

RESEARCH DEVELOPMENTS IN ENHANCING THE EXPORT OF PITAYA IN VIETNAM



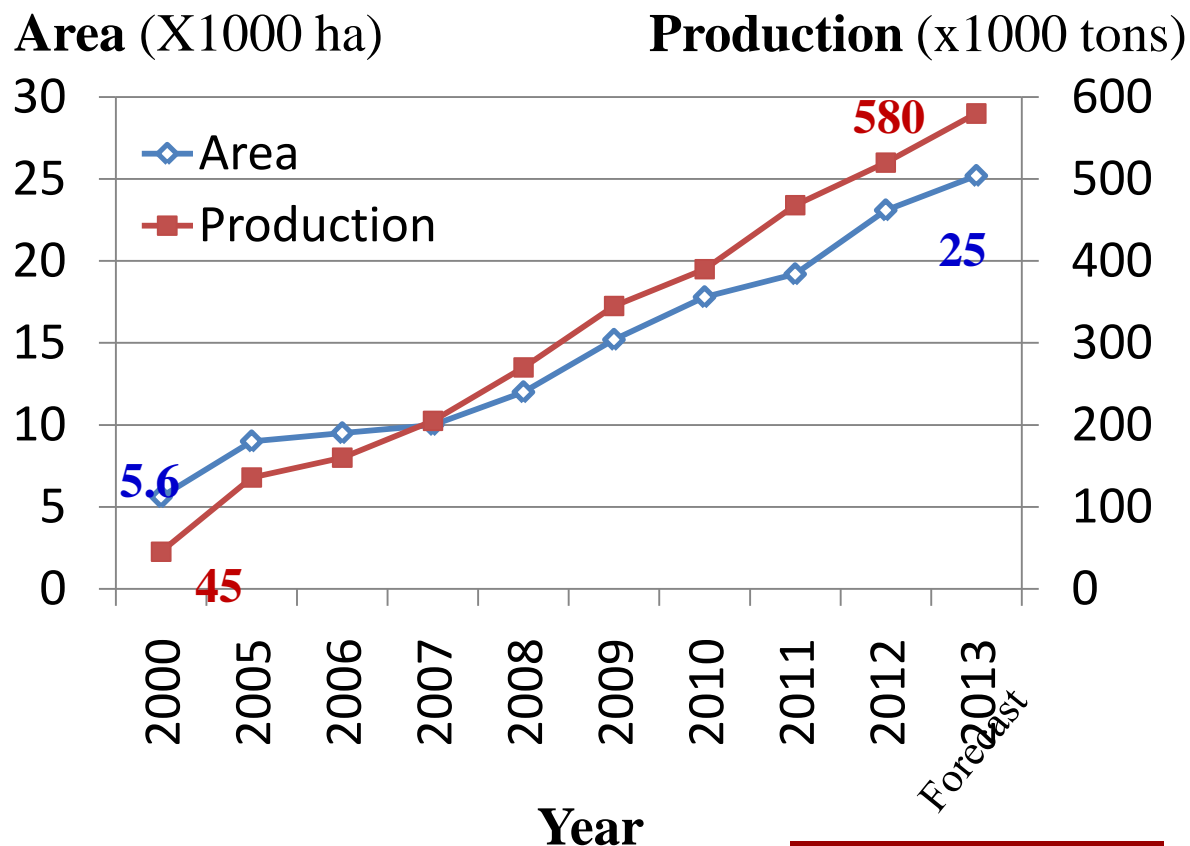
*Nguyen Van Hoa, Nguyen Minh Chau, Nguyen Quoc Hung
and Trinh Khac Quang*

Vietnam Academy Agriculture Science (VAAS), Viet Nam
hoavn2003@gmail.com

- Southern Horticultural Research Institute – SOFRI
- Fruit and Vegetable Research Institute - FAVRI



Area and production of Dragon fruit in Vietnam



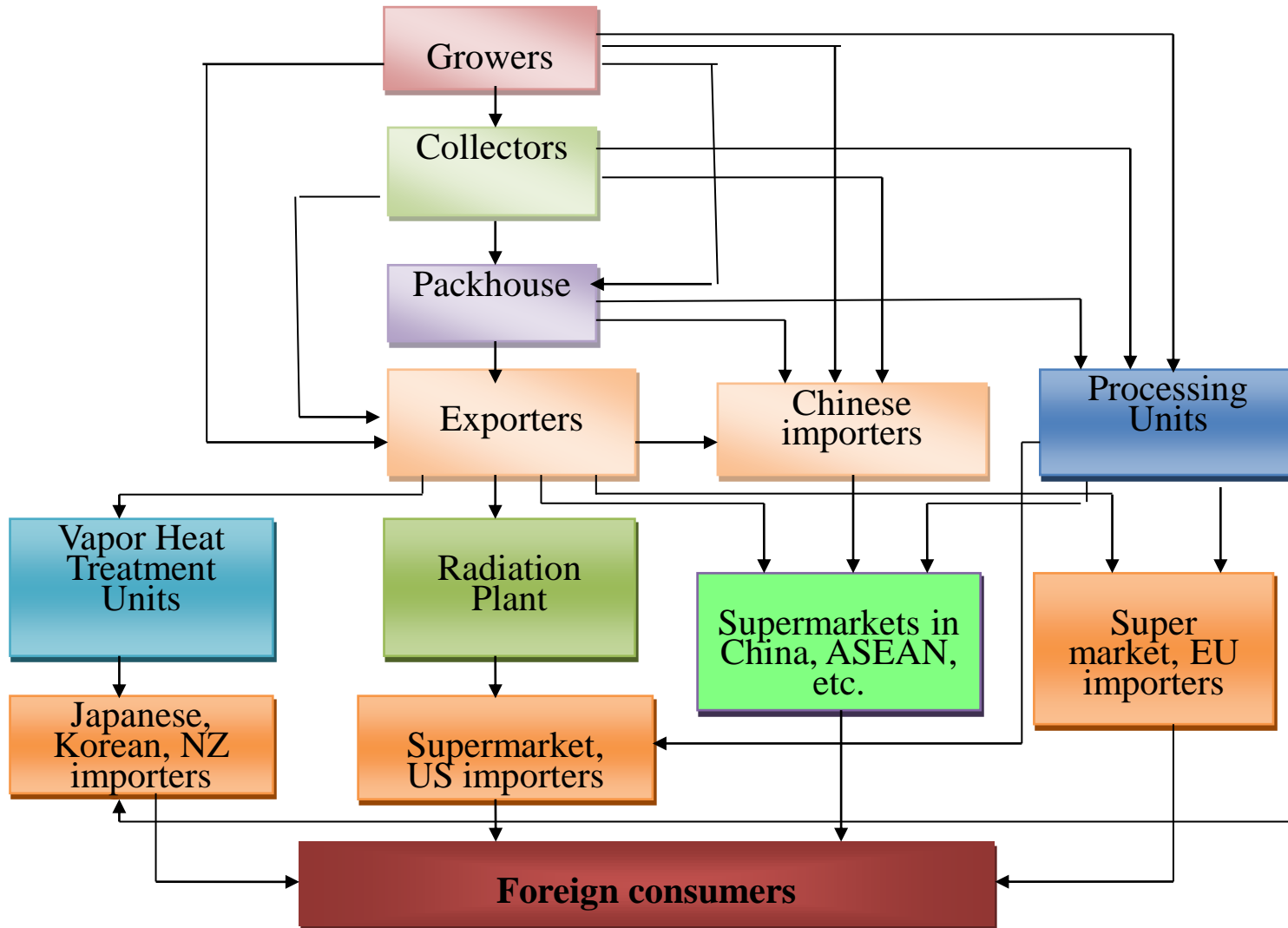
2013/2000:

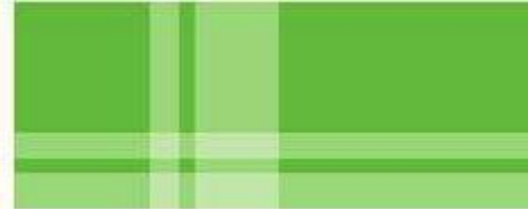
+ Area: 4,5 times

+ Production: nearly 13,0 times

2014: 28,700 ha

Pathway of DF from Vietnam to the world





Vietnam's dragon fruit exports market

- ◆ Vietnam' dragon fruit exports to 33 countries and territories in the world.
- ◆ Export to other countries: ASEAN countries, EU, US, New Zealand, etc.
- ◆ In 2013: 06 new Markets: Philippines, Myanmar, Australia, India and Denmark
- ◆ In 2014: New Zealand





Vietnam's dragon fruit exports by value, 2003-2013



5,8 mill.
USD



Year
2003

10,4 mill.
USD



Year
2005

59,1 mill.
USD



Year
2010

107 mill.
USD



Year
2011

181 mill.
USD



Year
2012

203 mill USD
(↑12,2% in
comp. 2012)

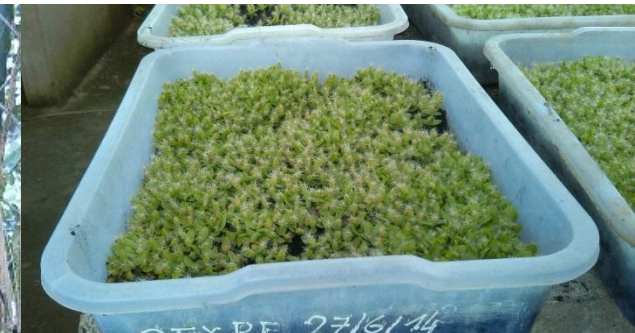
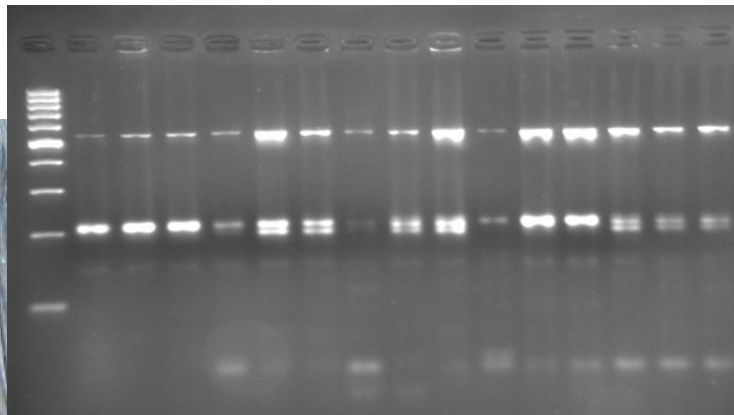


Year
2013

Many studies have been carried out to enhance the exportation of Pitaya in Vietnam

By:

- Southern Horticultural Research Institute – SOFRI
- Fruit and Vegetable Research Institute - FAVRI



New Varieties
development through
more than 10 years
breeding programmes of
SOFRI



Red Flesh Dragon fruit Long Dinh
No. 1 (SOFRI)

(Local White flesh X Red flesh
from Colombia) – released for
commercialization in the year 2005

Purple Pink Flesh LD5 (SOFRI)



Red Flesh Dragon Fruit Long Dinh No 1 x White flesh CG-005 (line T9). Released for commercialization in 2010

Red Flesh Dragon Fruit TL4 from **FAVRI**, released for commercialization in 2012.



Some new promising lines from **SOFRI**



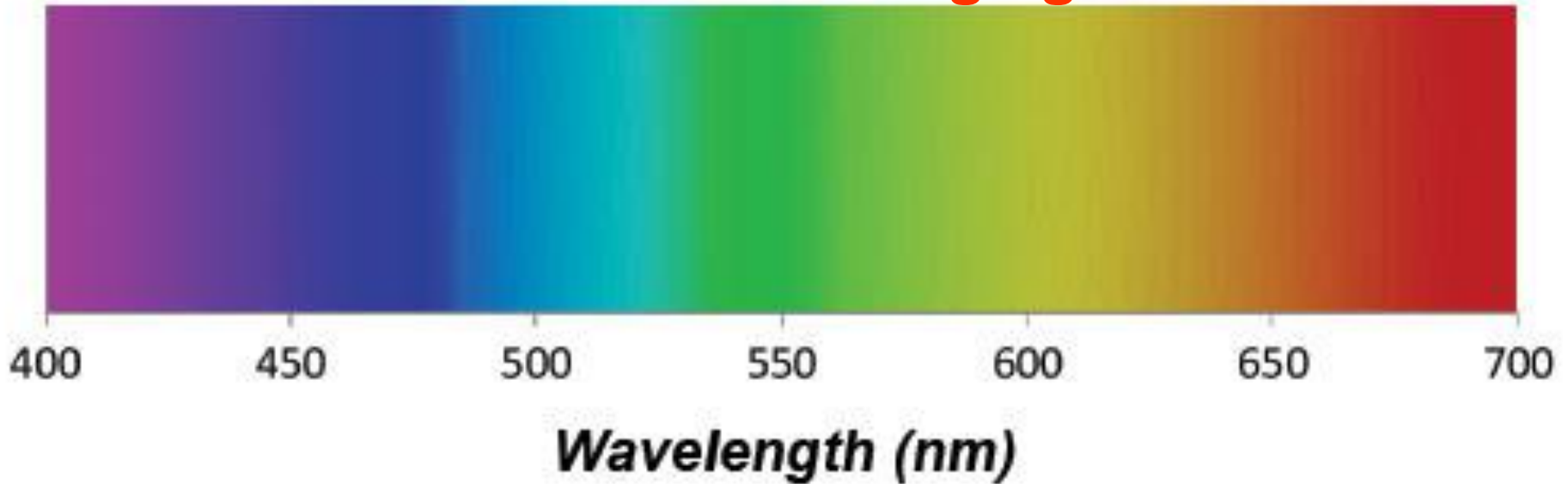
New Potential Variety of Dragon Fruit from FAVRI for the North of Vietnam



**Red Flesh Dragon
Fruit TL5 from FAVRI**



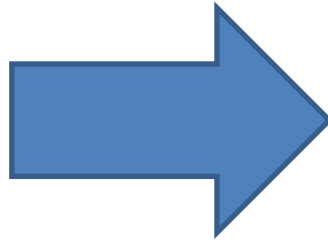
Studies on manipulation of Flower induction using light



← Visible Spectrum →



Thread Light Bulb



Light with **7 colors**,
Lengthwave **380-700 nm**

Yellow Compact 20W, 3 colors
1/ Dark Green
2/ Red & Far Red, 3/ Pale Green

Reduce the power use up to 60%

Improvement of the induction of flowers using different types of bulbs

No	Treatments	No. flower bud (White flesh)	No. flower bud (Red flesh)
1	Compact bulb 20W (U)	76,14	55,29
2	Compact bulb 26W (Twisted)	68,86	51,86
3	Thread light bulb 75W (control)	69,57	45,29
	F	ns	ns



Study on and use of SOFRI – Protein (Protein bait) for controlling of Fruit Fly

- There are two main fruit fly species attached DF are *Bactrocera dorsalis* and *B. correcta*.
- Collaboration with Griffith Uni., Australia in: Study and produce SOFRI – Protein for field control of *Bactrocera dorsalis* and *B. correcta*) on large scale.



IPM for Fruit fly control:

1. Sanitation
2. Cultural practices
3. Fruit bagging
4. Pheromone
5. SOFRI - Protein
6. Insecticides (Farmers)
7. Postharvest treatments

SOFRI PROTEIN

THÀNH PHẦN :

PROTEIN TỔNG CỘNG	10,29 %
NH4	00,10 %
ĐỘ ẨM BẢO HOÀ	67,81 %
TỔNG LƯỢNG CHẤT RẮN	21,60 %

Men bia của Cty Foster's Tiền Giang là nguyên liệu thô sản xuất SOFRI PROTEIN. FOSTER'S cam kết luôn hỗ trợ nông dân vùng ĐBSCL.





Đặc trị ruồi đục trái

Sản phẩm SOFRI PROTEIN này khuyến mãi bà con nông dân dùng thử

HƯỚNG DẪN AN TOÀN

- Phải mang đầy đủ trang bị bảo hộ khi sử dụng thuốc
 - Tránh hít phải hơi thuốc.
 - Không để thuốc tiếp xúc với da và mắt.
 - Không ăn uống và hút thuốc trong khi sử dụng thuốc.
 - Tắm rửa kỹ ngay sau khi sử dụng thuốc.
 - Không đổ thuốc thừa và bao gói xuống nguồn nước, ao nuôi cá
 - Bảo quản thuốc nơi khô ráo, thoáng mát, xa trẻ em và nguồn lương thực, thực phẩm.
- SƠ CẤP CỨU**
- Khi thuốc dính vào da, mắt phải rửa bằng nước sạch nhiều lần.
 - Khi ngộ độc đưa ngay bệnh nhân đến bác sĩ và mang theo nhãn thuốc.

Đóng chai tại :

CÔNG TY CỔ PHẦN THUỐC SÁT TRÙNG CẦN THƠ

CPC

ISO 9001 : 2000

BVQI & QUACERT CERTIFIED

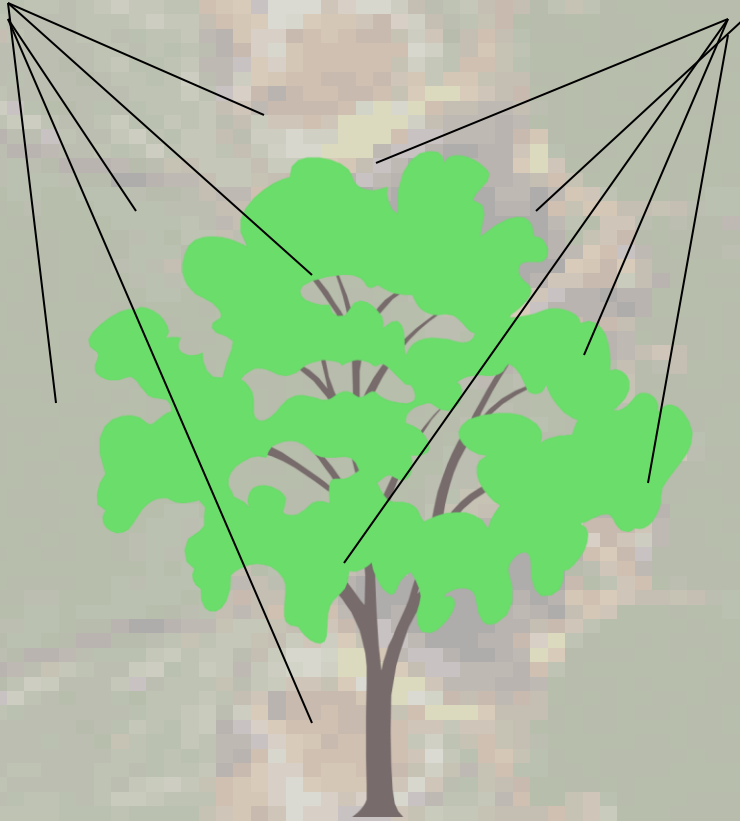
Phường Phước Thới, Quận Ô Môn, TP. Cần Thơ

Tel : (071)861770

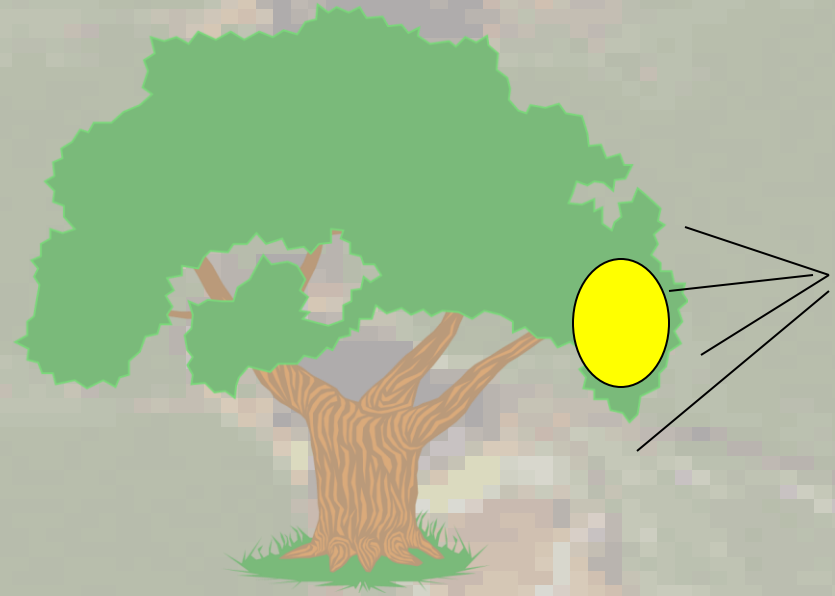
Fax : (071)861798



Traditional control of fruit fly by systemic insecticide



SOFRI – Protein use



**Comparison between traditional and SOFRI – protein use for
Fruit fly control under field conditions**

SOFRI – Ant bait for controlling of ants on Dragon fruit orchards

Summary the diagram of ant controlling using ant bait

NGUYỄN HÈM-BẢO QUẢN XÃ TRÈ EM

BÀ DẪN DỤ DIỆT KIẾN GỐC THIÊN NHIÊN-THẾ HỆ MỚI NHẤT

SOFRI D-H-A-T

Naturalyte ants control

Đọc kỹ hướng dẫn trước khi sử dụng

Thành phần : Đường Frutosa 98%	Phụ gia20g
Napagin 1,25g	Borax3%

Công dụng : SOFRI D-H-A-T trừ các loại kiến gây hại trong nhà đóng gói, kiến hại trên vườn thanh long theo sản xuất an toàn GAP



Ants attracted by bait



Dragon Fruit Orchards

Study and Use of SOFRI – Trichoderma for controlling of root rot disease on Dragon Fruit

- SOFRI – Trichoderma has been studied and produced for commercialization on Dragon fruit orchards to control Root rot disease.



Studied on Anthracnose disease and It's control protocol

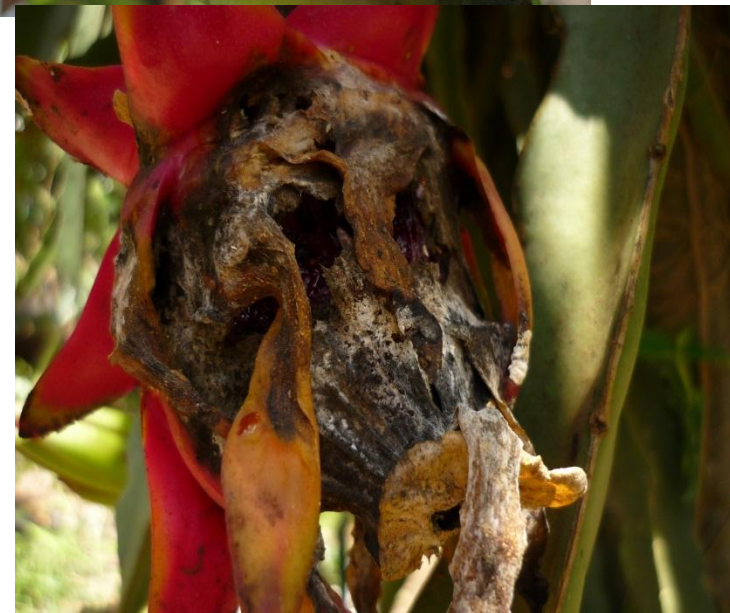
- Identified the causal agent: *Colletotrichum gloeosporioides*
- Diseased development conditions
- Develop protocol for controlling of the disease using IDM
- Demonstration and training for large scale controlling



Study on Fruit rot disease



- Causal organism: *Erwinia chrysanthemi* and *Rhizopus* sp.
- Disease development study
- Control Measure and farmers training



Study on Canker Disease

➤ Identified the causal agent (2011):

- + *Neoscytalidium dimidiatum* by Morphology and molecular tools (sequence of 233bp).
- + Disease development (temp., pH)

Control measure

- + Using fungicides in-vitro and field conditions (more than 30 fungicides have been tested)
- + Using biological tools
- + Sanitation
- + Cultural practices (pruning, training of the canopy)
- + Change the design of the DF farm for more ventilation



Disisease development



4 days



12 days



20 days



Toxin and sporulation



Sporulation

Fungal Invasion study



Wetting agent – Help spreading of fungicide better



water



Siloxane Alkoxylate



Benzene Sulfonate



Sodium Lauryl Sulfate

Sanitation – pruning and cutting to small pieces for decompose



Dragon Fruit VHT standardization for postharvest treatment

Vapor heat treatment

- 45,6°C,
- 20 min,
- Wind speed 2m/sec.



Support the industry to export DF to Japan, Korea, New Zealand

Modified the dose of Umikai (natural Calcium) for post harvest treatment to increase the shelf life of the fruit.



Improvement of the protocol for shipping DF to EU (increased the shelf life from 4 weeks to 8 weeks)



Written and used
GlobalGAP manual for
Dragon fruit
production in large
scale

Written and used BRC
manual for packhouse



The Dragon Fruit
Quality Manual



GAP standards certified for Dragon fruit production

- ◆ To enter and meet demand of international markets, Vietnam's dragon fruit had applied the GAP standards since 2005.
- ◆ End of 2012, there was reached 6,800 ha of dragon fruit GAP certificated, with 8,200 famers (VietGAP: 6580 ha and GlobalGAP: 223 ha).
- ◆ In 2013: VietGAP: 7580 ha and GlobalGAP: 230 ha).



GLOBALG.A.P.
The Global Partnership for Good Agricultural Practice



Training course, Plant doctor and Farmer field school





Thank you!



Contact point: hoavn2003@gmail.com

Chuỗi giá trị thanh long xuất khẩu tại Chợ Gạo

