

SUMMARY: APPRAISALS USING BEEF AND DAIRY CALCULATORS

VETERINARY SERVICES

BOVINE TUBERCULOSIS AND BRUCELLOSIS PROGRAMS

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Federal Indemnity for Animals Destroyed Due to Disease

Indemnity is an important part of Veterinary Service's (VS) animal health programs. It is the process through which VS compensates producers for animals that are destroyed as part of a disease control effort. Indemnity may be paid for individual animals that are destroyed for diagnostic purposes or for an entire herd, if VS determines that depopulating a whole herd is an appropriate and necessary action. Details on how indemnity values are determined and producers are compensated are specific to each disease program and are generally described in the *Code of Federal Regulations* and in program guidance documents.

Fair Market Value and Appraisals

Federal indemnity payments are based on the fair market value (FMV) of the animal or animals that will be destroyed. An appraisal determines the FMV. Indemnity is the actual payment a producer receives and is a function of FMV, with the amount based on regulations and policies. This document describes the use of a calculator to appraise the value of an animal. Indemnity policy options are discussed in a companion document.

An appraisal is the two-step process estimating an animal's worth. First, the quality of the animal is assessed. This evaluation typically includes a physical examination of the animal and may include a review of production records in breeding or milking animals. The value of the animal is then estimated based on this quality assessment. Often, an animal's value is estimated using a "sales comparison approach" where recent sales of other animals of similar quality (comparables) are the basis for an animal's value. Many times the comparables' selling price must be adjusted to yield an appraisal value that better represents the quality of the animal.

Traditionally, VS has used employees or hired private appraisers to determine the value of animals. However, the appraisal process is inherently variable due to differences among appraisers in their quality evaluation of the animal. These differences include their choice of comparable animals and their adjustments to the comparables' selling price to make them appropriate for the subject animal. This variability can result in differences in reported values between appraisers which producers may perceive as unfair treatment. Resolving disagreements with producers about the value of their livestock can result in delays in removing animals that negatively impact disease control efforts.

Why Use a Calculator?

In the bovine tuberculosis (TB) and brucellosis draft regulatory framework, VS proposed using calculators to determine the FMV of animals in place of the traditional appraisal. This approach would allow a wide range of VS field personnel to uniformly determine the value of animals and proceed quickly with their removal. A calculator will ensure predictability and consistency in values so that all animals with the same key characteristics, located in the same region, during the same period receive the same value.

What the Calculator Does

An appraisal calculator estimates the current value of an animal based on a limited number of measurable and observable animal characteristics and current market prices. This approach considers the same elements as a traditional appraisal performed by an individual. However, it limits the number of characteristics that are considered and standardizes the monetary value assigned to each characteristic to produce predictable and consistent appraisal values for similar animals.

VS proposes using the calculators both for individual cows and for herds that are destroyed due to brucellosis or TB.

Factors the Calculator Considers

VS has developed four appraisal calculators. Each calculator considers different animal characteristics and current market prices to determine the appraisal value for four types of cattle:

- **Beef breeding calculator.** Provides appraisal values for bred cows, bred heifers, and cow-calf pairs. The appraisal values for these animals are based on current cull cow prices and multiplied by a fixed amount premium depending on the type of animal and the status of the U.S. domestic beef cow inventory. Additional adjustments to the value are then made based on the animal's age, weight, geographic location, and body condition. Premiums are also added for cattle from registered or seedstock herds.
- **Beef feeder calculator.** Provides appraisal values for calves and feeder cattle, including dairy steers. This calculator incorporates information regarding an animal's sex (i.e., steer versus heifer), type (i.e., beef versus dairy breed), weight, and geographic location to adjust the market prices reported for the "Feeder Steers Medium and Large 1" in Oklahoma markets.
- **Dairy cow calculator.** Provides appraisal values for dairy cows. Generally, the appraisal value for a dairy cow is calculated as the sum of the cull cow market value, a milk production premium, and a calf production premium. The milk production premium for a cow incorporates the actual 305 day mature equivalents milk production, the expected number of remaining lactations, and an adjustment factor for butterfat production. The calf production premium is a function of expected remaining calvings, percent chance of becoming pregnant, calf 48-hour survivability, relative calf value, and average calf price. A premium is also added for registered cows.
- **Dairy replacement calculator.** Provides appraisal values for bred dairy heifers and dairy heifer and bull calves prior to weaning. The national average market price is determined by monitoring 31 markets in 16 States. This average price is adjusted based on an animal's weight, pregnancy status, gestation length, and geographic location to determine the appraisal value. There is a premium value added for cattle from registered or seedstock herds.

How We Know the Calculator Works

VS developed and validated its calculators in consultation with agricultural extension economists from the University of Idaho, Oklahoma State University, Texas A&M University, and

Washington State University. We believe this ensures the validity of the approaches and calculations used to generate the appraisal values. In addition, the calculators have been used on a limited basis within VS and have provided consistent valuations among producers and generated a fair market valuation of animals and herds.

How We Would Ensure that Calculators Remain Current

VS will update the market prices utilized in the calculators each month. Additionally, VS economists will monitor market trends, cattle inventory, and other parameters that influence the validity of the calculators so that revisions to the underlying formulas are made as needed.