# Survey Analysis on Performance of Village Extension Workers in Beijing

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**Abstract** To accelerate the improvement in construction of grass-roots agricultural sci-tech service system, establish the Village Extension Worker (VEW) service team, and satisfy increasing demand of Beijing's farmers for agricultural sci-tech services, Beijing Municipal Bureau of Agriculture selected and trained 500 village-level agricultural technicians to provide agricultural technical services in August 2010. We carried out an interview and questionnaire survey for the first 296 VEWs, and analyzed their basic information, to find out their current service situations, technical training and demand, as well as difficulties in the course of providing services. On the basis of these, we put forward our recommendations on improving the VEW construction.

**Key words** Village Extension Workers (VEWs), Village-level agricultural technical service, Current post situations

Vigorously pushing forward and improving the construction of grass-roots agricultural technical extension system is of great significance to implementing the strategy of prospering the agriculture with science and education and to promoting agricultural sci-tech progress. At present, the progress is still not balanced in construction of grass-roots agricultural technical extension system, especially compared with that of grass-roots animal husbandry, agricultural machinery, and aquatic technology. There are problems of slow reform and construction pace, unclear responsibilities and tasks, not smooth management system, unstable personnel team, low skill quality, inflexible operating mechanism, and backward facility construction, *etc*, which have become bottleneck on extension and application of China's agricultural sci-tech achievements[1].

In these situations, Beijing has taken actions to improve construction of grass-roots agricultural sci-tech service system, speed up the establishment of village-level agricultural technical extension team, satisfy increasing demand of suburban farmers for agricultural sci-tech services, effectively solve problem of lacking demonstration and application of agricultural sci-tech achievements and the "last kilometer" problem of bringing science and technology to villages and families, and promote high-end, high-effective and high radiating development of Beijing urban agriculture and increase in farmers' income[2]. In 2010, Beijing Municipal Bureau of Agriculture selected and trained 500 village-level agricultural technicians in Daxing, Tongzhou, Fangshan, Miyun and Yanqing counties. The first VEWs have successfully started village-level agricultural technical service works since August 2010[3]. To find out current situations of VEW construction, promote construction of VEW-based new countryside sci-tech service system, and accelerate innovation upon agricultural extension system and mechanism, we surveyed some VEWs in three districts and two counties of Beijing.

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## 1 Basic information of the questionnaire survey

The VEW pilot work was carried out in three districts and two counties of Beijing. We selected the first 316 VEWs to answer the questionnaire. As a result, 296 copies are valid, including 98 in Daxing District, 42 in Miyun County, 49 in Yanqing County, 44 in Fangshan District and 62 in Tongzhou District, with sampling rate of 93.7%.

Among 296 VEWs, there are 206 men and 90 women, respectively accounting for 69.6% and 30.4%. As to the age, 10.9% are younger than 30 years old, 26.3% are 30 to 40 years old, 36.4% are 40 to 50 years old, 26.4% are older than 50. As to the educational level, 10 people (3.4%) are primary school level, 127 people (42.9%) are junior middle school level, 110 people (37.2%) are senior middle school or secondary school level, and 49 people (16.2%) are college or above level. Among the 296 people, 293 answered the time of agricultural production. 10 people (3.4%) have engaged in agricultural production for less than two years; 33 people (11.3%) have engaged in agricultural production for 2 to 5 years; 26 people (8.9%) have engaged in agricultural production for 6 to 10 years; and 224 people (76.4%) have engaged in agricultural production for over 10 years.

The above basic information analysis indicates that 76.4% VEWs have engaged in agricultural production for over 10 years, so they have rich experience in production, broad local knowledge, and technical foundation for providing service for farmers. 96.6% interviewees have educational level of junior middle school or above, but mainly at junior middle school or senior middle school, while few people have college or above

educational level.

## 2 Analysis of current situations of VEW services

**2.1 Service villages and objects** Among the 296 people, 291 answered the quantity of villages they served. 268 VEWs (92.1%) provided services for only one village; 23 VEWs (7.9%) provided services for two villages. 289 VEWs answered the question of address of villages where they provided services. Among them, 198 VEWs (68.5%) provided services for their own villages; 77 VEWs (26.6%) provided services for other villages; 14 VEWs (4.8%) provided services for both their own villages and other villages. Our survey shows that services for their own villages and other villages have advantages and disadvantages. Services for their own villages are easy to be carried out, because VEWs are familiar with service objects; however, assessment of this type of service is difficult, because service objects may not tell the truth of service effect for fear of hurting feelings of VEWs. Services in other villages are easy to manage, but it is hard to achieve desired effect, and travel expenses and time will increase service costs.

For service objects, 252 VEWs (86%) said that their service objects are all farmer households; 147 VEWs (50.2%) said that they mainly serve leading industry farmers; 27 VEWs (9.2%) stated that they have no clear service objects. Generally, VEWs have clear and definite service objects, so they can aim at demands of service objects and provide pertinent and effective technical guidance and information dissemination.

**2.2 Service contents and methods** After going on duty, VEWs mainly provide services for protected vegetable, outdoor vegetable, watermelon and melon, grain, livestock and poultry, aquatic products, fruit trees and flowers and plants, *etc.* 142 VEWs (48.3%) provide services for protected vegetable industry field; 166 VEWs (56.5%) provide services for outdoor vegetable industry field; 118 VEWs (40.1%) provide services for watermelon and melon industry field; 238 VEWs (81%) provide services for grain industry; 179 VEWs (60.9%) provide services for livestock and poultry industry field; 56 VEWs (19.0%) provide services for seed industry field; 40 VEWs (13.6%) provide services for aquatic product industry field. Our survey indicates that services provided by VEWs are mainly grain, livestock and poultry and outdoor vegetable, which are consistent with development objective of Beijing urban agriculture.

Service methods used by VEWs mainly include visiting households for information survey (270 VEWs adopt this method, accounting for 91.8%), agricultural sci-tech guidance (250 VEWs adopt this method, accounting for 85%), agricultural information conveying (270 VEWs adopt this method, accounting for 91.8%), animal epidemic prevention (196 VEWs adopt this method, accounting for 66.7%), organizing farmers to visit other places (98 VEWs adopt this method, accounting for 33.3%) and organizing training (234 VEWs adopt this method, accounting for 79.6%).

**2.3 Service means and time** As to service means, 279 VEWs (95.2%) expressed that they provide services mainly by telephone or mobile phone; 77 VEWs (26.3%) provide services through Internet; 94 VEWs (32.1%) provide services through offering embodied products (materials); and 67 VEWs (22.9%) provide service through providing farm implements. Among 296 VEWs, 291 answered question of service days they provided monthly. 7 VEWs (2.4%) provide services for 5 days monthly; 27 VEWs (9.3%) provide services for 10 days monthly; 76 VEWs (26.1%) provide services for 15 days monthly; 113 VEWs (38.8%) provide services for 20 days monthly; 68 VEWs (23.4%) provide services for more than 25 days.

For service time, 276 VEWs answered the relevant question. Among them, 37 VEWs (13.4%) provide 8 hour daily service; 136 VEWs (49.3%) provide 5 –6 hour daily service; 90 VEWs (32.6%) provide 3 –4 hour daily services; 13 VEWs (4.7%) provide 1 –2 hour daily services. These show that most VEWs spend much time and take great effort in providing actual services.

**2.4 Wage payment and assessment** In our survey, 287 VEWs answered the question of whether they have received wage subsidies within one year since they started to work. Among them, 78 VEWs (27.2%), 37 VEWs (12.9%), and 111 VEWs (38.7%) have separately received wage subsidies one time, two times and three times; and 61 VEWs (21.3%) have not received any wage subsidy. It indicates that wages of VEWs are not paid in time, and over half VEWs have wages below 1 500 yuan. Wage subsidy will influence VEWs' working enthusiasm, so government should pay wages timely in full amount.

As to question of performance assessment, 284 VEWs gave their answer and 12 VEWs did not answer. 234 VEWs (82%) attended the four-level assessment; 33 VEWs (12%) attended the three-level assessment; and 17 VEWs (6%) did not know the assessment form. The assessment for VEWs is mainly four-level assessment, namely, village level, township level, district or county level, and farmer household level.

Among these 284 VEWs, 220 knew their assessment result (accounting for 77.5%) and 64 did not know the result (accounting for 22.5%). Among 220 VEWs who know their assessment result, 81 are excellent, 120 are good, and 19 are qualified (pass the assessment). Therefore, it indicates that 70% VEWs achieved excellent in assessment, and over one year, works of VEWs have obtained approval.

## 3 Current situations of technical training and demand analysis of VEWs

**3.1 Field school training** Among 296 VEWs, 288 gave their answer to the question of whether they have attended the field school training. 202 VEWs (70.5%) of them have attended the field school training before going on duty; and 82 VEWs (28.5%) of them have not attended the field school training. 3 VEWs (1%) gave special remarks. Among 202 VEWs who have attended the field school training, 53 have attended 1 to 2 times, accounting for 26.2%; 29 have attended 3 to 10 times, accounting for 14.3%; 29 have attended 10 to 30

times, accounting for 14.3%; and 91 have attended over 30 times, accounting for 45.2%.

**3.2 Training after VEWs going on duty** After VEWs going on duty, competent authorities of agriculture in districts, counties or townships have organized many times of training to improve their skills. 286 VEWs have received such training: 33 VEWs (11.5%), 119 VEWs (41.6%), 57 VEWs (19.9%), 27 VEWs (9.5%) and 50 VEWs (17.5%) have received training 1 time, 3 times, 5 times, 10 times, and more than 15 times respectively. Our survey shows that more than 90% VEWs have attended training (more than 3 times) organized by competent authorities of agriculture in districts, counties or townships. Some VEWs have attended training for more than 15 times. It indicates that, on one hand, training provides comprehensive skills for VEWs; on the other hand, VEWs have realized the need of improving their skills.

**3.3 Analysis of training demand of VEWs** Among 296 VEWs, 274 (taking up 92.6%) are willing to continue to serve as VEWs. These 274 VEWs have urgent demand of improving their comprehensive skills. As to training contents, 281 VEWs (about 94.9%) answered the relevant question. According to statistics, training contents are mainly carried out in industrial technologies, agricultural information, and agricultural policies and laws. About 96.5% VEWs want to receive industrial technological training, such as prevention and control of plant diseases and insect pests; 52.3% VEWs want to receive agricultural information training, such as production, supply and marketing information, as well as rural financial information; 40.6% VEWs want to receive training in agricultural policies and laws, for example, various preferential agricultural policies; other VEWs have demand of rural financial, computer and technical extension training. For training ways, 147 VEWs (49.7%) hope to take the form of centralized teaching; other ways include visiting other places, field guidance and network media.

## 4 Difficulties faced by VEWs

Through interviewing and questionnaire survey, we found that VEWs are faced mainly with following difficulties.

**4.1 Difficulties in communication** 118 VEWs expressed that they have difficulties in communication with farmer households. This is mainly because some farmer households' planting ideas are outmoded, and they show strong repelling attitude towards new technologies, new varieties and new equipment.

**4.2 Difficulties in trusting** 193 VEWs stated that they have trusting difficulties with farmer households. This mainly happens among VEWs who provide services for villages other than their own. They reflected that some new varieties fail to be accepted by farmer households, and some new technologies fail to be popularized by farmer households, because villages repel strange VEWs. As a result, it is difficult to establish trusting relationship.

**4.3 Failure to achieve omnipotent requirement due to low technical ability** 86 VEWs expressed that their technical ability is low. Some said that they are not familiar with planting or cultivation, and hope to receive relevant training; some believed that their agricultural technologies are limited and hope to receive technical training, to broaden knowledge and enrich practical experience. In brief, VEWs think that their skills and abilities have not achieved the omnipotent requirement.

**4.4 Inconvenient in contacting service objects** 135 VEWs reflected that it is not convenient to contact farmer households, and the information is not smooth. Since operation of farmer households is decentralized, in addition to not fixed working time and place, it is difficult for VEWs to provide guidance for them. Since the implementation of VEW services, it has formulated and improved VEW management systems, including selection, assessment, and training. Although certain achievements have been made, there are still many aspects to be further improved. We recommend taking following actions:

Firstly, it is proposed to establish standard VEW selection and recruitment system. Our survey shows that there is still a large gap between educational level of VEWs and objectives of policies. Thus, the selection of VEWs is of vital significance to their survival. It is required to follow the open and fair principles to select and recruit excellent VEWs. Besides, it is required to bring into play their deserved functions. For example, let them do their own works, and not other works, to stimulate their enthusiasm, creativity and working potential. Also, certain policies and external supporting environment should be provided.

Secondly, it is proposed to strengthen technical guidance and knowledge renewal system of VEWs. Due to weak points of existing VEWs, it is difficult to satisfy diversified and individualized demands of farmers. Superior competent authorities should take effective training and methods to constantly improve basic skills of VEWs. For example, organize special technical guidance training, practical skill training, field guidance, periodic and non-periodic meetings, and centralized teaching, *etc.* In addition, it is required to establish expert bank, to strengthen the connection between contacts and VEWs. On the basis of existing conditions, it is proposed to provide more training opportunities for VEWs, strengthen their theoretical knowledge and operating skills, constantly improve their quality, improve their service level, effectively increase farmers' income, and promote increase in agricultural efficiency.

Finally, it is proposed to ensure payment of wages and improvement of working conditions. Simple office conditions and equipment impede working efficiency of VEWs and effect of farmers' training to some extent. The wage payment speed and amount also influence enthusiasm of VEWs, so relevant departments should timely pay wages and improve working conditions of VEWs.

## 5 Conclusions

In general, our survey of VEWs indicates that their self-evaluation is accepted as expected. However, their practical working situations and actual effect are still to be further surveyed and researched. It is proposed to find out problems and weakness of VEWs from the viewpoint of farmer households, and put forward recommendations for improving the VEW system.

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ward edible fungus cultivation modes, and energetically promote advanced technologies. According to segments of edible fungus production, it can be divided into strain production base, standard production base of compost, standard production base of mushroom products, mobile intelligent mushroom house production base, and standard production base of nutrient soil, *etc.* Waste materials after picking up mushrooms can be treated in the mode of " straw – edible fungus – fungi residues – ecological organic fertilizer – market" , " straw – edible fungus – fungi residues – decomposition and fermentation – return to field" , or " straw – edible fungus – fungi residues – clean energy resource (marsh gas or gasified raw material)" [2].

**4.4 Formulating preferential policies to increase support for edible fungus industry** It is proposed to take the road of government guidance, mass participating, urban and rural linking. For example, Lianyungang City can popularize the mode of " government + experts + leading enterprises + trade society + bases + farmer households" , to achieve the scale merit as soon as possible. The edible fungus industry is a rising industry which can benefit thousands of households, so it is required to increase the support for this industry. Firstly, financial departments at all levels and comprehensive development departments of agriculture should allocate certain amount of fund for developing edible fungus production. Secondly, it is proposed to offer preference for edible fungus leading enterprises in project establishment, land expropriation, taxation, financial support, and credit support, *etc.* Thirdly, we suggest establishing incentive mechanism to reward leading enterprises, relevant organizations, big planting households, and big transport and marketing households that have made great contribution to the development of edible fungus industry, so as to create a favorable development environment for edible fungus industry.

**4.5 Improving product grade and striving for brand benefit** It is required to set up solid brand awareness. At the same time of holding tightly the edible fungus production, it is also necessary to register brand of relevant new variety of edible fungus, actively apply for certification of harmless, green and organic edible fungus, and conduct bar code registration and external packing, to constantly improve product grade[3].

**4.6 Speeding up the expansion of scale of edible fungus industry to realize specialized intensive production** Lianyungang City should accelerate building specialized, intensive, standard, high-efficient and market-oriented edible fungus production demonstration park. Traditionally, the planting happens in August and September. Every household has to carry out fermentation, sterilization, and production, so the labor intensity is high. The operation procedure is complex; the yield per unit area is low and not stable; the production cycle is long. Through specialized and intensive production, farmers can transport raw materials from fermentation material factory, put into mushroom houses, pick them and deliver to sales company. These not only eliminate heavy work of farmers, but also guarantee product sales.

**4.7 Dealing with export barrier of agricultural products to promote standard production** At the international market, export of agricultural products is faced with huge challenges. Many countries take the " Green Barrier" as major means of trade control. In this situation, it is required to energetically implement standard production and control quality from the source. Firstly, it is recommended to provide standard production knowledge training for production, processing and export workers, especially mushroom farmers. Secondly, it should bring into play functions of agricultural, hygiene and food security departments. For raw materials and environmental factors of edible fungus production, it is proposed to provide comprehensive and accurate information for guidance, control, inspection and declaration in advance. For intermediate products and end products, the most strict international inspection standard should be applied, to exploit both domestic and international market and build famous brand both at home and abroad[4].

## References

[1] KANG YC, JIA CL. Edible fungi high-effective production technology [M]. Zhengzhou: Central Plain Farmers Press, 2008: 1 – 5. (in Chinese).

[2] SUN ZG. Productive present situation and development countermeasures on edible fungi in Zoucheng[J]. Edible Fungi of China, 2007, 26(2): 53 – 54. (in Chinese).

[3] WANG DJ. Developmental Trend on Edible Fungus at Home and Abroad as well as Current Status and Countermeasure on Production of Edible Fungus in Hubei Province[J]. Hubei Forestry Science and Technology, 2005(1): 42 – 46. (in Chinese).

[4] ZHANG JX. Edible fungi safety and good-quality production technology[M]. Beijing: China Agricultural Publishing House, 2006: 12 – 13. (in Chinese).

[5] HE Z. An exploratory analysis of cooperation model change in the process of tomato industrialization in Xinjiang, China[J]. Asian Agricultural Research, 2010, 2(2): 33 – 36.

[6] SHAO MC, CHEN CC, CHEN K, *et al.* Contents and assessment of heavy metals in edible mushrooms from Shipai Market of Guangzhou City[J]. Journal of Anhui Agricultural Sciences, 2010, 38(23): 12673 – 12675. (in Chinese).

[7] DING Q, WANG HL, ZOU JH, *et al.* A recycling agriculture model based on edible fungi cultivation[J]. Agricultural Science & Technology, 2011, 12(8): 1174 – 1178.

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## References

[1] MA L. Devoting major efforts to developing scientific technological coordinators of rural, building the rural system of scientific and technological service extension[J]. Journal of Beijing Vocational College, 2007(4): 3 – 5. (in Chinese).

[2] WANG DH, WANG XW, LIN XZ, *et al.* A study on working status and the need analysis of the rural extension coordinators[J]. Forum on Science and Technology in China, 2009(8): 112 – 114. (in Chinese).

[3] Agricultural Committee of Beijing, Agricultural Bureau of Beijing, Finance Bureau of Beijing. Operation scheme of Beijing village-level general agricultural technician team construction[Z]. 2010. (in Chinese).