

Administration of Se as Sel-Plex on top of sodiumselenite still improves fertility of hatchability of a broiler breeder flock

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Two groups of 400 broiler breeders were kept in cages and were fed a feed containing 0.2 ppm Se as sodiumselenite. The trial group was distributed over 2 groups: a control group and a group receiving 0.3 ppm Se as Sel-Plex (Alltech Inc., USA) on top. Hens were grouped per 40 (thus 10 repetitions per treatment). Cocks of both treatments were fed a commercial feed and were between 50 to 55 weeks of age. Hens were inseminated artificially, and eggs were collected during 10 days after each insemination. These eggs were controlled on number of infertile eggs and on hatchability. This cycle of artificial insemination and collection of eggs was repeated 4 times to yield a trial period of 40 days. Results indicate that, as an average for the 4 insemination, the number of infertile eggs was about 0.8 % higher when Sel-Plex was added on top. The difference between treatments became larger as the time after insemination increased. Hatchability was improved slightly by 0.3 %, and the improved in hatchability became larger as the time of egg deposition after insemination increased. It can be concluded from this trial that supplementing Sel-Plex on top of sodiumselenite still has a positive effect on fertility and hatchability of the egg, even when it is only administered to the breeders.

Keyword: Sel-Plex; fertility; breeder; insemination; hatchability

Introduction

The use of Sel-Plex to improve broiler breeder performance is a well documented item. While this effect is partly attributable to the female breeder performance combined with lower mortality of embryos during incubation, the effect is also partly attributable to the effect of Se on sperm quality, its fertilization potential but most probably to the maintenance of sperm quality when stored in the sperm storage tubules after mating. The objective of the trial was to evaluate the effect of the supplementation of 0.3 ppm Se on top of 0.2 ppm Se from sodium selenite on the broiler breeder performance, focusing on fertilization potential. In particular the effect of Se on the fertilization potential of sperms stored in the sperm storage tubules in the breeder in the days after mating is investigated.

Material and methods

Two groups of 400 hens (Isa F15, 30 weeks of age at the start of the trial) were kept in cages and were fed a feed to which already 0.2 ppm as sodiumselenite was added. Two trial groups were used: a control group and a group receiving 0.3 ppm Se as Sel-Plex (Alltech Inc., USA) on top. Hens were grouped per 40 (thus 10 repetitions per treatment). Cocks (same breed) were fed a commercial feed and were between 50 to 55 weeks of age. The hens were inseminated artificially, and eggs were collected during 10 days after each insemination on a daily basis. This cycle of artificial insemination and collection of eggs was repeated 4 times; total trial period was thus 40 days. The eggs were

controlled on number of infertile eggs and on hatchability and reported per month. Statistical analysis was performed by Anova. Significance is stated when $P < 0.05$.

Results and discussion

Hatchability was improved by 0.3 %, and the improvement in hatchability became larger as the time of egg deposition after insemination increased (*Figure 1*).

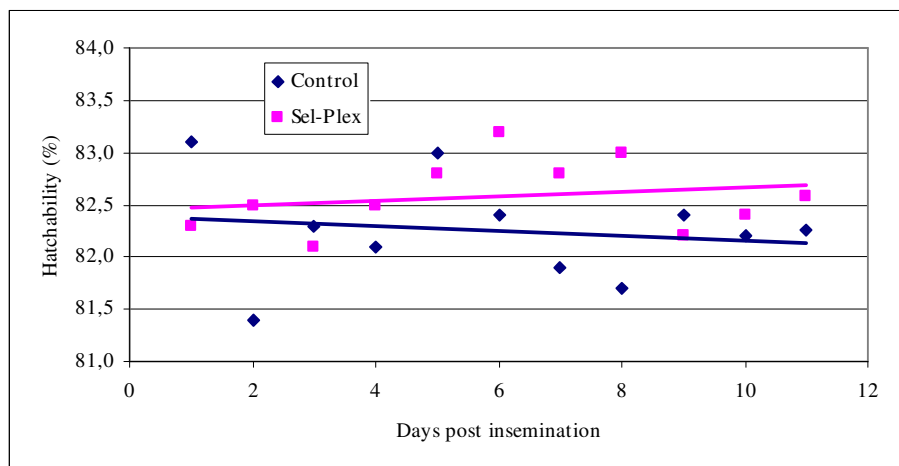


Figure 1 Hatchability of the eggs at different times post insemination (average of the 4 inseminations)

As an average for the 4 insemination, the number of infertile eggs was about 0.8 % lower when Sel-Plex was added (*Table 1*).

Table 1 Average non fertile eggs during the 10 day period after insemination

Insemination	Control	Sel-Plex
1	11,3	10
2	11,1	10,1
3	10,9	11
4	9,5	8,5
Average	10,7	9,9

The difference between treatments became larger as the time after insemination increased (*Figure 2*).

In this breeder performance trial, it was demonstrated that the fertilization potential of the semen stored in the sperm storage tubules is also influenced by the Se feeding of the female breeder. As time progressed after insemination, the effect of feed Se to the breeder on maintaining fertilisation and hatchability of the eggs is increasing.

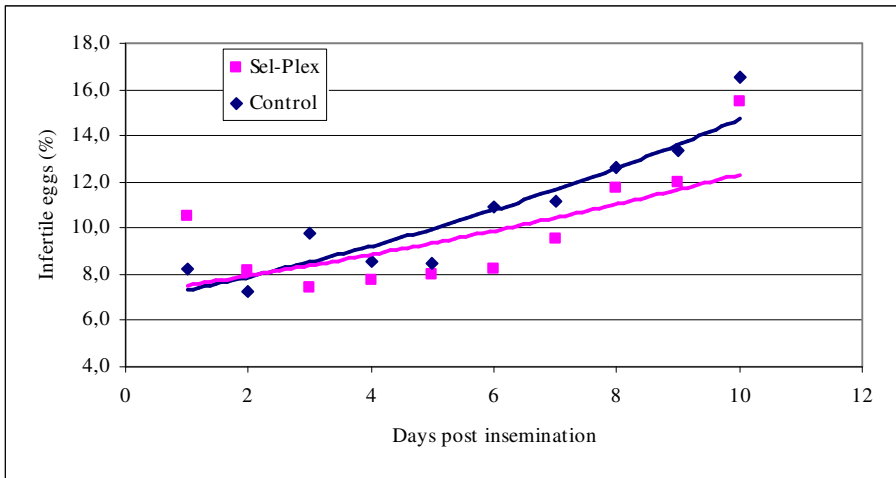


Figure 2 Percentage of infertile eggs at different times post insemination (average of the 4 inseminations)