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RELATIONSHIP BETWEEN BODY MASS AND CONCEPTION IN BEEF COWS

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The existence of a positive relationship between live mass gain and fertility in the cow has not been consistently demonstrated (Broster, 1974). However, according to Lamond (1970), each cow, depending on heridity, age, lactational status and time of year, has a high probability of conception within a certain range of body mass and body condition. This target or critical mass as suggested by Lamond (1970) has, however, remained undefined for any specific breed.

In an effort to establish a target mass, the results obtained with 94 Africander cows (5 to 8 years old) that had been subjected to different feeding regimes (Meaker & Lesch, 1974) were re-examined.

The mass of the animals at the start and at the end of the breeding season, respectively, was subdivided into 6 evenly spaced categories of body mass. There was a significant correlation between the percentage reconception of the cows and the means of body mass categories at the start ($r = 0{,}924$ **) and at the end ($r = 0{,}974$ **) of the breeding season, respectively (Fig. 1 & 2).

It appears therefore that reconception rate improves greatly with an increase in animal mass.

There was, however, no significant correlation between reconception rate and the differences in body mass categories over the breeding season. These results are therefore contrary to the belief that an animal must gain in mass over the breeding season in order to have a reasonable chance of conceiving.

From Fig. 1 it should be possible to determine what the average mass of Africander cows must be at the start of the breeding season necessary to ensure a high conception rate. On the other hand it should be possible from Fig. 2 to predict the reconception rate of Africander cows when their average body mass at the end of the breeding season is known.

Although much variation between breeds can be expected, the principle of establishing some target mass needs closer attention and this could become the focal point at which the stockman must aim his management in order to achieve a high calving rate.

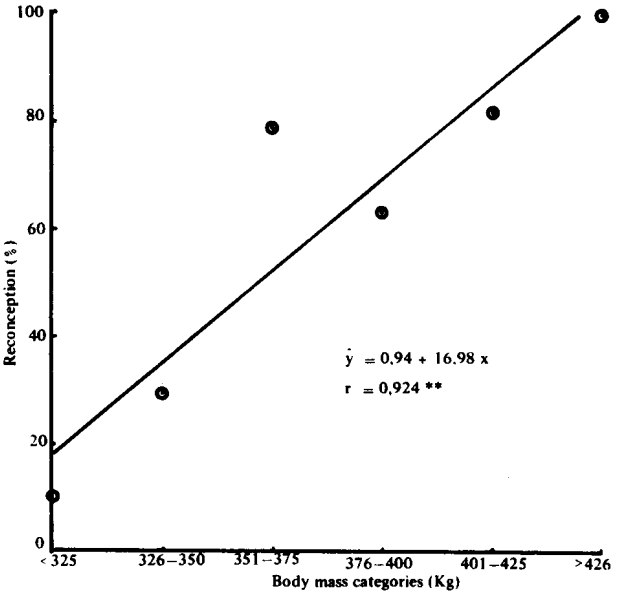

Fig. 1 *Relationship between means of body mass categories of cows at the start of the breeding season and reconception rate*

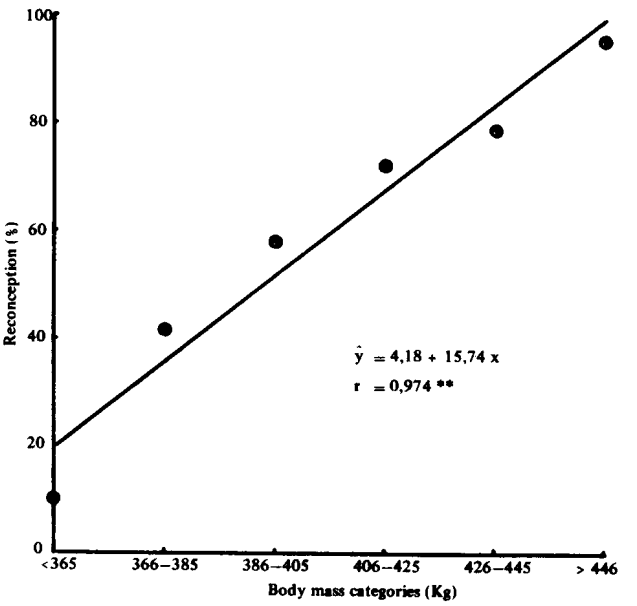

Fig. 2 *Relationship between means of body mass categories of cows at the end of the breeding season and reconception rate*

References

BROSTER, W.H., 1974. Liveweight change and fertility in the lactating dairy cow: a review. *Anim. Breed. Abstr.* 42, 58.

LAMOND, D.R., 1970. The influence of undernutrition on reproduction in the cow. *Anim. Breed. Abstr.* 38, 359.

MEAKER, H.J. & LESCH, S.F., 1974. Maize silage and/or *Eragrostis curvula* hay for wintering pregnant beef cows. *S. Afr. J. Anim. Sci.* 4, 175.