The aim of this study was to study relations between physical and morphological aspects and hiposmotic test in fresh semen of Nelore young bulls reared in extensive conditions. A total of 420 bulls with ages ranging from 18 to 22 months were subject to breeding soundness examination according to the criteria established by the Brazilian College of Animal Reproduction. After physical and morphological evaluation hiposmotic test was done in semen. In hiposmotic test it were used 10µL of fresh semen in 1mL of hiposmotic solution (150 mOsm/kg) with 60 minutes of incubation time at 37 ° C. After the breeding soundness examination, 83% (n/420) of bulls were classified as sound for breeding. There was no difference between the average scrotal circumference of bulls classified as sound and unsound for breeding (P>0.05), the averages were 33.5±2.1 cm for sound and 33.5±2.6 cm for unsound for breeding. All bulls classified as unsound for breeding were only by semen quality (physical and morphological aspects), it was not used bulls classified as unsound for breeding by others clinical finding, such as testicular asymmetry, low scrotal circumference, vesiculits among others. There was difference between all semen physical and morphological aspects of bulls classified as sound and unsound for breeding (P< 0.05) but there was no difference in hiposmotic test results (P>0.05). The averages of reactive spermatozoa in hiposmotic test were 43.9±21.1% for sound and 43.6±19.3% for unsound for breeding. The hiposmotic test did not correlate with the main characteristics of semen quality (P>0.05). According to these results, the hiposmotic test can not be used alone to predict the reproductive potential of Nelore young bulls.