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Factor Condition of Animal Science Farms in Institutes of Vocational in Agriculture of Northeastern Region, Thailand

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This study aimed to explore general conditions of teachers taking care of animal science farms, Faculty of animal Science in 10 Colleges of Agriculture and Technology in northeastern Thailand which were under the supervision of Institute of Vocational in Agriculture. These teachers were obtained by purposive sampling consisting of 42 out of 86 persons. A set of questionnaires was used for data collection administered with the sample group. Obtained data were analyzed by using percentage, mean, and standard deviation. Besides, Scheffe test and t-test were employed in this study. Results of the study were as follows:

.1Most of the respondents (69.05%) were males, more than 50 years old (42.86%) and 20 years of service (54.76%). More than one-half of the respondents (54.76%) had a specialist position with an average salary of 34,893.09 baht together with other income for 7,066.66 baht on average. The highest educational attainment was bachelor's degree (71.43%). Their normal teaching load was 19.50 hours/week and their extra class was 9.90 hours per week on average.

.2Based on factor condition of animal science farms in 10 Colleges of Agriculture and Technology in northern Thailand based on 9 aspects, as a whole, it was found at a moderate level) μ .(2.91 = Based on it details, 8 aspects were found at a moderate level: 1) water source and irrigational system on the farm; 2 (marketing and yield selling; (3area and soil; 4) farm managerial administration; (5 personnel and workforce; structures; 6) dtructure; 7) animal breeds/plant varities/materials; and 8(capital/budgets .However, tools/farm equipment was found at a low level.

3. Regarding the comparison of factor conditions of the animal science farms and general conditions of the respondents, the following were found:

3.1As a whole, there was no statistically significant difference between age of the respondent and the level of their opinions about factor conditions of the animal science farms. Based on its details, it was found that there was statistically significant difference at 0.05 between age of the respondents and factor condition on capital and budget. Based on Scheffe test, it was found that the respondents who were less than 41 years old had different opinions about factor conditions for those who were 41-50 years old.

3.2As a whole, there was no statistically significant difference between teaching

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experience of the respondents and their level of opinions about facto conditions. Based on its details, it was found that there was statistically significant difference at 0.05 between teaching experience and factor conditions. Based on Scheffe test, it was found that the respondents who had less than 11 years of teaching experience had different opinions from these who had teaching experience between 11-20 years. Besides, there were different opinions in terms of factor conditions and personnel/workforce.

3.3As a whole, there was no statistically significant difference between teaching load of the respondents and the level of opinions about factor conditions of the animal science farms. Based on its details, it was found that there was statistically significant difference at 0.05 between teaching load of the respondents and factor conditions of the farm on water source and the irrigational system on the farms. Regarding on Scheffe test based on age interval, it was found that there was difference the respondents having extra teaching load for less than 11 hours per week and there having teaching load for 11 hours and above per week.

Key words: Problem conditions of Animal Science farm, teachers taking care of the farm, College of agriculture and technology, Institute of Vocational Agriculture

Introduction

The management of agricultural education is essential and a basis for the country development since agriculture and other occupations related to farming are main occupations of people in Thailand which account for more than 60 percent (The National Workforce Data Center, 2015). Both government and private sectors facilitate agricultural education covering various levels of curricular programs. Ten agricultural vocation institutes in northeastern Thailand offer agricultural courses to student for a long time, both in vocational and higher vocational certificate level. This aims to produce skillful workforce to meet needs of workforce market which is consistent with the social and economic conditions. Thus, teaching and learning in agricultural education focuses on actual practice (learning by doing). Farm tasks are therefore essential for the facilitation of agricultural education in schools. It is the center of agricultural profession experience which can generate incomes for products selling, product processing, and academic services. Besides, it maintains arts and culture and good relationships towards the organization and the community. This is in the form of training and appropriate technology transfer on plant and animal domestication. Thus, the community becomes to be a learning source having a systematic working system with correct data which can response to mission of the college of Agriculture and Technology. This conforms to Noppawan (1789) who claimed that the farm project in a school in very important in the teaching /learning facilitation of agricultural education. In fact, farm tasks aims to make students have an opportunity to practice in the actual situation. Therefore, the actual experience practice is like a tool assisting students learning and teacher teaching. This is particularly on livestock tasks in

a school as a source of demonstration farm or commercial farm which needs close care-taking. The institutes of Vocational in Agriculture in northeastern Thailand had different livestock farms. According to a report of Animal Science Teacher Profession Club (2013), it was found that tasks of livestock farms in agricultural vocation schools in Thailand are still not developed to meet standards and there is a tendency to have a decrease in production. To develop tasks of animal science farms so as to be a learning source of students it needs to investigate and assess farm condition. This aims to be a guideline for the development of farm to meet standards in order to cope with technological change and sustainable development.

Objectives of the Study

Specifically, the objectives of this study were to:

1. Explore factor condition of animal science farms based on opinions of teachers taking care of the farms, Institute of Vocational in Agriculture, northeastern Thailand and
2. Compare factor condition of the animal science famers in Institute of Vocational Agriculture, northeastern Thailand.

Scope and Delimitation of the Study

1. Populations in this study were 42 teachers taking care of animal science farms from 10 College of Agriculture and Technology in northeastern Thailand: Khonkaen, Chaiyaphum, Nakhon Ratchsrima, Burirum, Mahasarakham, Roi-Et, Srisaket, Yasothorn, Udonthani, and Ubon Rachathani Colleges of Agriculture and Technology and 86 teachers of the Faculty of Animal Science.
2. Variables in this study

- Independent variables included socio-economic attributes of the sample group: sex, age, educational attainment, major field of study, years of service, agricultural teaching experience, current position, salary, and a number of teaching hours (office hours and non-office hours).

- Dependent variables included factor condition of animal science farms in Institutes of Vocational in Agriculture, northeastern Thailand: area/soil, water source/irrigational system, structure, tool/equipment, breed, forage plant, farm management, marketing/yield selling, personnel/workforce, and capital/budget.

3. Time span for data collection September-October, 2015 (2 months). Data were collected from teacher taking –care of animal science farms in the said 10 colleges.

Conceptual Framework

Independent Variables	Dependent Variables
Socio-economic Characteristics of resporndents - Sex - Age - Educational attainment - Major field of study - Years of service - Salary - Agricultural teaching experience - Current position - teaching load per week (extra hours)	**Factor condition of animal science farms** - Area/soil - Water source/irrigational system - Structures - Tools/equipment - Plant/varieties/animal breeds - Administration/farm management - Marketing/yield selling - Personnel/workforce - Capital/budgets

Research Methodology

1. This study employed a survey research administered with 42 teachers taking care of the animal science farms in school year of 2015. There were 48.83 perecntage of 86 teachers of the Faculty of Animal Science in 10 Colleges of Agriculture and Technology, northeastern Thailand.

2. A set of 5-rating scale questionnaires was used for data collection administered with 42 teachers taking care of the animal science farms of the Faculty of Animal Science, 10 Colleges of Agriculture and Technology, northeastern Thailand. The questionnaire was proposed to 5 scholars to check correctness and consistency (IOC = 0.94).

3. The interpretations of a level of factor condition based on opinions of the respondents were as follows:

5 = A highest level of needs
4 = A high level of needs
3 = A moderate level of needs
2 = A low level of needs
1 = A lowest level of needs

The assessment criteria were as follows: (Patthiyathanee, 1998: pp.37-53)

4.50-5.00 = A highest level of needs
3.50-4.49 = A high level of needs
2.50-3.49 = A moderate level of needs
1.50-2.49 = A low level of needs

1.00-1.49 = A lowest level of needs

4. Data analyses. Content analysis and data were analyzed by using the Statistical Package (percentage, mean, and standard deviation). Scheffe test and f-test were also employed.

Results of the Study

1. Socio-economic characteristics of the respondents revealed that most of the respondents (69.05%) were male, more than 50 years old (42.86%), and married (66.67%). More than one-half of the respondents had more than 20 years of service and agricultural teaching experience (52.38 and 57.76%), respectively). More than one-half of the respondents (54.76%) held specialist level 3 position about one-third of the respondents (35.71%) had more than 40,000 baht of salary. More than one-half of the respondents (57.14%) were bachelor's degree holders and most of the respondents (71.43%) majored in Animal Science. Less than one-half of the respondents (40.48%) had a normal teaching load for 16-20 hours per week (19.50 hours on average) and extra teaching load for 9.90 hours per week on average.

2. Factor condition of the animal science farms in the 10 Colleges of Agriculture and technology, northeastern Thailand were show in table 1-3.

Table 1. Types of animal science farms which were taken care by the teachers.

Item	**N = 42**	**%**
- Meat-type chicken farm	13	30.95
- Dairy cattle farm	8	19.05
- Beef Cattle Farm	8	19.05
- Pastoral area	8	19.5
- Egg-type chicken farm	7	16.67
- Sheep/goat farm	3	7.14
- Swine farm	2	4.76
- Mixed farming/New Theory farming	2	4.76
- Other	9	21.43

Table 2 .Factor condition of animal science farms in the 10 Colleges of Agriculture and Technology, northeastern Thailand.

Item	Condition		
	μ	S.D.	Description
.1Area/soil			
1.1Fertility/appropriate quality	3.30	0.89	Moderate
1.2Adequacy and appropriateness	3.26	1.10	Moderate
1.3Fence/clear scope	2.92	1.15	Moderate
1.4Safety	3.00	1.18	Moderate
.2Water source/irrigational system			
2.1Adequacy/appropriate with needs	3.30	0.97	Moderate
2.2Water quality	3.26	1.06	Moderate
.3Structure			
3.1Adequacy	3.28	1.06	Moderate
3.2Good quality/appropriateness	2.40	0.91	Low
3.3Clean/sanitary	2.78	1.00	Moderate
3.4Adequate light	3.14	1.11	Moderate
.4Tool/equipment			
4.1Amount/adequacy	2.57	0.99	Moderate
4.2Good quality/not damaged	2.14	0.78	Low
4.3Systematic keeping place	2.52	1.04	Moderate
4.4 Modern	2.00	0.88	Low
4.5 Convenience in using	2.33	0.97	Moderate
.5Animal breed/plant varieties/material			
5.1Adequacy	2.78	1.09	Moderate
5.2Good quality and appropriate	2.71	1.19	Moderate
5.3Appropriateness and good quality of forage plant	2.85	1.04	Moderate
5.4Adequate materials and chemical supplies	2.64	0.90	Moderate
5.5Appropriateness and good quality of materials and chemical supplies	2.69	0.99	Moderate
.6Personnel/workforce			
6.1An adequate numbers of teachers taking care of the farm	3.11	1.15	Moderate
6.2An adequate numbers of personnel/workforce	2.69	1.23	Moderate
6.3Personnel/workforce are knowledgeable	3.23	1.00	Moderate
6.4Personnel/workforce can transfer knowledge and experience to students and have good academic service	2.83	1.10	Moderate
6.5Personnel/workforce are friendly	3.66	1.05	High
6.6The farms are well promoted and supported by concerned personnel of the college	2.73	1.12	Moderate
6.7The farms are well promoted and supported by students	3.26	1.21	Moderate
6.8the farms are promoted and supported by outside agencies	2.73	1.03	Moderate

Table 2 .Continued

Item	Condition		
	μ	S.D.	Description
.7Capital/budgets 7.1Adequacy and appropriateness of the capital/budgets	2.64	1.05	Moderate
7.2Budget support from outside agencies	2.04	1.01	low
7.3Convenience in disbursement	2.76	1.07	Moderate
7.4Budgeting for education and training for students and academic service	2.66	0.95	Moderate
7.5Having budgets for farm business	2.83	1.10	Moderate
.8Administration/farm management 8.1Independence on farm management	3.45	1.15	Moderate
8.2College administrators participate in farm activities	2.88	1.06	Moderate
8.3Faculty administrators participate in farm activities	3.40	1.08	Moderate
8.4Farm administration and management is in accordance with academic principles	3.47	1.01	Moderate
8.5Farm administration and management has a rather how level of problems	3.07	0.94	Moderate
8.6Farm business earns profits at a satisfactory level	2.80	1.04	Moderate
8.7Goof management of farm incomes/expenses	3.23	0.93	Moderate
8.8Students are interested in the farm and farm business	3.71	0.89	High
8.9As a whole, the animal science farms have a good farm management system.	3.16	0.90	Moderate
8.10The system of data filing, farm task statistics, and farm practice record	2.80	0.91	Moderate
8.11People or the community are interested in the farm and farm business	3.02	1.02	Moderate
.9Marketing/yield selling 9.1There is a market in the college selling farm products.	3.30	1.04	Moderate
9.2There is a local market for farm product selling.	3.16	0.96	Moderate
9.3There is a market in the town for farm product selling.	2.85	1.13	Moderate
9.4You are ready for farm product selling with high liquidity.	3.14	1.00	Moderate
9.5Farm committee for farm product selling.	3.00	1.20	Moderate

Table .3 Details of factor condition of the animal science farm in the 10 College of Agriculture and Technology, Northeastern Thailand**.**

Item	**Condition**		
	μ	**S.D.**	**Description**
.1Area/soil	3.12	0.85	Moderate
.2Water source/irrigational system	3.28	0.93	Moderate
.3Structure	2.90	0.81	Moderate
.4Tool/equipment	2.31	0.79	Low
.5Animal breed/plant varieties/materials	2.73	0.90	Moderate
.6Personnel/workforce	3.03	0.81	Moderate
.7Capital/budgets	2.59	0.82	Moderate
.8Farm administration and management	3.09	0.86	Moderate
.9Marketing/yield selling	3.18	0.69	Moderate
Total (Average)	**2.91**	**0.62**	**Moderate**

.3Comparison of factor condition of the animal science farms and socio-economic attributes of teachers taking care of the farms.

Table .4 Comparison of factor condition and age of the teachers taking care of the farms.

Needs	**Age**			**F**	**Sig.**	**Scheffe**
	Less than 41 years	**41-50 years**	**More than 50 years**			
.1Area/soil	3.36	3.09	3.00	0.61	0.54	-
.2Water source/...	3.50	3.30	3.13	0.49	0.61	-
.3Structure	3.20	2.59	2.94	1.76	0.18	-
.4Tool/equipment	2.61	2.04	2.32	1.57	0.22	-
.5Animal breed/...	3.00	2.44	2.78	1.18	0.31	-
.6Personnel/workforce	3.37	2.87	2.94	1.34	0.27	-
.7Capital/budgets	3.09	2.30	2.48	3.27	0.04*	Less than 41 year *41-50 years
.8Farm administration and management	3.33	3.06	3.18	0.41	0.66	-
.9Marketing/yield selling	3.20	2.75	3.27	1.55	0.22	-
Total (Average)	**3.18**	**1.72**	**2.89**	**1.73**	**0.19**	**-**

* Statistically significant difference at0.05

Total 5. A comparison of agricultural teaching experience.

Needs	Agricultural teaching experience			F	Sig.	Scheffe
	Less than 11 years	11-20 years	More than 20 years			
.1Area/soil	3.30	2.91	3.13	0.46	0.63	-
.2Water source/....	3.50	3.33	3.17	0.42	0.65	-
.3Structure	3.10	2.58	2.94	1.02	0.37	-
.4Tool/equipment	2.56	2.02	2.32	1.08	0.34	-
.5Animal breed/....	2.90	2.35	2.81	1.06	0.35	-
.6Personnel/workforce	3.45	2.58	3.03	2.95	0.06	Less than 11 years *11-20 years
.7Capital/budgets	3.12	2.17	2.52	3.73	0.03*	Less than 11 years *11-20 years
.8Farm administration and management	3.26	3.13	3.17	0.09	0.91	-
.9Marketing/yield selling	3.16	2.93	3.13	0.19	0.82	-
Total (Average)	**3.15**	**2.67**	**2.91**	**1.43**	**0.25**	**-**

* Statistically significant difference at0.05

Table 6. A comparison of hours of teaching load per week (extra hours).

Needs	A number of hours of teaching load per week (Extra hours)			F	Sig.	Scheffe
	None	Less than 11	More than 11			
.1Area/soil	3.25	2.78	2.75	1.28	0.28	-
.2Water source/irrigational system	3.33	2.64	4.00	3.15	0.05*	Less than 11* More than 11
.3Structure	2.88	2.64	3.50	1.47	0.24	-
.4Tool/equipment	2.38	1.82	2.65	1.83	0.17	-
.5Animal breed/plant varieties/materials	2.85	2.17	2.80	1.73	0.19	-
.6Personnel/workforce	3.00	3.10	3.12	0.06	0.93	-
.7Capital/budgets	2.60	2.48	2.65	0.07	0.93	-
.8Farm administration and management	3.27	2.75	3.22	1.71	0.19	-
.9Marketing/yield selling	3.03	3.31	3.20	0.32	0.72	-
Total (Average)	2.96	2.63	3.10	0.95	0.39	-

* Statistically significant difference at0.05

Discussion

According to results of the study, it was found that most of the respondents (69.05%) were male, level 3 specialists (54.76%), and more than 50 years old (42.86%). More than one-half of the respondents (54.76%) had more than 20 years of service. Most of the respondents (71.43%) were bachelor's degree holders. This might be because most of the respondents are old so they do not want to pursue study. Besides, their total teaching load was 29.40 hours per week which is a heavy teaching load.

The animal science farm in the 10 Colleges of Agriculture and technology is focused on meat-type chicken and followed by other farms such as aqua-culture, ostrich, dairy cattle, beef cattle, pastoral plot, egg-type chicken, sheep, goat, pig, and mixed farming/New Theory agriculture, respectively. It can be seen that the 10 Colleges of Agriculture and Technology have diverse animal science farms in which the teachers taking care of the farms are skillful in the specific aspect and are assigned to be responsible for the farm which they and skillful. Some of the teachers are assigned to be responsible for more than 1 farm which is a heavy task. However, most of them still teach at their college because they love teaching profession and want to stay with their family. This conforms to a study of Siriwan et.al. which found that teachers at College of Agriculture and Technology are satisfied with their tasks and they want to teach at the college until retiring.

As a whole, it was found that the teachers taking care of the animal science farms had opinions about factor condition of the farms at a moderate level. Based on its details, it was found that there are 7 factors found at a moderate level: water source/irrigational system, farm administration and management, area/soil, marketing/yield sell, personnel/workforce, structures, animal breeds, plant varieties, and material. However, fertility and appropriate quality was found at a high level. This is because the 10 Colleges of Agriculture and Technology have a big land area suitable for farming (Panyakhom, 2014). For farm structures it was found to have a low level of quality and appropriateness. This might be because the farm in some colleges are old and lack of improvement. This conforms to the Animal Science Profession club (2013) which reported that equipment, pens, and stables on the farms of College of Agriculture and technology are old, inadequate, and inoperable.

Findings also showed that there was a low level in terms of capital/budgets and tools/equipment. This might be because the budget allocations of these factors are inadequate which is unlike livestock farms of private companies. This conforms to a study of Panyakhom et.al. (2013) which found that students have a moderate level of satisfaction with farm tools and equipment of their

college. They suggested that the college should improve or support modern tools and equipment of college's farm.

Regarding a comparison of opinions about factor condition of the animal science farms and age of the teachers risible for care-taking of the farms, it was found that, as a whole, there is no statistically significant difference. Based on its details, however, it was found that age of the teachers taking care of the animal science farm had statistically significant difference from the factor condition in terms of capital/budgets. According to the Scheffe test, it was found that the teachers taking care of the animal science farms who are less than 41 years old have different opinions about those who are 41-50 years old. This might be because the former group is younger than the latter groups. They perceived that even though the capital/budgets allocation is not enough but it might be because they have short time experience in farm operation.

Regarding a comparison of opinions about factor condition of the animal science farms and experience in agriculture teaching of the teachers responsible for farm care-taking, it was found that, as a whole, there is no statistically significant difference. Based on its details, it was found that experience in agricultural teaching of the teachers responsible for farm care-taking has statistically significant difference at 0.05 from factor condition in terms of capital/budgets. For a comparison of an age interval by using the Scheffe test, it was found that the teachers responsible for farm care-taking have teaching experience for less than 11 years have different opinions about factor condition of the animal science farms from those who have teaching experience for 11-20 years. This might be because the teachers having 11-20 years of teaching experience also use the animal science arms as a teaching/learning tool. The teachers have been engaging in the animal science farms for a long time so they attempt to develop it as much as they can. In addition, their opinions about inadequate capital/budgets for farm operation are different from those having less teaching experience than them.

Regarding a comparison of opinion about factor condition of the animal science farm and a number of teaching load hours (extra hours) of the teachers responsible for farm care-taking, it was found that, as a whole, there is no statistically significant difference in terms of their opinions. Based on its details, it was found that there is statistically significant difference at 0.05 between a number of teaching loads extra hours of the teachers responsible for farm care-taking and factor condition of the animal science farms based on water source/irrigational system. On the basis of Scheffe test, it was found that the teachers responsible for farm care-taking having a teaching load (extra hours) less than 11 hours per week have different opinions form those having teaching load of more than 12 hours per week. This might be because the

teachers responsible for farm care-taking have less teaching load (extra hours) and experience in farm care-taking. Meanwhile, the teachers responsible for farm care-taking who have more teaching load (extra hours) need to spend the time continually on the farms. This conforms to a report of Siriwan (2013) on opinion about factor condition of a farm in terms of water source and irrigational system that it is an important factor for animal science farm operation. This is because all farm activities need water for farming.

Suggestions

Based on result of the study, the following should be done:

1. The College of Agriculture and Technology put the importance on animal science farm support and promotion for effective and successful teaching/learning on the basis of actual practice.
2. Clearly determine the policy of animal science farm development both farm for education and farm for business which are beneficial as a sustainable learning source and an income generating source.
3. Adequate budget allocation for effective and continual animal science farm operation.
4. Reduce the task aside from teaching of the teachers responsible for farm care-taking so that they will be able to work for the time effectively.
5. Find personnel to replace the teachers responsible for farm care-taking who are going to retire.
6. Improve farm structures, tools, materials, and equipment for effective and appropriate farm operation.

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