Value of Thyroprotein for Dairy Cows

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What is thyroprotein?

Thyroprotein is a synthetic hormone prepared by chemically adding iodine to certain proteins. This product is also known as iodized casein, iodized protein, thyrocosein, thyrolactin and various trade names. Another hormone with similar action, synthetic L-thyroxine, is also available as a feed additive.

How does thyroprotein affect the cow?

When thyroprotein is fed and digested, the active agent is released into the bloodstream. Its effects are similar to the hormone, thyroxine, normally produced by and released from the thyroid glands. Thyroxine is an essential metabolic regulator affecting the oxygen-carrying capacity of the blood which in turn increases or decreases the activity of all body cells.

Is thyroprotein effective in increasing milk production?

To effectively increase milk production, more synthetic hormone must be added than is naturally produced. When this level of thyroprotein feeding is reached, the animal’s thyroid glands cease production and remain dormant until the drug is withdrawn.

When 20-25 percent more feed is provided with thyroprotein, cows capable of higher production usually respond in increased production. This response generally ranges from a 5 to 25 percent increase in milk and 0.20 to 0.98 percent increase in milk fat. Very little change can be expected in milk protein, lactose and other components.

Can a similar response be expected from all cows?

Definitely not. The response appears to vary with cows of different ages, levels of feeding, and milk producing ability.

No response is likely in early or late lactation. A response is most likely when the lactation begins to decline or about 60 days after calving with possible benefit for 90 to 120 days thereafter.

Are certain feeding procedures necessary?

Yes. Thyroprotein cannot be mixed into regular herd grain rations. It should only be fed according to each individual cow’s stage of lactation.

One-fourth more feed is necessary to maintain body weight and milk production. Some body weight loss generally will occur even with this increased level of feeding. Thyroprotein is of no value when fed to poorly managed, underfed cows. Withdrawing the stimulant is necessary after about the fifth month of pregnancy. This allows time for the animal’s own thyroid gland to become active and begin its production of thyroxine. Because of this readjustment of the thyroid
glands, gradual removal slows down an otherwise sudden drop in milk production.

Care must be taken to avoid dangerous overdoses; thus it must be fed exactly as directed by the manufacturer.

Feeding thyroprotein during hot summer months requires extreme caution. Because of the increased metabolic rate and heat production from the body, some cows are more likely to suffer from heat prostration. When this happens, feed consumption declines and milk production goes down. In severe heat waves cows fed the stimulant may actually die from heat prostration.

What adverse effects occur from overdoses?

Excessive amounts may actually lower milk production. Physiological effects on the animal include a higher heart rate, respiration rate and body temperature with a loss in body weight. The animal may become unusually nervous or "high strung." The energy requirements of the animal are increased because of increased activity of the body.

Could thyroprotein affect the cow's health and reproduction when fed from lactation to lactation?

Scientists differ in their opinion concerning these questions. However, no ill effects have been noted when its feeding has been limited to the recommended stages of lactation, or mid-lactation.

What about cows on official testing programs?

Feeding thyroprotein or similar products to cows on official test is prohibited. This includes all cows on DHIA and DHIR.

How economical is thyroprotein feeding?

The value of additional milk received as well as the other factors associated with thyroprotein feeding must be considered by each individual dairyman.

Many cows will consume more energy through heavier concentrate feeding without the addition of thyroprotein. Research studies indicate that when cows increase their energy intake by 20 percent, milk production will increase by 13 percent. If the feeding of thyroprotein and increased energy intake produces a 20 percent increase in milk production, approximately 7 percent remains to pay for the thyroprotein and the extra trouble of feeding it.

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