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COMPETENCIES NEEDED BY MALES ENGAGED IN DAIRY FARMING

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COMPETENCIES NEEDED BY MALES ENGAGED IN DAIRY FARMING

by

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Purpose of the Study

The purposes of the study were: (1) to determine the competencies needed by men engaged and successful in dairy farming, (2) to determine the relation of farm background, age, years in dairying, educational level attained, years of vocational agriculture, post high school training in dairying, size of herd, size of farm, and type of dairy product produced to the evaluation of the degree of competence needed and possessed by a selected sample of DHIA and owner sampler dairymen in Iowa, and (3) to plan for educational needs of future replacement dairy farmers.

Method of Procedure

In this study 16 carefully selected dairymen served as a panel of specialists in developing a list of competencies needed by males engaged in dairy farming. The list of competencies was used on a questionnaire which was submitted to a random sample of 130 DHIA and 130 owner sampler dairymen in Iowa. Those dairymen were asked to evaluate the degree of competency they needed to succeed, and the degree of competency they presently possessed. Usable questionnaires were received from 91 DHIA and 91 owner sampler dairymen.

Findings

Of the number of competencies selected by the panel of specialists, 11 were understandings, and 35 were abilities. Degree needed mean scores of 3.0 or higher (much competence needed) were indicated by both DHIA and owner sampler dairymen for the understandings of physical appearance of profitable dairy animals; of methods of maintaining high sanitation standards and the use of chemicals in this operation; of internal organs and their functions in dairy animals; of dairy product standards set by law and by the local milk market; and of sources of financial help in establishing and maintaining a dairy herd.

Degree possessed mean scores of 2.8 or higher (between some and much competence possessed) were indicated by either the DHIA or owner sampler group for the understandings of physical appearance of profitable dairy animals; of methods of maintaining high sanitation standards and the use of chemicals in this operation; of the physiological process of how a cow lets down her milk; and of stanchion barn, free stall, and other housing systems as is shown in Table 1. A difference of .6 existed between overall mean scores for understandings needed and possessed for both DHIA and owner sampler dairymen.

Degree needed mean scores of 3.3 or higher (more than much competence needed) were indicated by both DHIA and owner sampler dairymen for the abilities to make efficient use of high quality roughage; to keep production records on all animals and cull the less profitable cows; to use milking equipment correctly

Table 1. DHIA and owner sampler evaluations of degree agricultural competencies were needed and possessed

Competencies	Mean scores			
	DHIA		Owner sampler	
	Needed ^a	Possessed ^b	Needed ^a	Possessed ^b
Understanding of:	N=91		N=91	
Trends in dairy product demand as they affect local markets for producers milk	2.9	2.1	2.8	2.1
Competition from substitutes for dairy products	2.8	2.1	2.9	2.2
Federal price support programs affecting dairy product markets	2.9	2.2	2.8	2.0
Dairy product standards set by law and by the local milk market	3.2	2.6	3.3	2.5
Butterfat and solids and fat testing procedures	2.6	2.3	2.7	2.0
Physical appearance of profitable dairy animals	3.4	3.0	3.1	2.8
Methods of maintaining high sanitation standards and the use of chemicals in this operation	3.5	2.8	3.4	2.7
Physiological process of how a cow lets down her milk	3.1	2.7	3.2	2.8
Sources of financial help in establishing and maintaining a dairy herd	3.0	2.5	3.1	2.6
Stanchion barn, free stall, and other housing systems	3.0	2.8	3.0	2.6
Internal organs and their functions in dairy animals	3.2	2.3	3.0	2.3
Overall mean score for understandings	3.1	2.5	3.0	2.4
Ability to:				
Feed cows a balanced ration based on maintenance and production needs	3.6	3.0	3.7	2.8
Make efficient use of high quality roughage. (Hay, silage, pasture)	3.6	3.0	3.6	2.9
Select or produce and store enough high quality dairy feeds	3.4	3.1	3.4	2.8
Plan an adequate ration and feed dry cows	3.8	2.7	3.4	2.6
Determine the amount and kind of concentrate to feed, considering dairy product prices and input (feed, labor, etc.) costs.	3.5	2.8	3.5	2.5

^a4=very much competence needed, 3=much competence needed, 2=some competence needed, 1=little competence needed, 0=no competence needed.

^b4=possess very much competence, 3=possess much competence, 2=possess some competence, 1=possess little competence, 0=possess no competence.

Table 1 continued.

Competencies	Mean scores			
	DHIA		Owner sampler	
	Needed	Possessed	Needed	Possessed
Ability to:	N=91		N=91	
Feed and care for the cow and calf at calving	3.4	3.0	3.3	2.8
Manage properly and adequately feed the calf and herd replacements	3.4	2.8	3.2	2.5
Plan an adequate ration and feed the herd sire	2.8	2.5	2.4	1.7
Provide an adequate water supply	3.2	3.3	2.9	3.1
Maintain and renovate high quality pastures	3.2	2.8	3.0	2.6
Select desirable production and breeding stock and follow a constructive breeding program	3.7	2.8	3.5	2.8
Plan breeding programs for even milk production throughout the year or for higher market price periods	3.3	2.7	3.1	2.6
Assist in the delivery of a calf	3.1	2.9	3.0	2.9
Detect cows in heat	3.3	3.1	3.3	3.0
Keep production records of animals	3.3	3.0	3.2	2.9
Make efficient use of labor and equipment	3.3	2.9	3.4	2.7
Provide adequate and economical stanchion, free stall, or other housing systems	3.0	2.8	3.0	2.7
Provide economical but adequate fencing	2.7	2.9	2.6	2.5
Use antibiotics and medications correctly in treating minor health problems	3.4	2.9	3.3	2.5
Use a strip cup to detect abnormal milk	2.7	2.1	2.7	2.4
Keep health records on animals	2.9	2.4	2.8	2.2
Recognize and treat or prevent diseases and parasites in cooperation with a veterinarian	3.4	2.9	3.5	2.6
Fit dairy operations into the whole farm management system as affected by markets and prices	3.3	2.7	3.0	2.5
Budget available resources (money, land, labor) into the use returning the highest final profit	3.4	2.6	3.4	2.4
Follow production practices conducive to the profitable production of high quality milk	3.5	2.8	3.2	2.6
Dehorn calves and remove extra teats from dairy heifers	2.9	2.6	2.7	2.4
Keep production records on all animals and cull the less profitable cows	3.5	3.3	3.4	2.9

Table 1 continued.

Competencies	Mean scores			
	DHIA		Owner sampler	
	Needed	Possessed	Needed	Possessed
Ability to:	N=91		N=91	
Trim animal feet when needed	2.8	2.4	2.6	2.0
Clip the underline, udder, and rear flank of cows in production	2.6	2.4	2.4	1.9
Use milking equipment correctly and keep it in good operating condition	3.5	3.0	3.4	3.0
Select the best method of marketing and market outlet	3.1	2.5	3.2	2.4
Practice gentle handling of dairy animals	3.4	3.0	3.3	2.8
Decide whether to raise or purchase herd replacements	3.0	2.9	3.0	2.6
Work with groups to promote dairy products	2.8	2.2	2.8	2.0
Maintain an adequate system of ear tagging, tattooing, etc, for identification purposes	3.3	3.2	2.8	2.9
Overall mean score for abilities	3.2	2.8	3.1	2.6
Total overall mean score	3.2	2.7	3.1	2.5

and keep it in good operating condition; to feed cows a balanced ration based on maintenance and production needs; to plan an adequate ration and feed dry cows; to determine the amount and kind of concentrate to feed, considering dairy product prices and input costs; to select desirable production and breeding stock and follow a constructive breeding program; to recognize and treat or prevent diseases and parasites in cooperation with a veterinarian; and to follow production practices conducive to the profitable production of high quality milk.

When degree possessed mean scores for abilities for DHIA and owner sampler dairymen were averaged, scores of 3.0 or higher (much competence possessed) were indicated for the abilities to make efficient use of high quality roughage, to keep production records on all animals and cull the less profitable cows, to use milking equipment correctly and keep it in good operating condition, to select or produce and store enough high quality dairy feeds, to provide an adequate water supply, to keep production records on all animals and cull the less profitable cows, detect cows in heat, and to maintain an adequate system of ear tagging, tattooing, etc. for identification purposes. A difference of .4 existed between the overall mean scores for the abilities needed and possessed by DHIA dairymen, and a difference of .5 in scores for owner sampler dairymen also shown in Table 1. A difference of .5 existed between total overall mean scores for competencies needed and possessed by DHIA dairymen, and a difference of .6 in scores for owner sampler dairymen.

DHIA and owner sampler dairymen both felt they possessed more competency than needed for the ability to provide adequate water supply. DHIA dairymen also felt they possessed more competency than needed for the ability to provide economical but adequate fencing. Owner sampler dairymen felt they possessed more competency than needed for the ability to maintain an adequate system of ear tagging, tattooing, etc. for identification purposes.

Comparisons among groups showed the following differences between total overall mean scores for competency needed and possessed. (1) Younger dairymen had wider differences than older dairymen. (2) Dairymen with fewer years of experience had wider differences than those with more experience. (3) DHIA dairymen had wider differences for men with less formal education, whereas owner sampler dairymen had wider differences for those with more formal education. (4) Increased years of vocational agriculture tended to widen the differences. (5) Men who had not had training in dairying in college, or non-college credit courses, or in young farmer or adult evening classes had wider differences than those who had had such training. (6) Smaller herd size tended to widen the differences. (7) Increased farm size tended to widen the differences. (8) Manufacturing milk producers had wider differences than grade A producers.

Correlations were found between age and years of experience in dairying (+) and age and years of vocational agriculture (-). There was no significant correlation between the control factors and the degree competency needed scores for the 10 selected competencies. Age (+) and years of vocational agriculture (-) were significantly correlated with the ability to efficiently feed dairy cattle. Years of vocational agriculture was negatively correlated with the ability to maintain high sanitation standards.

There seemed to be a high positive correlation between the abilities needed to efficiently feed and constructively breed dairy cattle. Nearly all the correlations of ability needed with ability needed scores for other competencies and of ability possessed with ability possessed scores for other competencies were positive and significant at the 1 percent level.

There were at least 46 competencies necessary for success in dairying. The members of the DHIA and owner sampler record associations in the sample felt they possessed significantly less competency than they needed in the 46 competencies included, (.5 difference for DHIA and .6 difference for owner sampler dairymen between total overall mean scores for competency needed and possessed).

Implications

These 46 competencies have significant importance in planning training programs for present and prospective dairymen. They should form the basis for dairy instruction in vocational agriculture classes for high school boys, young farmers and adults, in the cooperative agriculture extension program in area vocational schools, and in the College of Agriculture resident instructional program.

These competencies should be emphasized in providing in-service training for present dairymen, as well as for training of prospective dairymen. In-service training should be offered specifically in vocational agriculture departments, in the cooperative agriculture extension program, and in area vocational-technical schools. This training would greatly improve the efficiency of dairymen, the quality of dairy products produced, and amount and quality of dairy products available to consumers.

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