Insect Resistance Management: Sharing the Experience on Diamondback Moth in the Philippines

15,000 ha 85% in highland areas

117,000 MT per year

25-30% production Cost (pesticide)

CABBAGE GROWING AREAS

CABBAGE PRODUCTION

1920's - Crop introduction

1960's - Production boomed

1970's - Area Expansion

1980's - Product quality

1990's - Product quality

2000 - Product quality

CURRENT VARIETIES

Lucky Ball, Rare Ball,

Scorpio, Gladiator, Mt. King

THE FILIPINO DBM

1927 – First record

1965 – First recorded outbreak

1967 – First trial on insecticides

1970 – First record on resistance

1974 – Multiple Resistance recorded

1990 – 2nd outbreak (Cyanide Scare)

THE FILIPINO DBM

DEGREE OF DAMAGE
1950's - Slight damage, Class A
1960's - Severe, no marketable
1970's - Severe, no marketable
1990's - Severe, no marketable

RESISTANCE TO INSECTICIDES

1974	First report on resistance To Mevinphos
1976	First report on multiple resistance to, Carbaryl, Mevinphos, Malathion, Methyl Parathion, Diazinon and Dichlorvos

RESISTANCE TO INSECTICIDES

1982	Cypermethrin, Triazophos, Bt, Cartap, Fenvalerate, Deltamethrin
1994	IGR's (Nomolt, Diaract. Atabron)
2005	Fipronil (Ascend)

THE FILIPINO FARMER

MANAGERIAL CAPABILITY

- Age: 31-40 years old
- Gender: Male
- Education:
  - Elementary (39%)
  - High School (41%)
  - College (14%)

IMPORTANT INSECTS

1 DBM

2 Cutworm

3 Cabbage Butterfly

4 Aphids

PESTICIDE USAGE

- 91% use pesticides
- 85% use >2 kinds / season
- 1 kind after another
- 7-21 days interval

OTHER PRACTICES

- 45% crop rotation
- 31% release Diadegma
- 13% IPM
- 11% others (i.e. organic)

CROPS FOR ROTATION

- 43% Potato
- 17% Carrot
- 15% Others

PREFERENCES

1 Fenos, Prevaton,
Voliam Flexi

2 Success (Spinosad)

3 Tamaron (Methamidophos)

OTHER INSECTICIDES USED

Ascend (Fipronil),

Decis(Deltametrin),
Hostathion(Triazophos),
Kafil(Cypermethrin),
Kutetso(Chlorphenapyr)

OTHER INSECTICIDES USED

Matador (Methamidophos), Malathion (Malathion), Padan (Cartap), Pegasus (Diafenthiuron), Sumicidin (Fenvalerate), Thuricide (Bt), Vegetox (Cartap)

SOURCE OF INFO

- Radio
- Brochures/Posters
- Exhibits/Trade fairs
- Trainings/Seminars
- Academe/DA/LGU’s
- TV

DECISION-MAKING

1. Chemical dealers
2. Company technicians
3. Co-farmers

SERVICE PROVIDERS

SUC'S/DEPT. AGRICULTURE

- Conduct research
- Conduct extension activities:
  - Radio programs
  - Trainings
  - Publications
- Establish Demonstration Farms

DEPT. OF AGRICULTURE

- Nationwide implementation and monitoring of programs
- Provide funds for research and extension
- Creation of Quick Response Task Force during pest outbreaks

ESTABLISHED SERVICES

1975 - Fertilizer and Pesticide Authority
1990 - Accreditation of researchers (1990)
1990 - Farmers' Field Schools (Biocon-IPM)
1998 - Mass rearing & field reslease of Diadegma and Cotesia
❖ Mass Rearing houses established ❖ The number of spray applications was reduced to 1-9 from 15-36 sprays before IPM

ESTABLISHED SERVICES

2000 – Farmer's Information Technology Services(FITS)
2010 – Open Academy in Agriculture
2010 – RA 10068 Organic Act
❖ Organic congress conducted yearly ❖Organic markets established, i.e. LATOP

LOCAL GOV'T UNITS

- Collaborate with other stakeholders
- Implement programs

THE PESTICIDE INDUSTRY

1960's – How to reach farmers
1970's – How to use the product
1980's – How to protect the health of farmers, consumers, and environment (Judicious Use)
1990's – How to maintain product efficacy
2000's – Teamwork (Diamide)

CHALLENGES

- Introduce monitoring at the community level
- Institutionalize quick response service team
- Reimplementation of bioconbased-IPM-FFS
- Production of inputs for organic production
- Strengthen networking

THE PESTICIDE INDUSTRY

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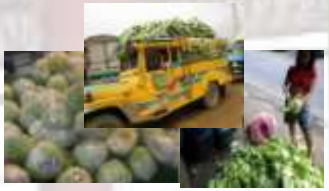
THE PESTICIDE INDUSTRY

1990's - How to maintain product efficacy
2000's - Team building (Diamide)

THE STAKEHOLDERS

FARMERS

DA



INDUSTRY

LGU'S

R&E

OTHERS

I R M

Thank you

FIELD SURVEY (2004)

Parasitization during rainy season Diadegma : 72.28% Cotesia : 4.71%
Parasitization during dry season Diadegma : 41.20% Cotesia : 8.3%

FIELD SURVEY (2010)

Parasitization during rainy season Diadegma : 75%
Parasitization during dry season Diadegma : 85%

THE STAKEHOLDERS