Received: June 24, 2017
Revision received: May 14, 2018
Accepted: May 16, 2018

www.estp.com.tr
DOI 10.12738/estp.2018.6.185 ♦ December 2018 ♦ 18(6) ♦ 2853-2863

Research Article

Innovation Method of Educational Cultivation Path of New Type Professional Farmers*

Zijun Hu[1]
Hebei Agricultural University

Jia Li[2]
Hebei Agricultural University

Abstract

With the rapid development of Internet, the combination of agriculture and Internet becomes more and more important. Based on the agricultural development in the new era, this paper puts forward the agricultural cultivation mode based on mobile Internet. The research results show that the urban and rural development of dualistic contrast, the lack of top-level design and the backwardness of planting technology are obstacles to the development of agricultural farmers in the new era. Relying on the development of Internet, we can improve the self-learning concept of farmers. The research results are of positive significance to improve the knowledge level and planting efficiency of farmers.

Keywords

Professional Farmers • Obstacles to Development • Improve Planting Efficiency • Mobile Internet

* Social Science Fund Project of Hebei Agricultural University: Research on the Introducing Mechanism of Rural Talents in Xiongan New Area (ZX201805-1). Human Resources and Social Security Subject of Hebei Province: Research on Employment and Entrepreneurial Support Policy of Land-lost Farmers in Xiongan New Area (JRS-2017-1104)

[1]**Correspondence to:** Zijun Hu (MA), Humanities and Social Sciences Academy, Hebei Agricultural University. E-mail: huzijun_hebei@outlook.com
[2]Humanities and Social Sciences Academy, Hebei Agricultural University. E-mail: 24530329@qq.com

Citation: Hu, Z. J., Li, J., Research on Innovation Method of Cultivation Path of New Type Professional Farmers. *Educational Sciences: Theory & Practice, 18(6),* 2853-2863. http://dx.doi.org/10.12738/estp.2018.6.185

Although the total number of agricultural labor force is relatively large in China, but the degree of mechanization of agricultural production is low. In addition, the problems such as hollowing of villages, farmers occupied in part job, aging of population and less educated are caused by industrialization and urbanization, all of this result in a large decrease of actual rural surplus labor force, thus the existing agricultural have been unable to meet the needs of China's development of modern agriculture (Polson & Farmer2002). Therefore, in order to feasible protect the national food security, in the year of 2012 the central number one file proposed vigorously implement new measure of cultivating new-type occupational professional farmer. Cultivating new-type occupational farmers is also the core link of balanced urbanization and sustainable agriculture, because with the further improvement of urbanization level, more rural population will enter into urban obtain employment and life, only to cultivating new-type occupational farmers, continuous improving the overall quality of agricultural labor force, can alleviate agricultural production pressure which brought agricultural labor shortages for the reason of urbanization (Hai, Gregorkiewicz, Ammerlaan & Don, 1961; Rickles *et al*.,2012)

In the course of advancing agricultural modernization construction, farmers are the key factor to realize the transformation of scientific and technical information into actual productive forces, and the essence of cultivating new-type occupational farmers is to raise the productivity of labor force which is the production factor. In order to achieve the transformation of China's agricultural development from the old normal of factor-driven to the new normal of innovation-driven, we must combine science and technology elements represented by the Internet with farmer elements, to cultivate new-type occupational farmers who are meet the needs of computer network era (Roche,1999). Action plan of computer network is to promote the depth integration of informatization, industrialization and traditional industries, further to achieve improvement of quality and efficiency and transformation and upgrading in the traditional industries (Farmer, Beard, Dauphinee, Tony & Mann, 2010).

Therefore, we should vigorously promote Internet-based cultivation of the new-type occupational farmers, improve the application level of new-type occupational farmers on the Internet, cultivating a number of "Internet + new-type occupational farmers" with the quality of good at using the network, thinking, innovation and efficiency.

The connotation and development dilemma of new-type occupational farmers

The connotation of the new-type occupational farmers

Many domestic and foreign scholars have discussed the concept of the new-type occupational farmers. Expert Zhu Zhizhen thought that the new-type occupational farmers should first to meet the four general characteristics of farmers: firstly, to occupy or use a certain amount of cultivated land for production; secondly, most of the time to carry out agricultural production; thirdly, the main source of economic is production and management of agriculture; fourth, place of residence is in rural communities (Brumby, Newell, Chandrasekaran, Calvano & Atcheson, 2014). In addition, he believed that the new-type occupational farmers should also meet the following three conditions: First, they should be the main body of market, and using of all

possible opportunities to pursuit maximize income, general with high income; Second, they should have a high stability, engaged in the agricultural production for whole life time, and can be inherited; At final, they should have a strong sense of modern concepts and social responsibility, not only understand the technology, well-educated, good at management, but also comprehend the responsibility for ecological, social, environment and future generations, as is shown in Figure 1.

Under the background of country to accelerate agricultural science innovation, the whole society to vigorously develop "computer network + agriculture", the connotation of the new-type occupational farmers should also grasp the following two transformations.

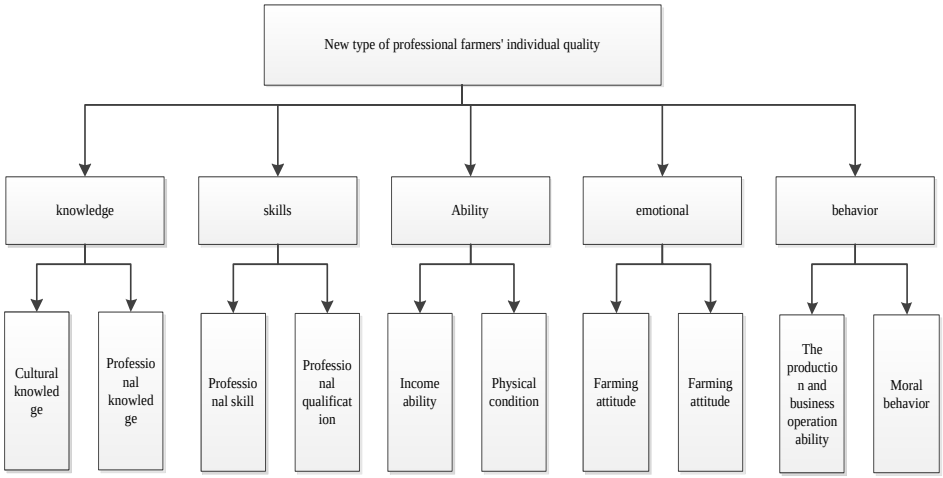

Figure 1. The quality standard system of the new type of professional farmer

Transformation of the identity farmer to occupational farmer. For a long time due to restrictions of household registration system, the traditional sense of the "farmer" represents an identity relative to the "citizen" identity, refers to a rural household population (Jungers, Guenthner, Farmer & Perkins, 2010). The new-type occupational farmers represents a kind of occupation, its purpose of agricultural production is no longer simply to maintain the livelihood, but to as the main body of the market, with sufficient mobility, and pursuit of considerable economic income.

When cultivating new-type occupational farmers, in order to realize the transformation from identity farmer to occupational farmer. On the other hand, the market shall play a decisive role in the labor force mobility, so the crowd with different career choices intention can get what they want; On the other hand, higher agricultural science and technology and management level is required for occupational farmer, not only can efficiently produce agricultural products, but also accurately grasp the market demand, to achieve maximum economic returns. To ensure and accelerate transformation of the identity farmer to occupational farmer is the main force point of the action plan of computer network to help new-type occupational farmers cultivation, with the help of computer networks to attract more outstanding human resources involved into agricultural production, at the

same time to help existing farmers to obtain the necessary agricultural professional technology. (Soliman, Macdowell, Schriever, Glasser & Schoen, 2012; Guin *et al*.,2012)

Transformation of passive change to spontaneous innovation. In the long course of history, the farmers rarely stand in the forefront of the times change, the peasant class is always being led or passive to make changes. New-type occupational farmers need to adapt to the requirements of the development of the times, can spontaneous change, not only to be able to inherit the excellent traditional agricultural culture, to adapt to China's regional characteristics, but also be able to learn new knowledge and skills, and constantly enrich themselves. The transformation of passive change to spontaneous innovation is the new demand of the new-type occupational farmers in the computer network era (shown in Figure 2). If innovation is the main theme of the computer network era, then the change is the new normal in the computer network era. Therefore, the new-type occupational farmers must be able to understand thoroughly the direction of market development, and spontaneous make a change.

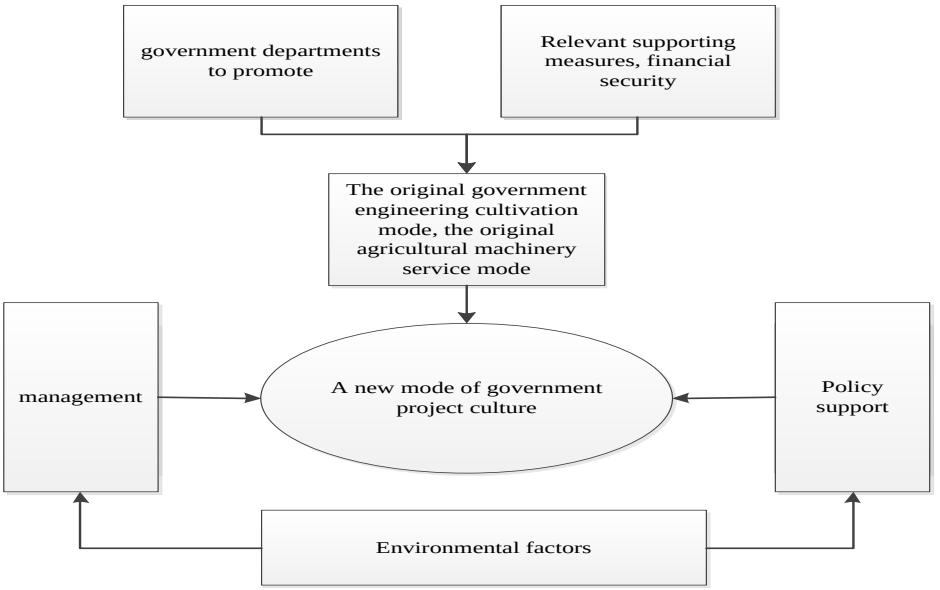

Figure 2. new government engineering model structure diagram

The dilemma of cultivating new-type occupational farmers

"Three agriculture "issue has always been the most important task of the Party and the country, and the farmers are the key to solving "Three agriculture "issue. Therefore, the exploration of improving the quality of agricultural labor has not stopped, but with the times development and changes, farmers cultivation work also have some problems.

Although conducted training activities, but still with serious urban and rural confrontation. Before the introduction of the concept of a new-type of occupational farmer, the country started the project of

vocational skills training for farmers as early as 1994—"Green Certificate Project", which aims to job training for farmers with the education level of junior and senior high schools, and cultivating a number of technical backbone who can play a leading role in the agricultural production. By the end of 2002, 1994 counties had implemented the "Green Certificate Project", trained more than 13 million farmers, of whom more than 6 million people obtained "green certificate".

Although it has been long for our country training farmers for vocational skills, meanwhile the number of trained farmers is also expanding, but more farmers are still keen to jump out of the agriculture. One of the important reasons is that the opposition of urban-rural dual structure, making the conditional farmers more inclined to enter into the city where the labor income is more lucrative, medical education is more excellent, more advanced legal awareness to settle down (Pan, 2014). With the existing of urban-rural dual structure, occupational farmers can't become an emerging occupation equally compete with practitioner of other industry, the cultivation of new-type occupational farmers can't achieve substantial achievements.

Rich in educational categories, but the lack of top-level design. The quality of agricultural labor force is the key that constraining the development of agriculture. The country has successfully implemented a series of training programs such as "Green Certificate Project", "Spark Technology Training" and "Agricultural Labor Transfer Training Sunshine Project". On the whole, China's science and technology education and training activities for farmers have achieved certain results. On the one hand, governments at all levels have attached great importance to carry out professional and technical education for farmers, the pattern of interaction between the upper and lower has been formed to promote education for occupational farmer; on the other hand, the enthusiasm of township enterprises and agricultural cooperatives to participate in training is also increasing, with incentive effect from the government , more township enterprises and agricultural cooperatives have begun to gradually participate in the education for occupational farmer (Knevel, Gussy & Farmer, 2016).

While the various types of education and training activities for farmers are developing vigorously, the problem of lacking top-level design of occupational farmer training is also exposed. Its main performance is: the system of farmers' professional training is not perfect, leading to random training activities and poor continuity, the above mentioned farmers education and training projects were organized and implemented by the Ministry of Agriculture, Ministry of Education, Poverty Alleviation Office and other a dozen ministries , The many aspects of support from country should be a good thing, but the lack of unified leadership in action; In addition, the timely mobilization of training resources is weak, in face of rapid changes in labor demand, the existing farmer professional skills training system is not able to make quick adjustment of resources and without integration mechanism of training institutions.

New opportunities of new-type occupational farmers given by computer networks

Mobile Internet, to promote urban and rural integration

The dual structure of urban and rural areas is a key factor that hinders the transformation of the traditional farmers to the new-type occupational farmers. While the widely application of mobile Internet technology has brought hope and opportunity to the destroying of the urban-rural dual structure.

The extreme asymmetry of information resources is an important cause of the opposition between urban and rural areas. Agricultural production is an industry in which natural reproduction and economic reproduction are intertwined. Therefore, natural risks, technological risks, market risks and policy risks all have a great impact on agricultural production (Bloom & Dimondi, 2017). As the asymmetry of information resources, agricultural products market often had the cases like idle capital speculation, poor product sales, or even rotten in the ground, making the farmers can't timely sell products at high prices, while suffer heavy losses at lowest price. With the accelerate popularization of the Internet in rural areas, rural areas will build a platform for sharing public information resources, form public information resources open and sharing system of physical dispersion, logical unity, in this way farmers will be able to convenient access trade information and understand the market dynamics as urban residents, so as to help them effectively reduce natural risks, reduce technical risks, forecast market risks and avoid policy risks, grasp the initiative in the market, to achieve full innovation of production and operation.

Get rid of the stale and take in the fresh, to stimulate the farmers' creativity

To refreshing Knowledge, developing specialized production. The era of computer networks to bring contemporary people is a huge amount of knowledge and information and rapid change speed, which also requires new occupational farmers to improve their ability of absorbing new knowledge and analyzing the change, then apply them to agriculture production and operation. Single isolated house agriculture model has been unable to adapt to the development of the times, it is necessary to develop more competitive and specialized cooperative production, take efforts to become township enterprise, the especial data is shown in Figure 3-5. At the same time, some new-type occupation farmers who have acquired advanced technology should establish a service-oriented enterprise oriented to large-scale agricultural production and establish an rural comprehensive service center integration of science, industry and trade, in order to overall promote the informationization process in agricultural production, and strive to enhance information service level of the production and operation, quality control and market circulation.

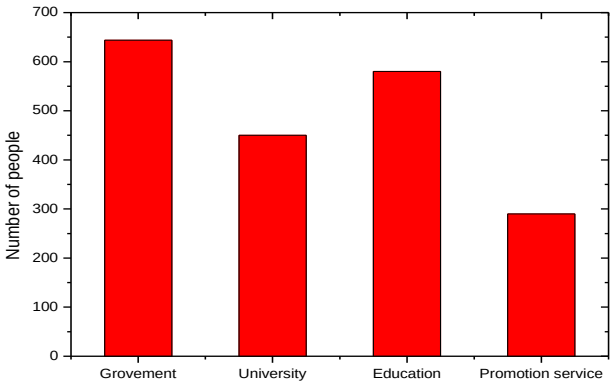

Figure 3. Farmer perception of the mode of cultivating

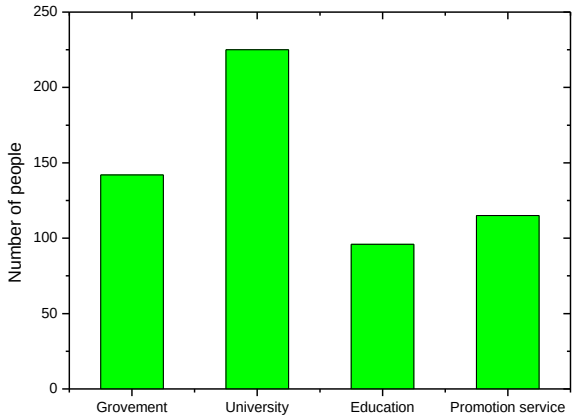

Figure 4. The degree of farmers participation to the current patterns

In the course of advancing agricultural modernization construction, farmers are the key factor to realize the transformation of scientific and technical information into actual productive forces, and the essence of cultivating new-type occupational farmers is to raise the productivity of labor force which is the production factor. In order to achieve the transformation of China's agricultural development from the old normal of factor-driven to the new normal of innovation-driven, we must combine science and technology elements represented by the Internet with farmer elements, to cultivate new-type occupational farmers who are meet the needs of computer network era. Action plan of computer network is to promote the depth integration of informatization, industrialization and traditional industries, further to achieve improvement of quality and efficiency and transformation and upgrading in the traditional industries.

Therefore, we should vigorously promote Internet-based cultivation of the new-type occupational farmers, improve the application level of new-type occupational farmers on the Internet, cultivating a number of "Internet + new-type occupational farmers" with the quality of good at using the network, thinking, innovation and efficiency.

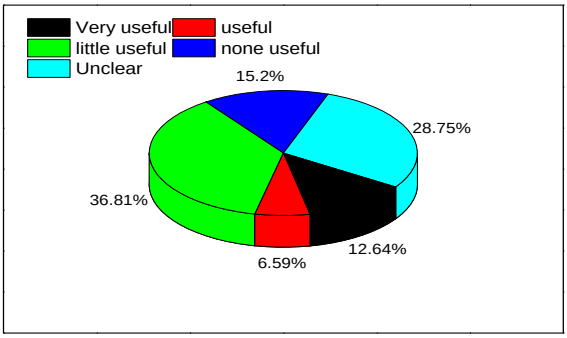

Figure 5. The role of training play in improving agricultural production capacity

Change of the times, to highlight the subjectivity of farmers

The new-type occupational farmers will be the core force of construction of a new socialist countryside, which requires not only a high level of professional skills, but also be able to act as master to participate in the exchange of all social strata. Mean while the emergence of the Internet provides a more convenient and reliable political participation platform for the majority of farmers, more farmers are still keen to jump out of the agriculture. One of the important reasons is that the opposition of urban-rural dual structure, making the conditional farmers more inclined to enter into the city where the labor income is more lucrative, medical education is more excellent, more advanced legal awareness to settle down. With the existing of urban-rural dual structure, occupational farmers can't become an emerging occupation equally compete with practitioner of other industry, the cultivation of new-type occupational farmers can't achieve substantial achievement, and provides technical support for their self-management when participation in the new socialist countryside, as is shown in Figure 6.

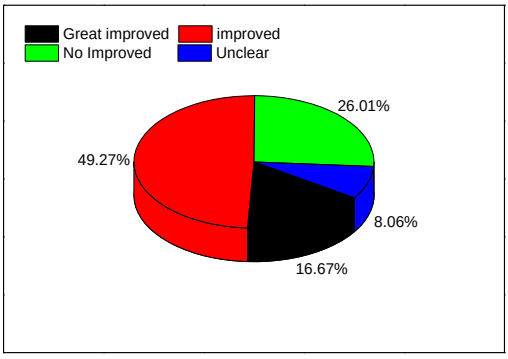

Figure 6. The role of training play in improving income

Cultivating path of new-type occupational farmers in computer network era

Optimize the cultivation ideas, to achieve self-development

We should establish a new-type occupational farmers cultivation concept that promotes agriculture, science and technology, education, and so on, formulate a long-term cultivation plan, and make efforts to increase the investment of cultivate funds for new-type occupational farmers. From the long-term development of the new-type occupational farmers cultivation system, we should not only focus on the short-term on-the-job training for individuals who are engaged in agricultural production and management, but should strive to build education chains covering basic education in rural areas, agricultural professional education and professional training of farmers. In rural basic education stage, we should stop indoctrination of "abandon agriculture" to the next generation, but help them to correctly understand agriculture and help to eliminate the resistance to agricultural

production and management; In the agricultural professional education stage, expanding the supporting to higher agricultural institutions, optimizing the professional settings, strengthening scientific research capabilities, training cutting-edge talents in the field of agricultural science and technology; In stage of the professional training of farmers, paying attention to the practical application of Internet technology, really cultivating a group new-type occupational farmers who are rooted in rural areas, with strong technology, with ahead thinking.

Perfect the cultivation policy, to help and protect the farmers

To support infrastructure, improve the network system. Survey shows that the Internet penetration rate of China's rural areas is 34.1 percentage points lower than that in urban areas, therefore, the primary task to develop cultivation of computer networks new-type occupational farmers is to increase policy support to rural information network infrastructure, to enhance the cognitive level and use level of rural population to the Internet. Secondly, it is necessary to support the development of the modern logistics industry matching with the computer network, and to build the logistics and distribution system of urban and rural full coverage and global interconnection, so as to get through the "last mile" link up small farmers and big market. Finally, it is necessary to develop large data application service technology, to achieve the deep integration of information resources and agricultural production, to improve the diversification and professional level of farmer management industry. Industrialization has already opened the distance between urban and rural areas, and the key to building a strong socialist country is in rural areas, it is necessary to make the majority of rural areas to catch up the last train of information technology, so as to clear the obstacles for development of cultivation of new-type occupational farmers in computer network era.

To regulate the network finance, boost entrepreneurship. Internet finance and e-commerce is an effective way to solve the problem of shortage of funds when new-type occupational farmers start a business. Therefore, it is necessary to speed up the development of rural Internet finance and e-commerce centre on the agricultural production, processing and marketing of rural youth entrepreneurship, to smooth agricultural network sales channels, to establish community support for agriculture and other new agricultural business mode, to improve the rural supply and marketing service network, but also to encourage development of online rental of large agricultural machinery, agricultural testing equipment, agricultural scientific research equipment and other equipment.

Update the cultivation mode, the pursuit of intensive and efficient

In the era of large data, the cultivation pattern of new-type occupational farmers must realize that teaching is adapted to individual aptitude, needs and time. The survey shows that among the groups of farmers of all ages, the network penetration rate of 10-40 year olds has the smallest difference with that of urban areas, and the proportion of farmer-workers is the highest in this strata, we should give full play to the advantages that they are familiar with both market of input place and the resources of output place, and support farmer-workers to return home for farming, so as to develop a number of leading-driven occupational farmers. Meanwhile, in

the cultivation pattern, we should pay attention to these people's online education, develop modern agriculture with the help of computer network information, to achieve effective docking of the agricultural products of output and market of input.

Conclusions

This paper proposes the development of new-type occupational farmers cultivation pattern based on computer network. Through the research and analysis, we think that urban-rural binary opposition, lack of top-level design, outdated cultivation methods are the three major obstacles for the development of new-type occupational farmers. Combining with new opportunities brought by computer networks to new-type occupational farmers, proposes that in the era of Internet, the cultivation of new-type occupational farmers should establish the cultivation idea of helping the farmers to achieve their self-development, perfect the cultivation policy of helping as well as protecting the farmers, and develop the intensive and efficient cultivation pattern.

The era of computer networks to bring contemporary people is a huge amount of knowledge and information and rapid change speed, which also requires new occupational farmers to improve their ability of absorbing new knowledge and analyzing the change, then apply them to agriculture production and operation. Single isolated house agriculture model has been unable to adapt to the development of the times, it is necessary to develop more competitive and specialized cooperative production, take efforts to become township enterprise, the especial data is shown in Figure 3-5. At the same time, some new-type occupation farmers who have acquired advanced technology should establish a service-oriented enterprise oriented to large-scale agricultural production and establish an rural comprehensive service center integration of science, industry and trade, in order to overall promote the informationization process in agricultural production, and strive to enhance information service level of the production and operation, quality control and market circulation.

References

Bloom, T. J., & Dimondi, V. P. (2017). "The farmer and the cowman should be friends": Surviving a curricular revision through interprofessional cooperation. *American Journal of Pharmaceutical Education*, *81*(7), 6426. http://dx.doi. org/10.5688/ajpe8176426

Brumby, S., Newell, M., Chandrasekaran, A., Calvano, A., & Atcheson, M. (2014). Health checks in the Saleyards—bringing the health professional to the farmer. *Journal of Agromedicine*, *19*(2), 205-205. http://dx.doi. org/10.1080/1059924X.2014.889631

Farmer, E. A., Beard, J. D., Dauphinee, W. D., Tony, L. D., & Mann, K. V. (2010). Assessing the performance of doctors in teams and systems. *Medical Education*, *36*(10), 942-948. http://dx.doi. org/10.1046/j.1365-2923.2002.01311.x

Guin, S. M., Wheat, J. R., Allinder, R. S., Fanucchi, G. J., Wiggins, O. S., & Johnson, G. J. (2012). Participatory research and service-learning among farmers, health professional students, and experts: An agromedicine approach to farm safety and health. *Journal of Agromedicine*, *17*(1), 22-29. http://dx.doi. org/10.1080/1059924X.2012.627319

Hai, P. N., Gregorkiewicz, T., Ammerlaan, C. A. J., & Don, D. T. (1961). Personal character and expectations of a professional farmer. *Agricultural History*, *35*(4), 206-206. http://dx.doi. org/10.4028/www.scientific.net/MSF.258-263.491

Jungers, E. A., Guenthner, S. T., Farmer, E. R., & Perkins, S. M. (2010). A skin cancer education initiative at a professional baseball game and results of a skin cancer survey. *International Journal of Dermatology*, *42*(7), 524-529. http://dx.doi. org/10.1046/j.1365-4362.2003.01904.x

Knevel, R., Gussy, M., & Farmer, J. (2016). Perception of Nepalese dental hygiene and dentistry students towards the dental hygienists profession. *International Journal of Dental Hygiene*, *15*(3), 1243-1244. http://dx.doi. org/10.1111/idh.12192

Pan, D. (2014). The impact of agricultural extension on farmer nutrient management behavior in Chinese rice production: A household-level analysis. *Sustainability*, *6*(10), 6644-6665.

Polson, R. G., & Farmer, E. S. (2002). Integrating the humanities in the education of health professionals: Implications for search and retrieval of information. *Nurse Education in Practice*, *2*(1), 49-54. http://dx.doi. org/10.1054/nepr.2002.0046

Rickles, N. M., Maclean, L. G., Hess, K., Farmer, K. C., Yurkon, A. M., & Ha, C. C., Schwartzman, E., Law, A. L., Milani, P. A., Trotta K., Labella, S. R., Designor, R. J. (2012). Teaching medication adherence in us colleges and schools of pharmacy. *American Journal of Pharmaceutical Education*, *76*(5), 79. http://dx.doi. org/10.5688/ajpe76579

Roche, L. (1999). The professional forester and the farmer: one man's experience. *International Forestry Review*, *1*(2), 112-114.

Soliman, S. R., Macdowell, M., Schriever, A. E., Glasser, M., & Schoen M. D. (2012). An interprofessional rural health education program. *American Journal of Pharmaceutical Education*, *76*(10), 199. http://dx.doi. org/10.5688/ajpe7610199