was conducted to gather data on upstream and downstream sector. The data collected will be used in determining the problems in rubber industry especially the smallholder farmers. Thus, research gaps and intervention will be formulated so that Philippine rubber industry will be globally competitive.

10. Effects of Conservation Pits on the Growth and Yield Performance Rubber Under Naga, Zamboanga Sibugay Condition



Conservation pits are constructed pits or trenches of different sizes and shapes. On slope lands, silt pits are constructed length and depth with the purpose of not only soil, water and nutrient harvesting and conservation, but also reduction in runoff and soil erosion through sorting the length of slope.

This study is conducted to encourage the rubber farmers in establishing conservation pits since it can benefit on soil moisture dynamics and crops response have not been quantified.

11. Growth and Yield of Rubber Trees as Applied with Different Fertilization Rates

Fertilization is one of the most important factors that affect growth and yield of rubber. Production is challenged in the face of poor soil fertility status due to continuous loss of plant nutrient elements by crop removal and a highly acidic soil environment with poor plant-available nutrient status.

Soil organic matter will increase by applying organic fertilizer, it helps improve the structure of the soil including the circulation of air, hold moisture, improve cation exchange capacity and improve drainage. It provides also nutrients which sustains beneficial microorganisms that help release nutrients that reduce acidity in the soil.

Thus, balance fertilizer recommendation during mature period of rubber production is being considered as important management option for optimal growth and yield of rubber.

Hence, the research in the growth and yield performance of rubber trees applied with different fertilization rates will be conducted.



12. Growth Performance of Rubber Latex Timber Clones Under Selected Mining Areas in Zamboanga Peninsula

Major impact of mining is the physical damage of the landscape and the production of large volume of harmful wastes. With the destruction of forestal area due to unceasing exploitation of natural minerals prime agricultural lands will be sacrificed to mining.



Rubber latex timber clones can be planted to replace destructed forest trees for reforestation as it can also create employment for the unemployed rubber tappers. With the low production of natural rubber latex, mining areas can be utilized for rubber plantation expansion so that our country can also contribute to the increasing demand of natural rubber in the world market.



1 RESEARCH FACILITY MAINTAINED

The PRRI conducted series of rubber raw product test in order to support the rubber research and development activities. Also, 93 rubber samples were tested from 6 rubber processing plants.



PRODUCTION SUPPORT SERVICES

Production and Distribution of Quality Planting Materials

To provide inadequate supply of quality planting material production of 5,566 quality planting materials (NSIC recommended clones) and distributed 3,740 quality planting materials (NSIC recommended clones) in support to the establishment of budwood garden to 1 State College and University; and 3 farmer-group beneficiary.



| Clones | Produce | Distributed | No. of Groups |
|--------------|--------------|--------------|---------------|
| RRIM 600 | 116 | | |
| USM 1 | 2,000 | 1,450 | 4 |
| PB 260 | 2,200 | 1,275 | 4** |
| PB 330 | 1,250 | 965 | 4** |
| TOTAL | 5,566 | 3,690 | 4 |

** Same group

EXTENSION SUPPORT, EDUCATION, & TRAINING SERVICES

EXTENSION SUPPORT, EDUCATION, & TRAINING SERVICES

Training and training related events conducted:
2 Workshop on Rubber Marketability: A Quality Advocacy were conducted in one (1) batch Zamboanga del Norte and one (1) batch at Zamboanga del Sur.

2 Seminar-Workshop on Rubber Production Technologies were conducted in one (1) batch at Basilan and one (1) batch at Negros Oriental.

1 Plant Protection Seminar-Workshop on Disease Management of Rubber was conducted



Other Activities:

| Clone | Number of Seedlings | Clone | Number of Seedlings |
|-----------|---------------------|--------------|---------------------|
| RRIM 2025 | 371 | RRIM 901 | 7 |
| RRIM 2023 | 452 | GT 1 | 5 |
| RRIM 2001 | 48 | RRIM 107 | 7 |
| RRIM 2002 | 32 | IRCA 47 | 150 |
| RRIM 2026 | 6 | IRCA 317 | 91 |
| RRIM 2027 | 146 | IRCA 825 | 180 |
| RRIM 2024 | 13 | IRCA 331 | 268 |
| RRIM 2009 | 6 | IRCA 230 | 91 |
| RRIM 2002 | 15 | RRIT 251 | 73 |
| PB 350 | 350 | RRIT 408 | 144 |
| PB 235 | 32 | RRIT 226 | 29 |
| RRIM 921 | 210 | RRIT 3904 | 169 |
| RRIM 908 | 102 | RRIT 251 | 109 |
| RRIM 911 | 13 | ARCPC 6 | 95 |
| PB 359 | 5 | ARCPC 2 | 68 |
| PB 230 | 8 | RRII 422 | 84 |
| RRIM 701 | 10 | RRII 414 | 90 |
| RRIM 628 | 9 | RRII 429 | 42 |
| RRIM 705 | 9 | RRII 417 | 17 |
| GT 161 | 6 | RRII 430 | 74 |
| RRIM 261 | 11 | | |
| | | TOTAL | 3,647 |



:Propagation of Rubber Budded Seedlings

Various clones are propagated at PRRI Nursery, Tambanan, Naga, Zamboanga Sibugay. This will be used for the conduct of the future studies of PRRI Research Staff. The following are the available rubber budded seedlings: