NORMAN

National Cooperative Dairy Herd Improvement Program

RECORD BOOK

A plan for every size herd

STANDARD DHIA OWNER SAMPLER WEIGH-A-DAY-A-MONTH

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DHIA FACTORS FOR PROJECTING INCOMPLETE RECORDS TO 305 DAYS 1/

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The DHIA 305-day projection factors shown on the following pages were derived and are being used by USDA to project incomplete DHIA lactation records to a 305-day basis. This procedure became effective July 1, 1965, and is used in USDA sire and cow evaluation to standardize records for days in milk.

These DHIA projection factors are based on a total of 162,191 DHIA lactations and are a result of the combination of previously reported milk factors from Michigan (3) 2/ and DHIA test-day data made available by the Iowa Processing Center. An earlier set of projection factors from Michigan (4) was also used as an aid in developing milk-fat factors for the Guernsey and Holstein breeds.

Only incomplete records are projected or extended to a

1/ Some of the material used in developing these factors were from Michigan DHIA data and were provided by Dr. L. D. McGilliard. The authors also wish to acknowledge his advice and counsel on methodology used in developing these projection factors. The remaining data used were provided by the Iowa Processing Center.

2/ Underscored figures in parentheses identify references listed on page 3.

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305-day basis by the USDA. They are defined as those reported to the USDA with CAR (conditions affecting records) codes of 2, 3, and 8, with days in milk less than 305 and greater than 14. Records reported with CAR codes of 0, 4, 5, 6, and 7 are considered as complete, are not projected, and are used in sire and cow evaluations if days in milk range from 180 to 305 days. They are not used if days in milk are less than 180. Records reported with CAR codes of 1 and 9 are currently deleted from sire and cow evaluations. Future plans by cooperating States and USDA are to exclude records made and reported with production estimated for 2 or more months, regardless of CAR code.

The CAR codes currently used and followed by USDA are as follows:

Code	Interpretation
Zero	Dry or 305-day record with no other conditions affecting it
1	Estimated (incomplete or missing first part of lactation)
2	Sold, presumably for dairy purposes
3	Died or sold for beef
4	Injury
5	Mastitis
6	Ketosis
7	Other sickness
8	Record terminated by abortion
9	Nurse cow

Research has shown that projection factors vary substantially between breeds, between age groups, and between milk and fat within breeds. These variations are large enough to justify independent sets of factors.

Separate tables of factors are shown for Ayrshire, Guernsey, Holstein, Jersey, and Brown Swiss cows, while a combined set is shown for Milking Shorthorn, Red Dane, Red Poll, and mixed-breed cows.

Factors were derived separately for cows less than 36 months old and for cows 36 months old and older, since research (1, 2, and 5) has shown that age is the most important cause of

within-breed variation in projection factors. The decision to use only two age groups was based on findings that the major age differences lie between cows less than 36 months old and older cows (1, 2). Although there are significant variations due to age among the older cows, such differences are minor compared to the difference between cows less than 36 months old and any group of older cows.

Milk and milk-fat factors are shown separately for each breed and age group. Factors for fat are generally higher, especially in the later stages of the 305-day lactation. Season of calving was not considered in establishing these factors.

(1) Lamb, R. C., and L. D. McGilliard. 1960. Variables affecting ratio factors for estimating 305-day production from part lactations. Jour. of Dairy Sci., 43:519.

(2) McDaniel, B. T., R. H. Miller, and E. L. Corley. 1965. Unpublished research. Dairy Cattle Res. Branch, Anim. Husb. Res. Div., U.S. Dept. Agr.

(3) McGilliard, L. D. 1964. Ratios for extending incomplete lactations to 305 days. Dept. of Dairy, Mich. State Univ.

(4) McGilliard, L. D. 1961. Ratio factors for extending incomplete lactations to 305 days. Dept. of Dairy, Mich. State Univ.

(5) Van Vleck, L. D., and C. R. Henderson. 1961. Ratio factors for adjusting monthly test-day data for age and season of calving and ratio factors for extending part lactation records. Jour. of Dairy Sci., 44:1093.