TRANSFER AND ADOPTION OF FERTILIZER BEST MANAGEMENT PRACTICES: FROM BASICS TO INNOVATIVE APPROACHES

MARCH 16-17, 2015
IFA – FAI NATIONAL SEMINAR
NEW DELHI, INDIA

ATLAS FERTILIZER CORPORATION
THE CROP-SPECIFIC SITE SPECIFIC FERTILIZER COMPANY

ATLAS FERTILIZER CORPORATION
• Oldest existing NPK-NP-NK fertilizer manufacturing and distribution company in the Philippines

• Controls minimum 42% of the DOMESTIC NPK-NP-NK market

• Member of the SOJITZ Fertilizer Group, Tokyo, Japan

• Sister companies are the Thai Central Chemical Corporation (TCCC) of Thailand and Japan Vietnam Fertilizer Co. (JVF) of Vietnam

• Will be celebrating 58 years of CULTIVATING LIFE & ENHANCING THE SOIL by October 10, 2015
### MAJOR PHILIPPINE CROPS

<table>
<thead>
<tr>
<th>CROPS</th>
<th>AREA (hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>4.04 M</td>
</tr>
<tr>
<td>Corn</td>
<td>2.66 M</td>
</tr>
<tr>
<td>Coconut</td>
<td>3.0 M</td>
</tr>
<tr>
<td>Banana</td>
<td>0.40 M</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>0.39 M</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.04 M</td>
</tr>
</tbody>
</table>

### ATLAS EXPERIENCE: OUTREACH TO FARMERS 2004 – PRESENT

1. ORGANIZATION

2. TECHNICAL SUPPORT

3. HOLISTIC “CHAMPION” APPROACH
FERTILIZER BEST MANAGEMENT PRACTICES

ATLAS EXPERIENCE

ORGANIZATION

1. Mindset
   • Commitment to the vision, providing fertilization technologies that will assure consistency of profitability in agribusiness
   • Empowering the farmer/agripreneurs
   • Innovativeness so that agribusiness is profitable
   • Corporate social responsibility to educate agripreneurs is a financial asset
   • Not just higher fertilizer sales

2. Technically Competent
   • Agronomists must be appropriately trained in the correct and updated concepts of fertilizer application
     ex.: Transplanted hybrid rice (Wet Season)
     - Basal (0-14 DAT): Apply 30%N, 100%P2O5, 50%K2O
     - Tillering (20-25 DAT): Apply 35%N
     - Before PI (30-35 DAT): Apply 35%N, 50%K2O
     - Flowering (55-60 DAT): Apply additional 10%N (optional during dry season only)

   Note: Basal N should not be >30 kg
   If K2O requirement is > 40 kg, splitting is recommended
3. Field-Based Approach

- Agronomists make use of various field-based “Gimmicks” to lure agripreneurs to attend information dissemination coupled with account servicing (one-on-one sessions):
  - Lecture sessions
  - Field trials
  - Demonstration farms
  - Harvest festivals
  - Free snacks/lunches with raffles
  - Coffee sessions
  - Comics
  - Radio/Television spots

Extension Work – Farmers’ Classes
4. Networking with Synergistic Companies/Entities/COMPETITORS
   • Seed Producers/Chemicals Distributors/Feeds/Local Government Agriculturists/Integrated Agricultural Research Centers/Government Institutions
   • To reduce information dissemination costs, tie-ups (formal/informal) are made with Chemicals/Seed & Producers, etc, in the conduct of field activities

   • Complementation instead of competition

ATLAS EXPERIENCE
ORGANIZATION
5. PATIENCE

-- 3 YEARS TO TEACH A RICE & CORN FARMER

-- GROWTH IS GEOMETRIC

TECHNICAL SUPPORT

- From trial and error approach

  ✓ To scientific approach
Coordination and consultation with scientists from IRRI

ATLAS FERTILIZER CORPORATION
THE CROP-SPECIFIC SITE SPECIFIC FERTILIZER COMPANY

Different Crops  Different Soils

Different Nutrient Requirement  Different Soil Types & Composition

SITE SPECIFIC NUTRIENT MANAGEMENT
DEVELOPMENT OF FERTILIZATION TECHNOLOGY

Dry season & Wet season omission plot technique → SSNM Rates

Dry season & Wet season verification trials → Verified SSNM Rates

Creation of Package of Technologies: In cooperation with Marketing

Dissemination of Technology

Farm Demos: Side by Side with Farmers’ Practice

- Production of Flyers
- Farmers’ Meeting
- Distributors'/Dealers’ Meeting
- Technical Updates

IRRI with partners developed *Nutrient Manager for Rice* to provide rice farmers with ‘precise’ fertilizer management

- Used scientific principles of site-specific nutrient management (SSNM)
- Provided a customized recommendation for a farmer’s field through LAPTOP COMPUTERS & IVR MOBILE PHONES
- Aimed to increase income of farmer by US$100 per hectare per crop
Our Approach: Use ICT (Information and Communications Technology) to deploy improved nutrient and crop management practices to farmers

- Use results of research to develop decision tools providing field- and farmer-specific farming advice
- Use advances in ICT to deploy farming advice through computers and mobile phones.

The Opportunity: Upgrade the existing Nutrient Manager to Rice Crop Manager

Nutrient Manager was upgraded to Crop Manager.
1. **Observe**: Obtain field-level information from farmer
   - Smartphone
   - Personal computer

2. **Calculate**: Determine management practices
   - **Crop Manager model**
     - Nutrient management calculator
     - Decision making calculator for crop management
   - Cloud based server
     - Databases and spatial information
     - Variety traits
     - Location-specific soil information
     - Variety- and management-adjusted yield targets

3. **Respond**: Provide ‘actionable’ advice
   - Printed guidelines
   - Image on Smartphone
   - SMS

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**Operation of Crop Manager**

**Development of customized version of Crop Manager for Atlas**
Output pages for Atlas Rice Fertilizer Guide

Atlas Rice Fertilizer Guide

Crop Manager
(IRRI IP)

Atlas Fertilizer Guide

CM interface
Home page
Questions to obtain farming & field info
Farmer info
CM user info

CM model
CM databases
CM calculator

Atlas product database

Identical NPK rates

AFG interface
Home page
AFG user info & tools

Output
AFG actionable advice for farmer
Report on AFG use

Database on AFG use and users

Identical NPK rates
FERTILIZER BEST MANAGEMENT PRACTICES
ATLAS EXPERIENCE

HOLISTIC “CHAMPION” APPROACH

SOCIAL

AGRIPRENEURS

FINANCIAL/ECONOMIC

POLITICAL

SOCIAL:

- Kinship
- Financiers
- Progressive farmers/cooperators
- Big landowners
- Cooperatives/irrigation organizations
- Planters associations
FERTILIZER BEST MANAGEMENT PRACTICES

ATLAS EXPERIENCE

HOLISTIC “CHAMPION” APPROACH

FINANCIAL/ECONOMIC:

- Local financiers
- Distribution network (distributors/dealers)
- Grains traders
- Financial institutions (Rural Banks/ governmental institutions)

ATLAS EXPERIENCE

HOLISTIC “CHAMPION” APPROACH

POLITICAL:

- Government agricultural programs:
  - National (i.e. hybrid rice/ bio-fuels)
  - Local (i.e. food sufficiency)
- Funding Programs
  - Credit facilities
WE CONSIDERED OUR APPROACH AS AN ASSET RATHER AS AN EXPENSE AS IT PROMOTES AWARENESS FOR A PROFITABLE AGRICULTURE.