Chilled canine semen longevity evaluation with a Tris base extender with different egg yolk concentrations

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The use of chilled semen has become a common practice in breeding management in the domestic dog. However, the longevity of chilled sperm is limited compared with initial semen quality. [1] The aim of the current study was to evaluate the influence of storage time (0, 24, 48, 72, 96, 120 hours of storage) [2] and egg yolk concentration(5%, 10% and 20%) in the survival of chilling canine semen.

The same semen sample from 6 adult dogs was divided in equal volume and diluted 1:1 ml with extenders containing 5, 10 and 20% of egg yolk before chilling process. Sperm motility, progressive velocity and spermatozoa defects was evaluated before and after the cooling process. Sperm motility, progressive velocity and spermatozoa defects was evaluated before and after the cooling process. The mean motility of raw ejaculates, and those diluted in Tris-fructose containing 5, 10, and 20% egg yolk were: 74% ± 9.61, 76% ± 9.61, 76% ± 9, and 74 % ± 13.87, respectively. The means of spermatozoa motility in the samples within 24 hours after dilution and chilled at 5°C were 48% ± 17.88 (5% egg yolk), 48% ± 19.23 (10% of egg yolk) and 48 % ± 18.16 (20% of egg yolk). Within 48 hours in refrigeration the values were 34% ± 26.07 (5% egg yolk), 37% ± 22.80 (10% of egg yolk) and 30 % ± 18,70 (20% of egg yolk). After 72 hours in refrigeration the values were 23% ± 21.67 (5% egg yolk), 28% ± 22,52 (10% of egg yolk) and 20 % ± 15,41 in semen (20% of egg yolk). Within 96 hours in refrigeration the values were 14% ± 13.73 in (5% egg yolk), 17% ± 15.65 (10%) of egg yolk and 9 % ± 10.24 (20% of egg yolk). Within 120 hours in refrigeration the values were 6% ± 8.94 (5% egg yolk), 8% ± 10.95 (10% of egg yolk) and 4% ± 8.94 (20% of egg yolk).

From 120 hours in refrigeration there was no spermatozoa motility in all semen samples. Spermatozoa progressive velocity mean (grade 0-5) was grade 3 ± 0 in fresh and immediately diluted semen, and at the final process 1.2 ± 0.54 (5% egg yolk), 1.2 ± 0.37 (10% egg yolk) and 1.35 ± 0.51 (20% egg yolk). Normal spermatozoa morphology mean was 95% ± 320 in fresh semen and 93.5 % ± 3.00. There was no statistical difference in spermatozoa motility and morphology values (P < 0.05) using SAS System Analysis. Conclusion. Semen quality significantly decreased during storage with significantly lower motility and spermatozoa morphology. Since there is no difference in semen parameters evaluation after chilling process between same base extenders with different egg yolk concentrations gave us the advantage that is the use of less amount of egg yolk than the traditional 20% instead their longevity are the same. [2]