

Objective

To verify the most relevant factor in predicting the pregnancy potential after single euploid FET: the blastocyst quality or the day of embryo biopsy.

Design

A retrospective, observational, single center cohort study was conducted between March 2017 and June 2019 with 227 blastocysts biopsied on Day 5 (D5) and 104 on Day 6 (D6).

Materials and Methods

Oocytes were inseminated by ICSI and/or IVF and normally fertilized oocytes were cultured till day 7. Blastocysts' ICM and TE were classified before biopsy as: A for good, B for fair and C for poor quality (Gardner's scoring) and PGT-A was performed on TE samples by NGS. Average female age was 33.9 ± 5.6 years and selected frozen euploid blastocysts were warmed and transferred in a natural cycle (NC) or in a hormonal replacement cycle (HRT).

Results

Fresh cycles characteristics were similar between D5 and D6 blastocysts (**Figure 1**). A multivariate regression controlling for confounding factors demonstrated that TE quality has a relevant impact on pregnancy outcomes rather than ICM and day of biopsy (**Table 1**). Compared to the grade A TE, the adjusted OR was 0.454 for B and 0.429 for C ($p=0.028$).

Figure 1

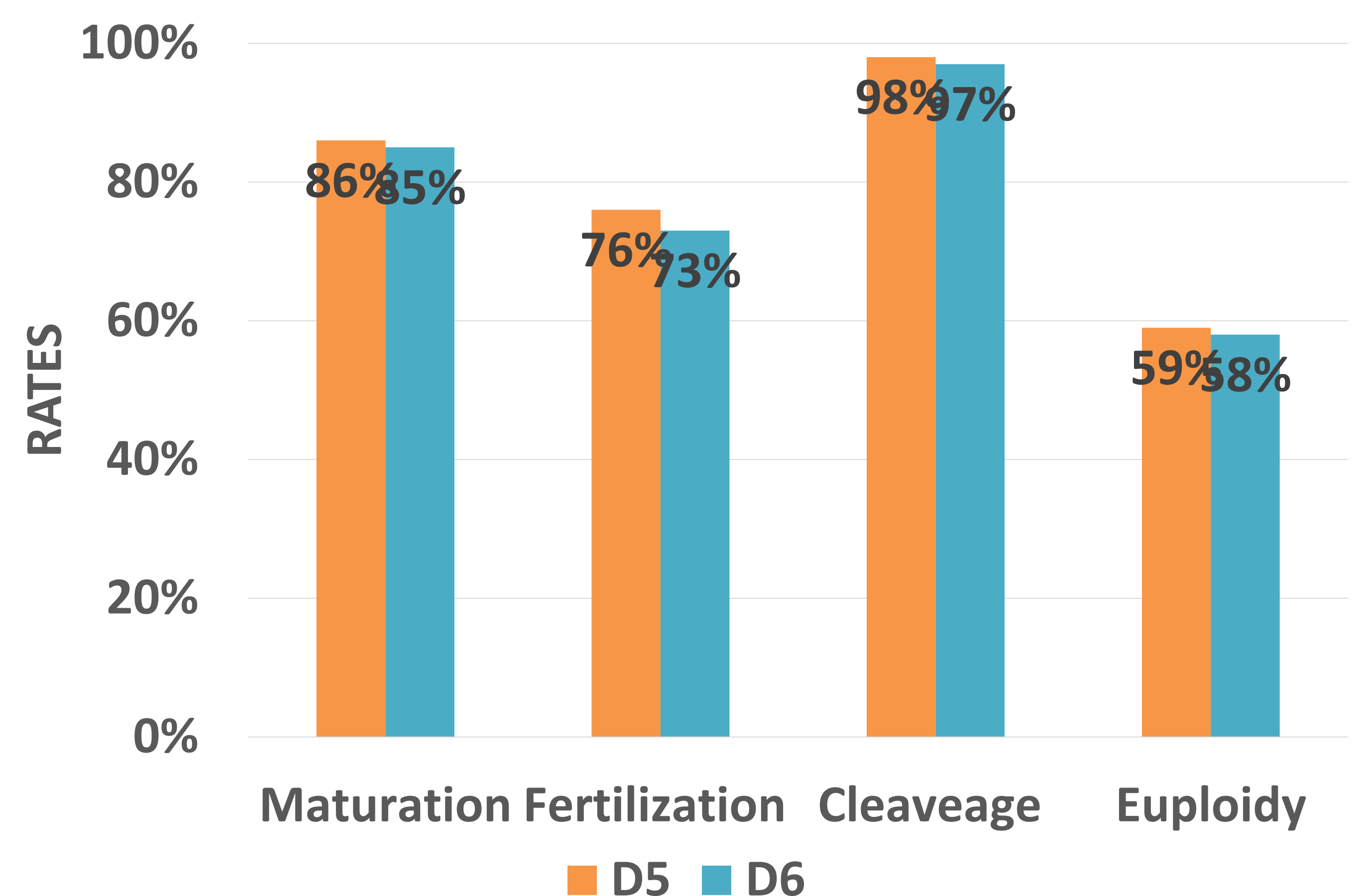


Table 1

Control variables	Chisq	p.value
Day of transfer (D5/D6)	0.3155	0.574
ICM quality (A, B, C)	1.2171	0.544
TE quality (A, B, C)	9.0762	0.028
Women Age (years old)	1.5971	0.206
BMI (kg/m^2)	1.9670	0.161
AMH (ng/ml)	0.1843	0.668
FSH basal levels (mIU/ml)	0.0098	0.921
N° oocytes collected	0.0197	0.883
N° oocytes inseminated	<0.0001	0.990

More blastocysts with ICM and TE grade A were transferred on D5 compared to D6 FET cycles, however, clinical outcomes were not statistically significantly different (**Table 2**).

Table 2

	D5 FET	D6 FET	p value
ICM quality A blastocysts	27.0%	17.0%	0.001
TE quality A blastocysts	29.0%	15.0%	0.001
Pregnancy rate	70.9%	64.4%	0.251
Miscarriage rate	5.7%	6.7%	0.804

Conclusion

Higher TE quality increases pregnancy rates, irrespective of the day at which blastocyst biopsy is performed.

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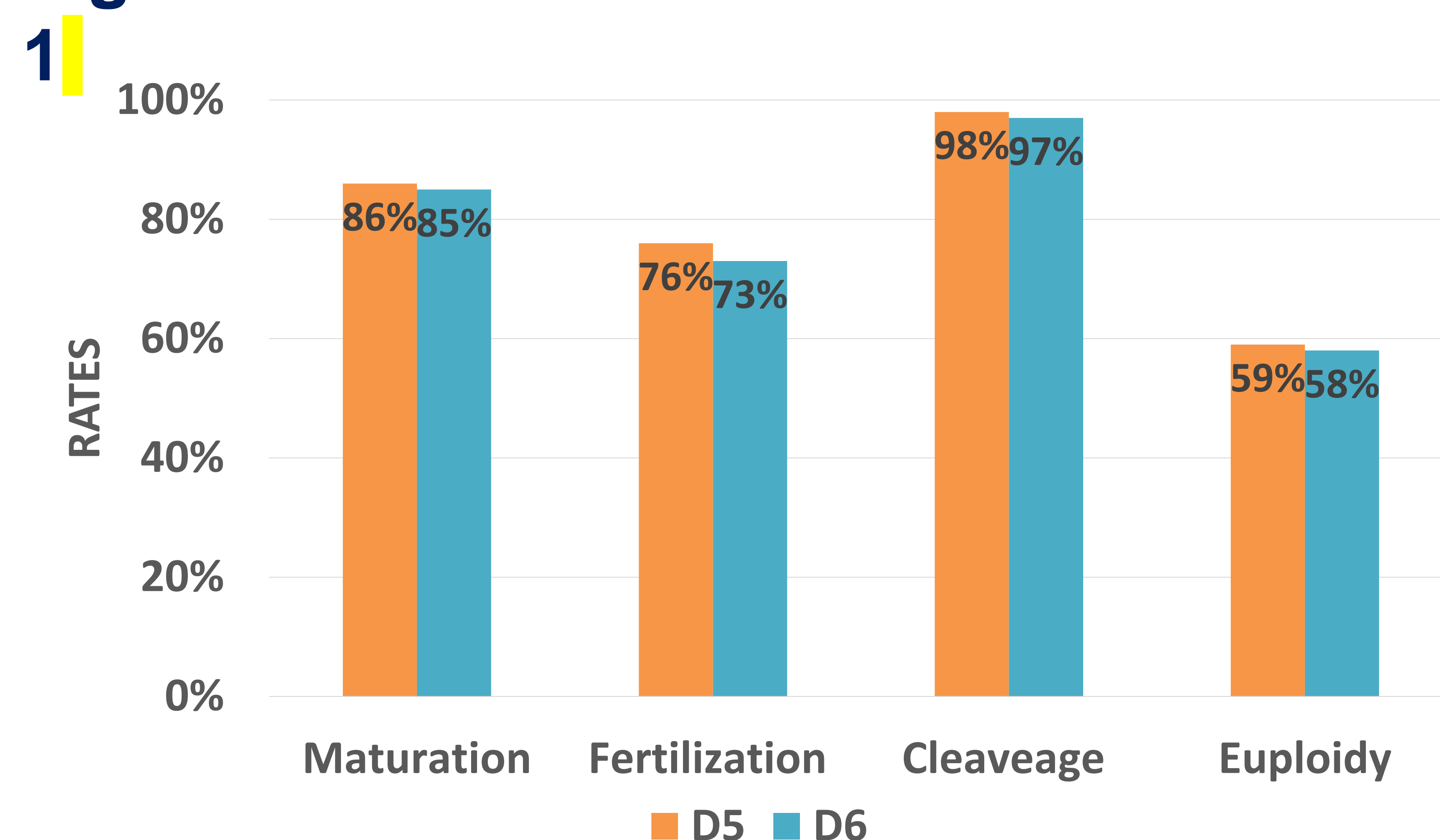
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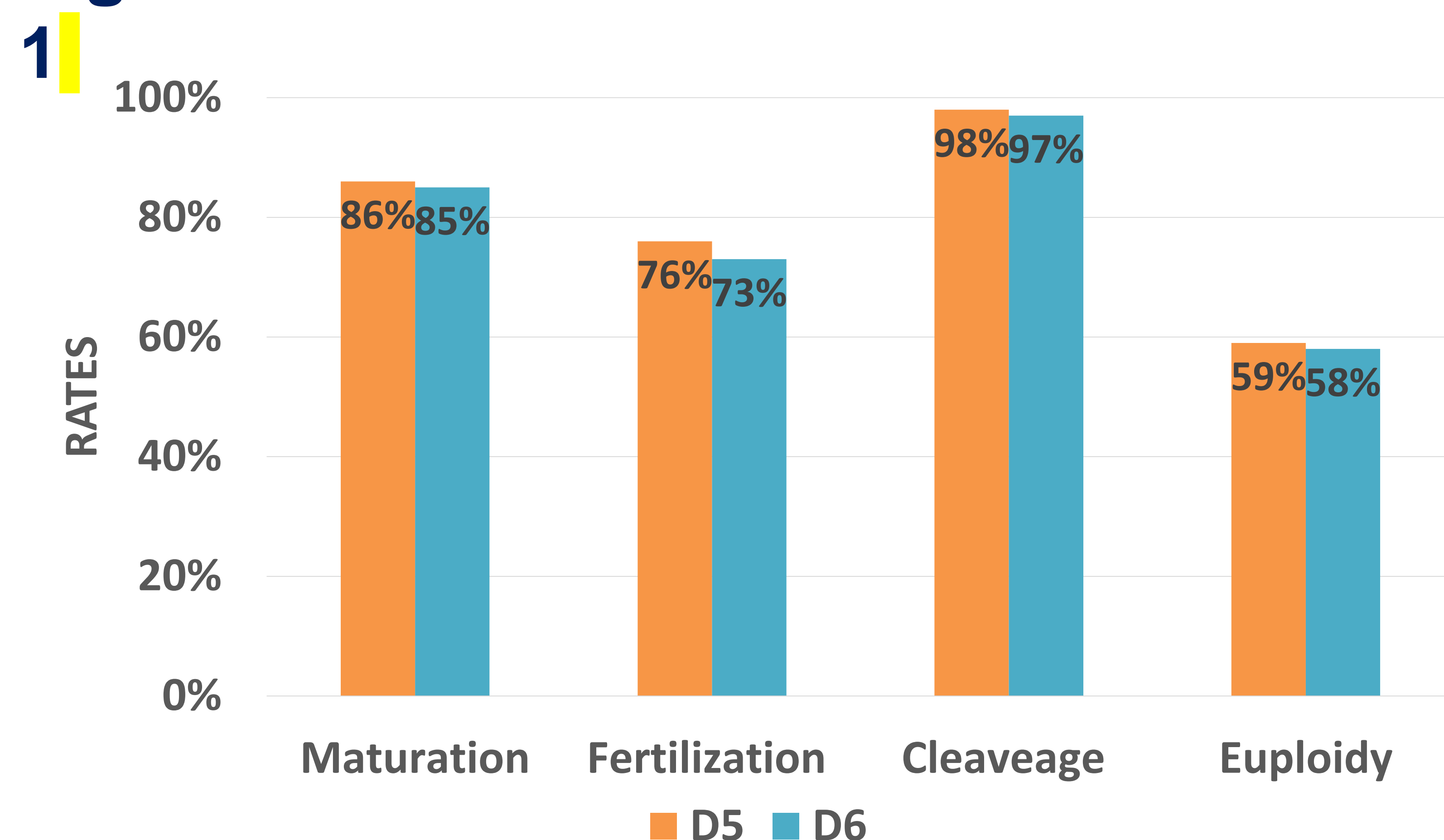
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