

The Communication of Healthy Vegetable Techniques

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I. Identified issue

Spreading healthy vegetable techniques through various communication skills is the major theme of this case. The communication strategies are used in areas centered in the National Exemplary Base of Healthy Vegetable – located in Hubei Province's Yunmeng County. In the past 4 years, the communication strategies have proved highly successful.

II. Objectives of science communication

2.1 The primary objective of this case is to spread key technologies of healthy vegetable plantation and strengthen operation standardization in the process of the communication. This case is aimed at guiding efficient production of healthy vegetables through strict operation criteria, selecting good breeds, adjusting sowing period, scientifically managing field, reasonably using fertilizers and using appropriate pest prevention strategies. In this case, low-pest vegetables are planted to reduce pesticide uses and optimizes plantation structure to avoid the high occurrence of pests in the period between June and September. In fertilizing process, organic fertilizers are used. In preventing pests, physical, man-made, biological and chemical methods are used to avoid high residue of poisonous pesticides. Biological pesticides are used as much as possible to lower poisonous level.

2.2 The case is also aimed at spreading new technologies appearing in the plantation of healthy vegetables. Unified forecasting, measuring, pesticide prevention and criteria are used to reduce the threat of pests and increase costs. The frequency-vibrating pest-killing lamps are introduced to reduce poison and save pesticide costs.

2.3 In the third aspect, this case is promoting testing technologies of healthy vegetables. Agricultural product safety inspection centres are established, equipped RP—410 pesticide residue inspection machines. Inspections in the vegetable production base, markets, and hotels are frequently and randomly held. The results are released through news media.

2.4 In its fourth aspect, this case is aimed at spreading technical criteria of healthy vegetables. The industrial standards of healthy vegetables are introduced and standardized production base is established. The standardization of production is also advanced to improve product quality and farmers' income.

III. Target audience

In the production process, farmers are communicated of production skills of healthy vegetables. In the consumption area, urban and rural residents, schools and restaurants are indoctrinated with the conception of healthy vegetables. In the management area, relevant departments are educated with healthy vegetable regulation laws. And in the process of marketing, farmers and rural associations are taught with green marketing strategies of vegetables.

IV. The process of science communication

Using the "5W" communication model proposed by Harold Lasewell, this case combines all the steps ranging from healthy vegetable production to consumption. It integrates research,

promotion and enterprises, harmonizes plantation, vegetation protection and clay fertilizer, unify works in pre-production, production, and post-production; combine experiment, exemplification and promotion, coordinate guidance, service and inspection. The practice of this case has particular significance in healthy vegetable promotion.

Several communication models are used in this case.

4.1 Opinion leader-based model is the first format used in this case

In the process to communicate production techniques of healthy vegetable, opinion leaders of different aspects are selected. In the first layer, they are chief experts, chief agronomists and technical leaders in the healthy vegetable base. All of them have great influence. In the second layer, opinion leaders are credible dealers of seeds, fertilizer and pesticides. In the third layer, the kinds of leaders are exemplary household of healthy vegetable plantation. Such households are selected to receive regular trainings and guidances. They will lead nearby rural households and farmers to develop the production of healthy vegetables.

4.2 Mass media-based communication style is the second model used in this case.

4.2.1 Public awareness on the healthy vegetables is boosted through media reports. TV stations, broadcasting, newspaper, wall papers, seminars are utilized to enhance public knowledge on healthy vegetables. A good atmosphere for the production and consumption of healthy vegetable has been formed. Consumers are widely accepting healthy vegetables.

4.2.2 Technical materials are printed and distributed. A handbook on the production of healthy is combined and two cards of clear production and the reasonable use of pesticides are allotted to farmers in the healthy vegetable production base.

4.2.3 Technical training is frequently held. The healthy vegetable base organizes training courses targeting township and village leaders, major vegetable planting households, and major dealers of pesticides and fertilizers. The training is aimed to improve their capability to guide, exemplify and serve healthy vegetable production. Experts of plantation, vegetation protection, fertilizer and environmental protection are organized to come to households and fields to guide production. A total of 12 technical service teams are organized to form a system of technical service.

4.2.4 Exemplary teams are developed. In a township, such a technical exemplary team is set up, responsible for operating an exemplary vegetable planting village, and cultivates 100 households producing healthy vegetables. The team will carry out full-process technical guidance and supervision.

4.3 The model focused with the government forces is the third kind of communication model in this case.

In the process of communication agricultural technologies, governments of various levels play the role of advancing, guiding, protecting and organizing farmers. The role is irreplaceable. The biggest threat in the process of vegetable production is the use of high-residue chemical pesticides and fertilizers. To overcome the problem in the process of healthy vegetable production, strict supervision on each step of the vegetable planting, processing and sales is needed. This role can only be played by the government. The government also released clear rules to stipulate high-residue pesticides and chemical fertilizers are forbidden in healthy vegetable production base.

4.4 The communication model focused on the coordination of different departments is another strategy used in this case.

A county-wide headquarter on healthy vegetable production was established in 2001 year, organizing agricultural departments, police, industrial and commerce supervision departments, and technical monitoring departments to form a specialized management team, networking 135 agricultural production material sites and healthy vegetable planting farmers across Yunmeng county. All agricultural production material operators must first undergo training and get qualification licenses before they can start their business. Only authorized fertilizers and pesticides are allowed to sell while any dealer selling fake and shoddy products is severely punished.

4.5 The market-oriented communication format is also adopted in this case.

4.5.1 Communications through training marketing players have been carried out. In accordance with the principle to integrate market, production base, companies and rural households, various sub exemplary bases of healthy vegetable production and major vegetable-planting farmers are networked by leading agricultural companies. The companies offer series of services in information, test, and sales to farmers. After the products are tested and qualified, they will be sold by companies uniformly.

4.5.2 The communication network of vegetable circulation has been formed. A group of leading vegetable transportation and marketing people have appeared. Based on them, an association of vegetable circulation was set up 1996 year . A vegetable circulation network led by the association, supported by various intermediary organizations and linked by agricultural information providers has been developed. The association has awarded restaurants selling healthy vegetable with a big identification tablet. The sales of healthy vegetables have been boosted by the spurred consumption of such vegetables. Various seminars are held among major vegetable users to help them understand information and criteria of healthy vegetable. So far, a total of 30 vegetable sale organizations and 220 leading vegetable transporters and dealers have been developed across Yunmeng County. Their total sales of healthy vegetable were 300,000 tons in 2003 year accounting for two third of the total sales of such vegetables in the county.

V. Science communication effects

5.1 The communication of healthy vegetable techniques has resulted in significant economic benefits. Accumulated 1 million mu (164,400 acres) fields of vegetable planting have been covered by the communication activities. A total of 2 million tons of healthy vegetables have been produced in 4 years. The production value is 1.2 billion yuan (US\$144.9), with net profit of 120 million yuan (14.49 million).

5.2 The social effect of the communication of healthy vegetable techniques is also great. The healthy vegetable production techniques have been remarkably improved, covering 98 per cent of farmers in Yunmeng County. The competitiveness of their products has been improved, and the economic value is increased.

5.3 The communication of healthy vegetable techniques has resulted in good biological effects. A total of 10 million yuan (US\$1.21 million) have been invested to monitor and evaluate soil, water and atmosphere in Yunmeng County. The irrigation with clean water is spread and major pollutions in agricultural production have been excluded. The use of high residue pesticides have disappeared and the qualification rate of healthy vegetables reaches 96.7 per cent.

Meanwhile, through the promotion of biological fertilizers and pesticides, the uses of chemical pesticides and fertilizers have been massively reduced, preventing environmental

pollution.

VI. Evaluation/assessment of how well results achieved objectives

6.1 Yunmeng County has passed the national checking and acceptance process for healthy vegetable production base. An exemplary base of healthy vegetable production of 157,000 mu has been set up, planting 300 varieties of vegetables. The exemplary base's annual production of fresh vegetable was 600,000 tons, with an annual production value of 400 million yuan (US\$48.3 million), accounting for 45 per cent of the total production value of plantation in the county. Vegetable industry has become a major part among farmers' income sources. In September 2002, Yunmeng County was listed by the Ministry of Health as an excellent exemplary base of healthy vegetable production nationwide. In 2003, the award was continued. In China, the evaluation and award from central government are often the best confirmation of communication effect.

6.2 A research "the Application and Spread of Healthy Vegetable" chaired by this author has been awarded by Xiaogan City -- to which Yunmeng County belongs -- the Science and Technology Progress Award.

6.3 Yunmeng County's national exemplary base of healthy vegetable has been listed into Wuhan's State Agricultural Technology Trial Base and Xiaogan Agricultural High-tech Park. Wuhan is the capital city of Hubei Province where Yunmeng is located. It is also a high-tech hub in Central China. Therefore, the positioning of Yunmeng's vegetable base will help people in the county acquire more advanced farming technologies rapidly.

6.4 Yunmeng County's national exemplary base of healthy vegetable production has been listed into advantageous crop producing belts in Hubei Province.

6.5 The industrialization programme of healthy vegetable production has been listed as one of provincial level project to train and develop high-tech talents.

6.6 The provincial government of Hubei hold an on-site meeting in Yunmeng in May 2002 to spread its pesticide safety practice and healthy vegetable production across the province, hence quickening the step to communicate healthy vegetable techniques.

VII. Author and two case study referees and their contact details

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