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Occurrence of rare three types of chromosome configurations in a Murrah buffalo (*Bubalus bubalis*)

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Chromosomal abnormalities are deviations in normal genetic architecture and lead to disorders in bearer individuals. These can be both in number and structure of autosomes or sex chromosomes, usually inflict adverse effects on reproductive performance in domestic animals. Present report is on a female Murrah buffalo (*Bubalus bubalis*), which was among animals with inefficient reproductive performance and cytogenetic screening programme. The animal was a 9 year old female buffalo with a long history of different types of reproductive problems including abortion, stillbirth, temporary anoestrus, irregular heat cycle, repeat breeding and even calving in early age of three parities. Metaphase chromosome preparations were obtained with whole blood cell cultures standard method. Slides were stained with Giemsa, treated for R-banding (RB-FPG technique) and C-banding. Karyotypes were constructed and abnormal chromosome was identified. Reproduction history covered a period from 2007-2013, which included three calving. Succeeding to second calving, buffalo conceived after 6 unsuccessful AIs from different bulls, inter-calving period between second and third calving was approximately 3.5 years. Cytogenetic evaluation of 407 metaphase spreads revealed three types of chromosome configurations, viz. 49, 50 and 51 all with XX, overall frequency was 16.7, 76.7 and 6.6 per cent, respectively. The R- and C- bandings confirmed autosome 11 both in monosomy (2n=49) and trisomy (2n=51), respectively. This unusual chromosomal constitution might have arisen due to non-disjunction during early stage of zygotic development of the buffalo. Nevertheless in young stage ovulations occur in such cases, subsequently follicular atresia becomes fast resulting in anoestrous condition as in this buffalo.

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