

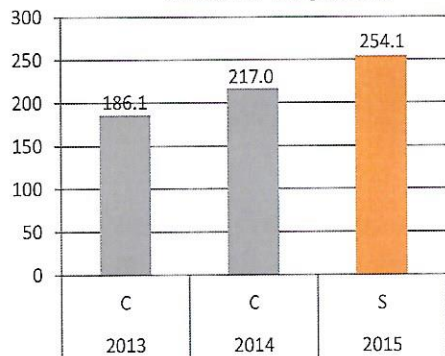
RESULTS

Improvement of semen quality

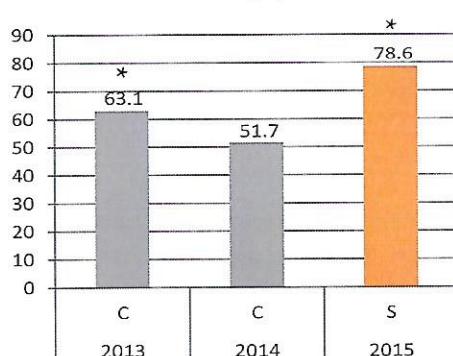
The number of services required for ejaculation is lower when horses are supplemented with primary antioxidants: 1.6 in 2015 compared to 1.7 and 2.3 in 2013 and 2014, respectively.

Indeed, the supplementation of horses with primary antioxidants **increases the concentration of alive spz** in the stallion sperm and **the percentage of viable spz at collection** (estimated after evaluating their morphology and their moving quality, i.e direction and speed):

Concentration of alive spz at collection
(millions of spz/mL)



Quality of alive spz at collection
(%)



Note : One non-supplemented horse in 2015 displays an average of spz concentration of 174.6×10^6 spz/mL and spz quality of 68.6%.

*p=0.024

Increase in the number of available semen doses

The method of artificial insemination requires the preparation of semen doses, whose number determines the potential number of inseminated mares. Two techniques of semen doses preparation are commonly used:

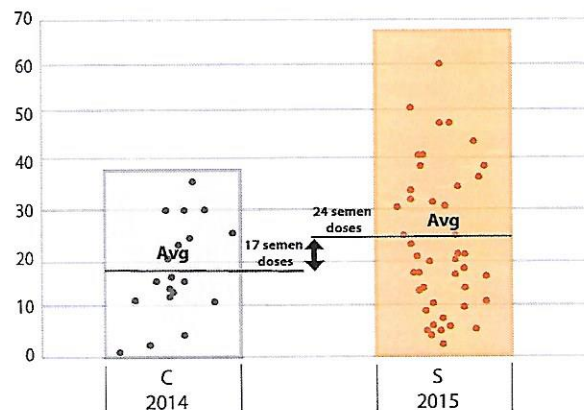
• First technique :

The technique of semen dose containing 200 millions alive spz is used in this trial for only one horse, which was supplemented in 2015. The number of semen doses prepared in 2014 and 2015 using this technique of preparation is presented in the graph at the right. The mean number of semen doses in 2014 (17 doses) is improved with antioxidants in 2015 (24 doses).

• Second technique :

For the other stallions, the technique of maximum dilution (1/3 of sperm for minimum 2/3 of dilution medium) is used. The number of alive spz per dose at 24h after collection is also increased with the primary antioxidant supplementation: from 31×10^6 in 2013 and 2014, to 52×10^6 in 2015 for supplemented horses, an **improvement of spz survival of 68% at 24h**. After 48h, the number of alive spz per dose is 15×10^6 , 25×10^6 and 41×10^6 in 2013, 2014 and 2015 respectively, inducing an **improvement of spz survival of 64% at 48h** between 2014 and 2015.

Number of semen doses
(200 millions of spz) produced



CONCLUSION

The supplementation with primary antioxidants improves the semen quality of the stallion at collection, thereby increasing the number of semen doses available for insemination, and the spz survival at 24h and 48h after dilution for a better fecondation.