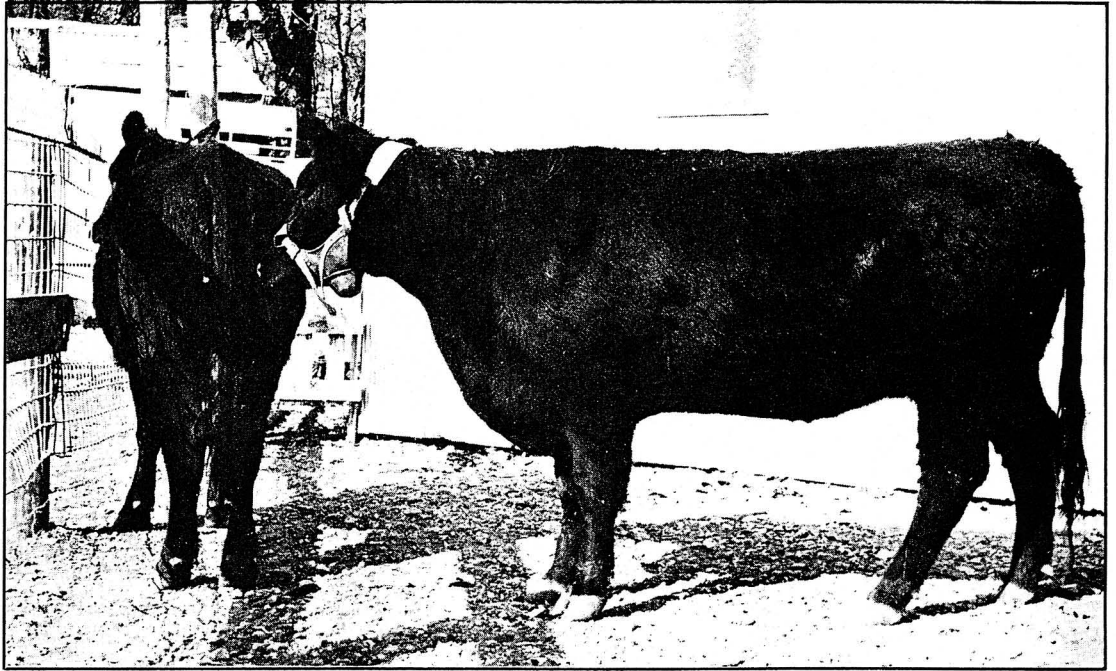


Heat Detector Animals

Androgenized Cows Becoming Popular

The key to any successful A.I. program is accurate heat detection. In this article Kansas State University research assistant Margo Heekin discusses the preparation of heat detector animals. Ms. Heekin has conducted research at KSU on androgenized cows and has favorably introduced androgenized cows to ranches on which she has worked. The author holds a B.S. degree in animal science from California Polytechnic State University, San Luis Obispo, and an M.S. degree in large animal reproduction from KSU. She has taught animal science classes at Cal Poly and Colby Community College, Colby, Kan.



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Visual observation by a herdsman was the first method of heat detection; it is still the best, but using a heat detector animal in addition can increase the number of cows detected in estrus (Britt, 1980 and Kiser, 1977).

Highest frequency of first mounting and occurrence of mounting takes place between midnight and 6 a.m. (Hurnik et al., 1974). In herds artificially inseminated during the winter months, a cow in heat during the night can be missed. In small herds a cow in estrus without an active partner to mount her that is also near or in heat, may not be ridden or very seldom ridden making her difficult to detect by observation only.

Detector animals can be prepared in several ways and fitted with chinball markers filled with marking paint.

A Pen O Block® can be inserted on a bull to prevent him from extending his penis. This is done by placing a cylinder in the sheath and securing it to the sides of the sheath. A Pen O Block® is low in cost, \$20.00 (Nasco catalog), but the device should be inserted by a veterinarian. Bulls should be rested periodically because of the pressure of the penis against the Pen O Block® during erection, and checked often to insure the device is not adhering to the prepuce. A penectomized bull has had his penis amputated, and he urinates below his anus. Bleeding and flies are sometimes a problem at the surgery site (Frazer, 1973). A bull with a deviated penis, also called a

sidewinder, still can have an erection but the penis is deviated to the side through the flank or the sheath. Urinary retention in the prepuce causing irritation (Jochle et al., 1973) and problems of edema in the subcutaneous tunnel formed to the penis have been encountered (Royes and Bivin, 1973).

Surgery for the deviated penis and penectomized bulls costs about \$75 to \$100, and bulls require four to six weeks for recovery following surgery. Bulls should be rested periodically and some bulls lose their libido after a period of use due to the repeated failure to penetrate (Jochle et al., 1973).

One of the more recent detector animals to be used are androgenized cows (cows which have been treated with the hormone testosterone). In recent research comparing androgenized cows with altered bulls, the cows were more active, mounted more often, and found more cows in heat that altered (gomer) bulls (Britt, 1980 and Kiser, 1977).

Cows, which are safer than bulls, are readily available from the existing cow herd and show no loss in activity after 75 days of continued use (Laaser, 1978).

Various treatments have been used to prepare androgenized cows. One successful treatment (Kiser, 1977 and Laaser, 1977), using testosterone propionate in a 20-day, 10-injection warmup period (before placing with herd) was tested against a new treatment involving a three day, one injection, warmup period using testosterone enanthate.

Following 371 observations, under various conditions, over a two year period by Kansas State University, cows on either treatment worked equally as well.

The testosterone enanthate treatment has the obvious advantages of time and labor savings. The hormone is now available ready to use at a lower cost per cow than testosterone propionate. Both hormones are available by prescription only from a veterinarian as an extra-label use. Testosterone enanthate is available from Henry Schein Inc., Port Washington, N.Y.

Management of Androgenized Cows

Proper management of androgenized cows is vital. Select cows at least three years old or older (Goodeaux, 1977; Laaser, 1977, 1978), in moderate to good condition. Use cows with sound feet and legs, with no prolapse history, and gentle enough to handle regularly. The optimum ratio of androgenized cows to cows in the herd is 1 to 30 (Beerwinkle, 1974) during continuous use. More than one cow can be used in a pasture successfully (Laaser, 1977). Cows may ride each other when there are no other cows in heat.

Occasionally one androgenized treated cow will dominate another androgenized cow when paired together (Laaser, 1977). The subordinate cow may not mount as often unless she is placed by herself. Heifers do not perform as well as mature cows (Laaser, 1977 and 1978), especially when paired with an older androgenized cow. Although they will show dominance over nontreated cows, androgenized cows maintain their own social relationships among themselves (Bouissou, 1978).

Check androgenized cows daily for soundness and chinball marker retention, during routine observation of the cow herd for estrus and marks.

Chinball markers should be checked at least once a week or more often if the herd is synchronized. The added stress of synchronization may dictate resting cows occasionally. Pen individually, as they will mount each other.

An additional asset to androgenized cows is that they can be used to practice artificial insemination, but avoid pasturing them with bulls as they remain fertile.

Treatment of Adrogenized Cows

Warmup: Administer 2,000 mg (2 gm) of Testosterone Enanthate . . . 500 mg intramuscularly (IM) and 1,500 mg subcutaneously (SC). Wait three days. Place chinball marker on at this time and to allow her to become accustomed to wearing it. Check adjustment due to stretching before turning her out with the cows.

When purchasing a chinball marker (cost —\$50 to \$90) select the markers with leather straps. They are more durable and are less abrasive to the cow than nylon straps. Observe androgenized cows closely for the first week. In rare cases a cow will not respond to treatment and another animal should be selected.

Maintenance: Administer 500 to 750 mg SC every 10 days to two weeks for as long as the cow is used as a detector animal.

Example: Testosterone Enanthate (Henry Schein Inc.—\$5.40/10 cc bottle) Available in 10cc—200 mg/cc -vials. Give 2.5 to 3 cc IM and 7.5 SC. Every 10 days to 2 weeks administer 2.5 cc SC. For a 45 day A.I. season allow 1¾ to 2 vials per cow. **AJ**

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