

Retrospective analysis of superstimulation with Folltropin®-V in Wagyu versus other beef breeds

Chelsie Steinhauser¹, Charles Looney¹, John Hasler², Paul Renaud³

¹ OvaGenix, College Station, Texas, USA, ² Vetoquinol USA, Fort Worth, Texas, USA, ³ Vetoquinol N-A Inc., Lavaltrie, Quebec, Canada

contact: paul.renaud@vetoquinol.com

Introduction

Originating from the Kobe region of Japan, the number of Wagyu cattle is growing in some countries where populations can be deemed as ranging from “modest” to “important”. Nevertheless, in many countries Wagyu remain an exotic breed and questions persist in relation to the most efficacious superstimulation protocols to deploy.

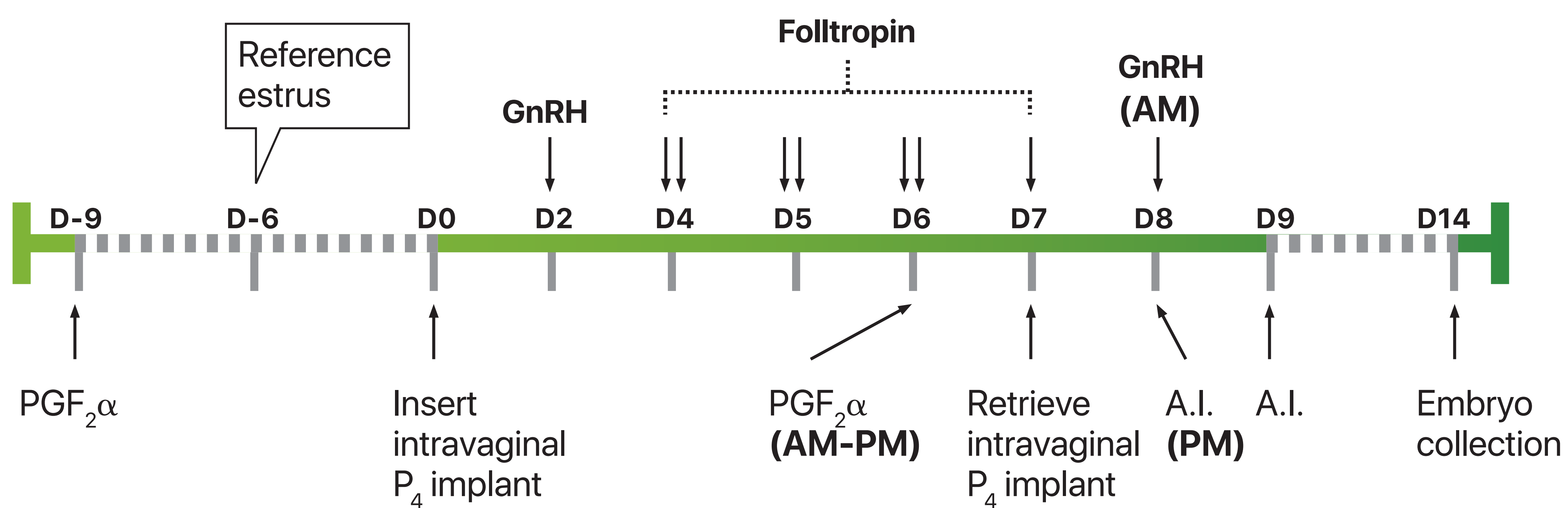
Objective

The data in this study were collected between 2012 and 2018 at the OvaGenix® (Texas) facilities. It must be noted that these data were collected from 792 donors under the direct care of OvaGenix®, not under external on-farm management. Ultimately, the data compare results in Wagyu cows and heifers to a number of other *Bos taurus* and *Bos indicus* breeds.

Breed abbreviation	
KB	Wagyu (Kobe)
AN	Angus
BM	Beefmaster
BN	Brangus
CH	Charolais
HH	Hereford
RB	Red Brangus

Protocol

Superstimulation was the same in all animals, which received a proprietary 7-injection pFSH protocol. Although this protocol has a shorter pFSH treatment schedule as compared to label indications, “results” to be discussed in the following segment clearly display that the outcome is very much in line with other protocols that are deployed. Moreover, this protocol does reduce animal manipulation.



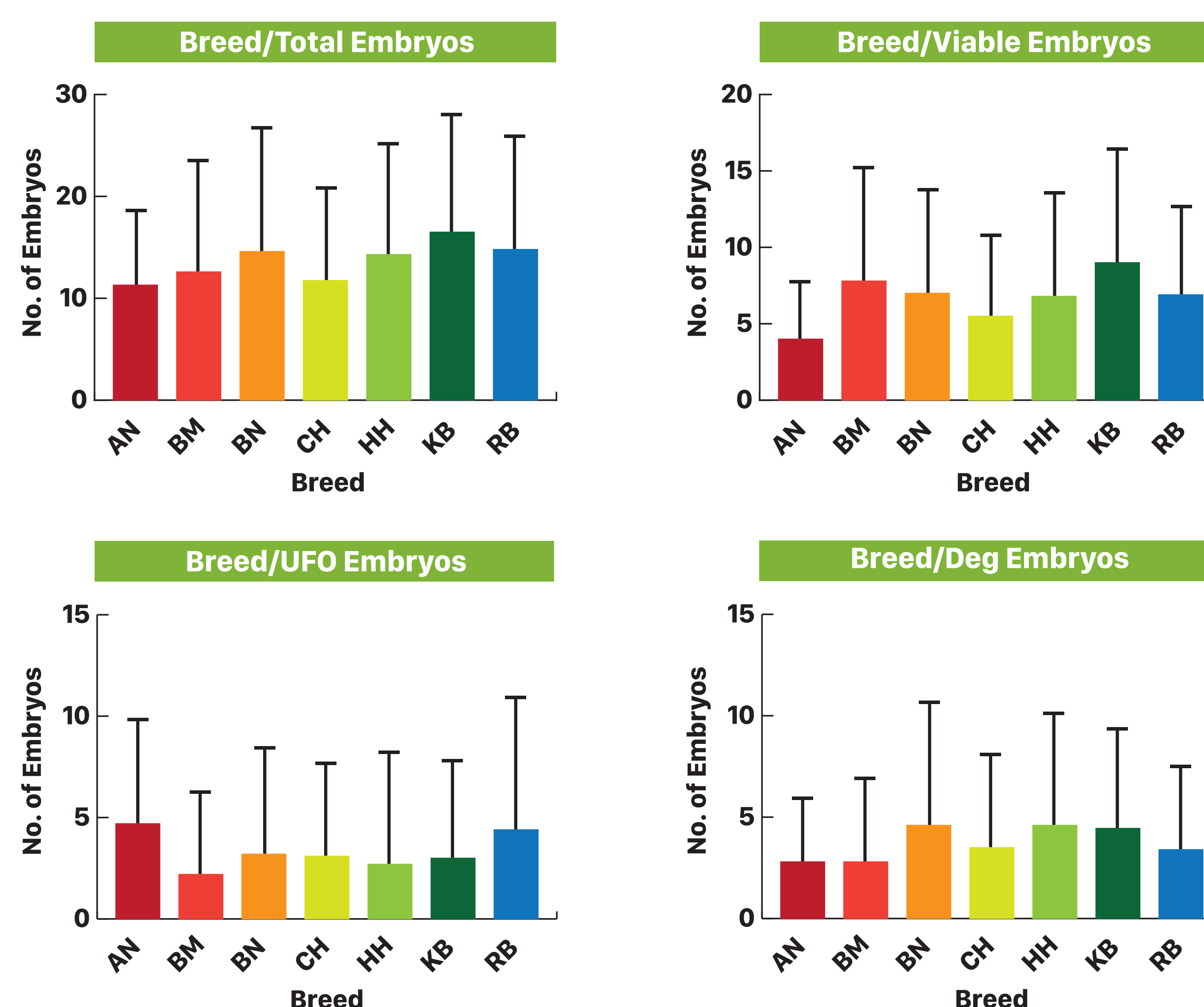
Results

From the data displayed in the following grid, perhaps most important is the fact that results in the Wagyu/Kobe breed are very good and comparable to most other breeds assessed in this retrospective analysis. It is well acknowledged that virtually every other beef and dairy breed responds well to Folltropin®-V. The only real surprise is that the Angus fared more poorly than expected. The previous said, it is well documented that normally the Angus breed superovulates as well as any of the other traditional beef breeds. However, these data were collected from donors, which by chance were already assessed as problematic breeders, and they were sent to the OvaGenix® site to facilitate hands-on MOET procedures.

TBreed	No. Animals	Mean ± SEM no. total ova	Maximum no. total ova	Mean ± SEM no. viable embryos	Maximum no. viable embryos	Mean ± SEM no. UFO	Mean ± SEM no. degenerate embryos	No. animals with no ovarian response	No. animals with no viable embryos
KB	99	16.6 ± 1.1 ^a	46	9.1 ± 0.7 ^{a,c}	36	3.1 ± 0.5	4.3 ± 0.5	5 (5.0%)	9 (9.0%)
AN	120	11.4 ± 0.7 ^b	32	4.1 ± 0.4 ^b	20	4.7 ± 0.5 ^a	2.7 ± 0.3 ^a	4 (3.3%)	20 (16.7)
BM	139	12.8 ± 0.9	53	7.9 ± 0.6 ^a	38	2.2 ± 0.3 ^b	2.8 ± 0.3 ^a	6 (4.3%)	12 (8.0%)
BN	207	14.8 ± 0.8	50	7.1 ± 0.5 ^a	34	3.2 ± 0.4	4.5 ± 0.4 ^b	12 (5.8%)	31 (15.0%)
CH	76	12.3 ± 1.0	30	5.6 ± 0.6 ^d	20	3.2 ± 0.5	3.4 ± 0.5	4 (5.3%)	15 (19.7%)
HH	45	14.3 ± 1.6	46	7.0 ± 1.0	32	2.8 ± 0.8	4.5 ± 0.8	1 (2.2%)	5 (11.1%)
RB	106	14.8 ± 1.6	51	7.0 ± 0.6 ^a	33	4.4 ± 0.6 ^a	3.4 ± 0.4	4 (3.8%)	9 (8.5%)
Total	792	13.9	53	6.9	38	3.4	3.7	36 (4.5%)	101 (12.8%)

Total Ova – ^{ab} Values without common superscripts differ significantly (P<0.005) ANOVA; Viable Embryos – ^{ab} Values and ^{cd} Values without common superscripts differ significantly (P<0.01); UFO – ^{ab} Values without common superscripts differ significantly (P<0.01); Degenerate Embryos – ^{ab} Values without common superscripts differ significantly (P<0.02)

From the previous data the following 4 histograms show the means and the standard deviations, which are obviously very large. Large standard deviations in any superovulation experiment are expected unless by chance very small sample sizes just don't reflect the population. The largest ova and embryo numbers for all the breeds clearly show the wide variance range that was observed. The standard errors in the table are more traditional for comparing the differences among the different breeds.



Conclusions

- The statistics clearly show that for almost all the significant differences detected, only the Angus group was really lower.
- Within the “classical” MOET framework, mean viable embryo results indicate that Wagyu/Kobe cows and heifers are effectively superstimulated using a protocol deployed on other *Bos taurus* and *Bos indicus* beef breeds.
- Moreover, Folltropin®-V maintained its acknowledged consistency with mean viable embryo numbers similar to those audited and published yearly by various national and international embryo transfer associations/societies.