Australian Veterinary Semen Morphology

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Bull buyers purchasing semen morphology tested bulls can be confident of the bulls meeting a high quality control standard.

Semen morphology refers to the shape, size and structure of the semen and is one of the most important indicators of fertility. Semen quantities and the ability of semen to move and reach the egg are assessed crush side by the vet at the time of bull test, whereas, the morphology is examined on preserved semen using a much higher power specialised microscope. One hundred semen are counted and categorised into "normal" or a number of various defects.

Morphology results can predict the semen's ability to get a calf from the egg, and importantly, pick up defects which may initially start to fertilise the egg but then fail to result in an ongoing pregnancy. In the bull, normal morphology is heritable, highly repeatable (doesn't change much year to year), can be used to predict the quantities of calves the bull can produce and can even predict the fertility of his female offspring. The heifer's age at puberty and her time between calving and cycling again, reflects the morphology of her sire. The selection of bulls with high normal semen morphology counts results in increased calving rates, tighter calving periods, reduced empty cull cows, increased weaning weights and faster rates of genetic gain.

Bulls which do not qualify by morphology standards may still result in a large number of calves on the ground, but these calves may have come at a high cost. There may be unacceptably high rates of empty or dry cows, and the cows may have lost one or two embryos during the mating season prior to maintaining pregnancy. The latter results in later calves, reduced weaning rates, and younger heifers at joining, slowing the rates of production and genetic gain.

Semen is sensitive to extreme temperatures, stress and diet, so morphology results can also reflect recent illnesses, transport stress, lameness and high grain diets, all of which have may only have a temporary effect on fertility. As a result, repeat tests may be required on bulls with defects on initial exam. Similarly, young bulls may occasionally have semen defects reflective of their sexual immaturity. The defective semen often progress to become normal as the bull matures sexually. Bulls which are sexually mature at a younger age are more profitable. They start work earlier and their male and female offspring mature younger, increasing production rates.

Bulls which fail to be sellable at the morphology stage are an expense to the breeder, but the benefits of this quality control step to the purchaser are considerable. Breeders selling morphology tested bulls should be proud of their high standards which will reflect in the quality of their product and in their reputation.

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