Postharvest Preservation – One of Important Services for the Mekong Delta's Fruit Farming Development

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1. Vietnamese fruits on the way to integration

According to the Ministry of Agriculture and Rural Development, the country's total fruit growing area has increased rapidly over the past 10 years due to the change from low-yield rice and perennials into fruit growing. Until mid 2004, the total fruit area amounted to more than 700,000 ha with the output of 7 million tonnes per year, increasing 262.8% in area and 111.66% in output as compared to 2000.

At present, most of fruit orchards are located in the Mekong Delta, accounting for 60% of the country's total area, mainly in provinces of Tiền Giang, Vĩnh Long, Kiên Giang, Bến Tre, Cần Thơ, Đồng Tháp, etc. The region's major fruits include coconut, banana, mango, green dragon, rambutan, durian, mangosteen, etc. Some species are well-known for their flavor like Năm Roi grapefruit, Ri 6 durian (Vĩnh Long), small-pip Chín Hoá durian (Bến Tre), Hoà Lộc mango, Lò Rèn star-apple (Tiền Giang)...

Vietnamese fruits production is facing a lot of challenges, first in those countries which have recently joined WTO, for example, China is a potential market importing 50% of Vietnam's fruit exports because they begin requiring higher quality than before. The fruit quality includes appearance, flavor, and nutrition which have to satisfy the buyers' taste.

According to Mr. Nguyễn Văn Kỳ, General Secretary of the Vietnamese fruits Association, many customers from Asia, Europe, and North America have paid more attention to Vietnamese high-quality fruits which are exported to more than 30 markets in the world. The problem is how to bring Vietnamese fruits to end-users in the best condition, that is, how to preserve them as long as possible. Preservation includes semi-processing and processing fruits after harvest.

2. Facts Of Fruit Exportation

Farmers have applied new technologies to cultivation and thus promoted their products and quality. More importantly, they are quickly adapted to the market competition by registering their unique fruit brands including Hoà Lộc mango, Lò Rèn star-apple, milk durian with small pip and yellow pulp, green-rind grapefruit, and green dragon. In addition, they also build websites for marketing their fruits. The Mekong Delta fruits account for 60% of the country's output and more than 70% of the export value of Vietnamese fruits.

In the past, Vietnamese fruits production has experienced a lot of ups and downs. In 1995, the vegetable and fruit sector's export earnings posted US$50 million with a small number of markets, but the figure doubled even in the following year. Unfortunately, it dropped to US$70 million in 1997 and US$50 million in 1998. Nevertheless, the following years saw robust growth with promising figures like US$100 million in 1999, US$200 million in 2000, and some US$330 million in 2001 with 42 export markets. Then it encountered disadvantages of plant quarantine and food safety of new markets, especially when China, which is the largest export market of Vietnamese fruits, becomes WTO membership. Therefore, the export sales fell by more than US$100 million from the previous year and continued falling to US$170 million in 2004.

The sector's unstable growth showed more clearly when the total fruit area increased by 2.43 times while the output value rose only 1.3 times. It is forecast that the sector may run into more troubles due to stricter quarantine of importing countries while this task cannot be done just in local fruit orchards.

The decline in export volume of the Mekong Delta fruit is attributed to the following facts:

(1). China, the largest fruit importer of Vietnamese fruits, requires higher quality because of its WTO conditions.

(2). China and Thailand (Vietnamese fruits export competitor) has signed their trade agreement on fruits and Thai fruits are thus exempted from Chinese import duty.

(3). Vietnamese fruits quality remains low, not meeting the market requirements.

(4). The value-added of Vietnamese fruits is not high. Moreover, fruits are not strongly attractive to customers.

(5). The processing and preservation technologies are still obsolete, so the fruit flavor cannot be kept longer as requested.

The harvest and postharvest losses of the Mekong Delta's fruits range from 25% to 30%. This is an important factor pushing their prices highest in the Southeast Asian market, thus blunting the competitive edges of Vietnam's fruits in domestic and foreign markets.

According to the Ministry of Trade, the export value of Vietnam's vegetables and fruits reached US$34.66 million, increasing 73% year-on-year, but mainly from the US, Japan, and Russia. China is no longer a good earth!

3. Facts Of Postharvest Preservation

Farmers are not fully responsible for their poor technologies of fruit postharvest preservation. According to Ass. Prof. Dr. Vũ Mạnh Hải – Director of the National Vegetable and Fruit Research Institute, the government agencies and farm extension officials have not given detailed guidelines to farmers in selecting seeds, growing and caring trees, reaping and preserving fruits after harvest. With respect to growers, their production remains scattered, small, and not integrated with old habits and poor varieties.

At a workshop on plant protection in ASEAN countries, Vietnam was noted as one of underdeveloped countries in plant protection. As a result, in the border region Chinese traders buy Vietnamese fruits for cheapest prices and process and export them to the US market because they have modern

technologies of fruit postharvest preservation.

Moreover, the China's quarantine system with modern equipment has played an important role in re-exporting Vietnamese fruits to other markets.

According to Ass. Prof. Dr. Nguyễn Bảo Vệ, Head of the Agronomy Faculty of the Cần Thơ University, the rind color of citrus will change and its sourness declines after 5 to 7 days of harvest. Grapefruits and durians can keep their flavor longer but only ten days. These disadvantages restrict the export of fresh fruits because it takes at least 30 days to ship fruits to Europe. If fruits are transported by air, they must incur a freight cost of US$3/kg.

The Vietnam's capacity of fruit export is so potential, however, businesses' processing and preservation technologies remain obsolete, so their product prices are always lower than Thai and Chinese fruits of the same kind.

Nevertheless, hi-tech investments in fruit preservation are sometimes ineffective. Hoàng Gia Company, for example, has purchased Australian and American technologies to preserve Năm Roi grapefruit but failed while the made-in-Vietnam way of using ozone water is very successful. Nowadays, the company's Năm Roi is exported to the US and Swedish markets.

Vietnam currently has more than 60 vegetable and fruit processing companies. Most of them are using old-fashioned technologies. They have not yet made intensive investments in postharvest technologies.

The project to enhance quality of Hoà Lộc mango started from 2001, involving a lot of scientists and research agencies including the Cần Thơ Science and Technology Service, the Agronomy Faculty of the Cần Thơ University, the South Fruit Research Institute. As a result, the "life cycle" of mango amounts to 4 weeks. After 4 weeks, the mango remains green as just reaped. At present, scientists are carrying out final evaluations and will transfer total technologies to the Sông Hậu Farm. The agronomists also find the preservation formula for green dragon, Năm Roi grapefruit, longan and orange.

4. Measures to promote postharvest preservation for the Mekong delta fruit

(1). Macro-level measures:

- The Government is required to conduct a scientific survey to identify regions specialized in growing fruits. It must attract local and foreign agronomists to these projects.

- Based on specific studies, the Ministry of Agriculture and Rural Development shall take the main charge of building fruit specialized regions with large area for hi-tech investments and cost reduction.

- The Government should devise liberal and appropriate policies to facilitate applications of research programs to production and preservation, for example, grant adequate budget to these programs. These projects have to attract both agronomists and production units (especially profit-earning cooperatives) and prove their feasibility and high efficiency.

- Tax incentives and other protection policies should be given to cooperatives for their development in the current harsh competition.

(2). Micro-level measures:

- Farm cooperatives establishment and expansion should be boosted in accordance with the Law on Cooperatives promulgated in 2004. Their service cooperatives shall help farmers with fruit postharvest preservation. The cooperatives' operations must be oriented toward the community development, not aiming at only high profitability.

- These cooperatives shall execute the process of Good Agricultural Practices – GAP which is commonly used in the world, especially in Western Thailand. The process aims to secure the quality of fresh fruits by means of harvest and post harvest preservation technologies (semi-processing, frozen preserving). Recently, Sông Tiền GAP Link has been set up with 51 members, especially 10 cooperatives and one farm, specialized in fruit production and selling. Initially, the GAP Link focuses on 6 provinces of Tiền Giang, Long An, Bến Tre, Đồng Tháp, Vĩnh Long, and HCMC.

- The Government, agronomists, business people and cooperatives shall make close cooperations to spur cooperatives' development.

- One of biggest hurdles to farm production is low educational attainment of farmers. The Government as well as academic institutions is required to make special policies for them to promote their skill and knowledge by different forms of training, for example, distant or on-the-job training.

In short, cooperatives are extremely important models for fruit production development. They also provide services of postharvest preservation to fruit growers so that fruits can be shipped to foreign markets. More importantly, agronomists and government agencies have to conduct surveys and studies and transfer their results to farmers so that they can apply modern technologies in their postharvest preservation.■