IPNI REGIONAL REVIEW

Northern Latin America Program

Regional Situation

This program oversees a territory ranging from Peru to Costa Rica, including the Caribbean islands. The agricultural diversity of this region brings many challenges for communicating the techniques for the best use of nutrients.

There are significant opportunities for increasing the planted area and for higher yields of planted crops. For example, Columbia is a promising market for agricultural development as the recent peace agreement and infrastructure investments will support several million hectares of new crop projects. Cuba also presents opportunities for fertilizer growth, as nutrient consumption fell from 1.5 Mt/year of NPK in the 1980's to only 300,000 t/year now.

TACTICAL PLAN highlights & priorities

4R Stewardship

A video on *4R Nutrient Stewardship for Oil Palm* was produced in Spanish with local partners. Outreach through webinars continues to extend the message of 4R Nutrient Stewardship.

Nutrient Education

We have distributed over 2,200 *4R Plant Nutrition Manuals* in Spanish during scientific conferences and training events. These events and seminars are most effective in partnership with local companies and scientific organizations.

Improved Fertilizer Recommendations

We maintain plant nutrition studies for oil palm in several countries and have initiated new studies in cocoa nutrition in Colombia and Ecuador.

Closing Yield Gaps

We have studied the nutrient demand of the oil palm hybrids that are only grown in Latin America. We are now preparing publications on the best use of nutrients for these genetically unique trees (to accompany the completed video).

We are starting activities in Colombia to improve nutrient use in cocoa plantation for both traditional and new high-yielding cultivars. Preliminary information suggests that improved plant nutrition and crop management can increase cocoa yields by three to ten times.

Enhancing Sustainability

We have measured the effect of balanced nutrient management in yields and livelihood of coffee small holders of northern Peru. This has documented the social benefits of implementing 4R Nutrient Stewardship.

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examples of IMPLEMENTING THE TACTICAL GOALS

Significant Partnerships:

We have excellent collaboration with many universities, research centers, grower's associations and government agencies across most countries. Two significant examples:

- **ANDI,** the National Business Association of Columbia, has partnered with our IPNI program to implement the 4R language in their materials used for farmer training. They reached about 1000 farmers in 2016 with 4R materials prepared in cooperation with our office.
- **ANCUPA – FEDEPALMA,** the national guilds of oil palm growers of Ecuador and Colombia has benefited from IPNI research, publications, videos, and training for many years. Since oil palm production is a major consumer of nutrients, we continue to investigate the proper use of fertilizer on new oil palm varieties.

Educational Activities:

With support of IPNI Member Companies and local fertilizer dealers, we have organized training events in Guatemala, Honduras, Costa Rica, Panama, Colombia, Ecuador, and Peru. We also participate in and support many national and region-level scientific events. In all these activities, 4R Nutrient Stewardship is emphasized, with focus on oil palm, banana, rice, maize, and cocoa.

Changes in Nutrient Practices:

A common pitfall of the traditional practices of growers has been to rely on N or NK fertilizers alone, without regard for balanced plant nutrition. We have repeatedly demonstrated the need for other nutrients [e.g. banana (zinc, sulfur), oil palm (magnesium, boron, zinc), micronutrients for many crops] that are essential to achieve maximum productivity. We are expanding these multi-nutrient studies for high-yielding varieties of cocoa, a crop managed mostly by small holders.

Social Responsibility and Agriculture Sustainability:

Our program has participated in poverty-alleviation projects for maize in Guatemala and coffee in northern Peru, which are focused on the clear benefits of proper agronomy and crop nutrition on achieving high yields, improving soil fertility, and boosting income for small holders.

Specifically, in Peru we have measured the benefits of NPK blends for improving farm revenues for small holders.

In marginal and degraded areas of coffee production, the yield increase from added fertilizer use can be six times more compared with no fertilizer use, and about three times greater than when organic (guano) manures are used. Increased yields and quality of coffee translate into higher profits and better livelihood for growers.

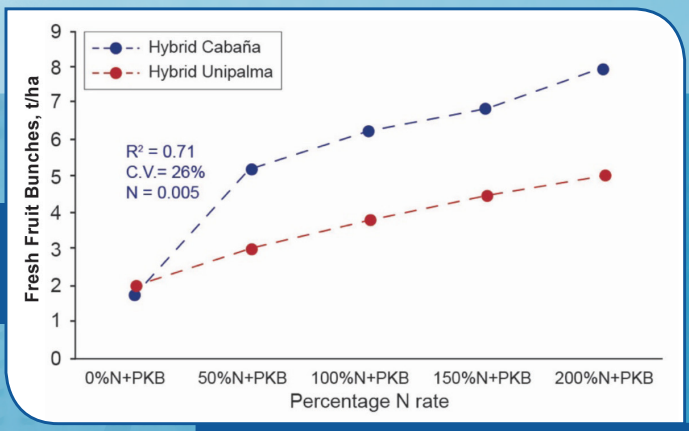
EXAMPLES OF IPNI IMPACT

Replacing Oil Palm Trees with Hybrids

Oil palm is a crop in expansion that is cropped in all countries of the Northern Latin America region. Oil palm is susceptible to many diseases and especially relevant is Bud Rot disease (Pudrición del Cogollo – PC), which has killed thousands of hectares of palm trees across Latin America. In recent years, local growers have started to replace the disease-prone trees that originated in South Asia with new hybrid trees that are resistant to bud rot.

The IPNI program, with support of member companies, local growers, and research agencies from Ecuador and Colombia has carried out studies looking at the response of the new hybrids to different nutrients. We have found that these new genetic materials are more efficient and require less N than traditional varieties of oil palm, but these nutrient responses differ widely among the genetically diverse varieties.

Due to their high yields, these new oil palm trees still have an excellent yield response to additions of nitrogen, potassium, magnesium and micronutrients.



The effects of N application rate on the yield of two oil palm hybrids.

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Ref. # 17019