

WHAT ARE PRODUCTION DISEASES, AND HOW DO WE MANAGE THEM?

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The term "Production Diseases" referred traditionally to those diseases induced by management practices, metabolic diseases are typical examples. Recently, the term "Production related diseases" has been enhanced to include other traits, such as infertility, and diseases such as mastitis and lameness, that might involve infectious agents but exacerbated by nutritional or managerial factors. The presentation deals with Production Diseases in the context of integrated herd health programs, using periparturient diseases and traits as an example,

Studies, based on 9377 lactations of cows calving in the period 1995 through 1998 from the author's practice in seven Israeli Holstein herds, show that most periparturient diseases and traits are followed by increased culling, lower production associated with late peaks and lower persistencies, and impaired fertility. The effects are independent of other diseases, and at times are long lasting.

Production Diseases are often multifactorial and appear at the same stage of lactation. Independent relationships among them must be established, so that common cause effects, direct and indirect causal associations, and incidental relationships can be differentiated.

Control of Production Diseases often involves various disciplines and therefore calls for a "multivariate approach". Such an approach, centered on the herd, had led to the adaptation of integrated programs for herd health. The programs are characterized by the adaptation of multidisciplinary, multifactorial, and a population approach to clinical entities. Preventive measures and routine examinations are the hard core of programs, but deeper involvement in nutrition, production and economics is called for.

A routine monitoring and causal analysis of periparturient traits and diseases, production, fertility and abortions are carried out, relevant data are processed, and monitoring reports are issued routinely. Five different linear regression models evaluate factors responsible for losses of a) peak milk yield; b) economy corrected (ECM) peak milk yield; c) extended 305-d milk yield; d) daily 3.5% FCM in the first 90 days in milk; and e) persistencies. Three different logistic and linear regression models evaluate factors that contribute to a) "non pregnancy to first service"; b) unobserved heat; and c) open days. Narrowing down the field of investigation is essential for an intervention to be efficient. Conclusions are drawn from the epidemiological study; the proposed recommendations are weighed with cost/benefit considerations. Possible losses are quantified and used with expected return value in decision analysis.

Production Diseases are at times the outcome of managerial mistakes brought about by the drive for higher yields. Integrated herd health programs help to control the negative effects of management by enhancing production under optimal feeding and management regimens. The estimated contribution of improved management to the Israeli national herd phenotypic increase in yield, and the improved fertility that followed the increase in milk yield presented, show that the goal is within reach.