



SEXED SEMEN IN SHEEP – A FRESH APPROACH

SHEEP BREEDERS ROUND TABLE 2024

Ben Burton BVM&S MRCVS

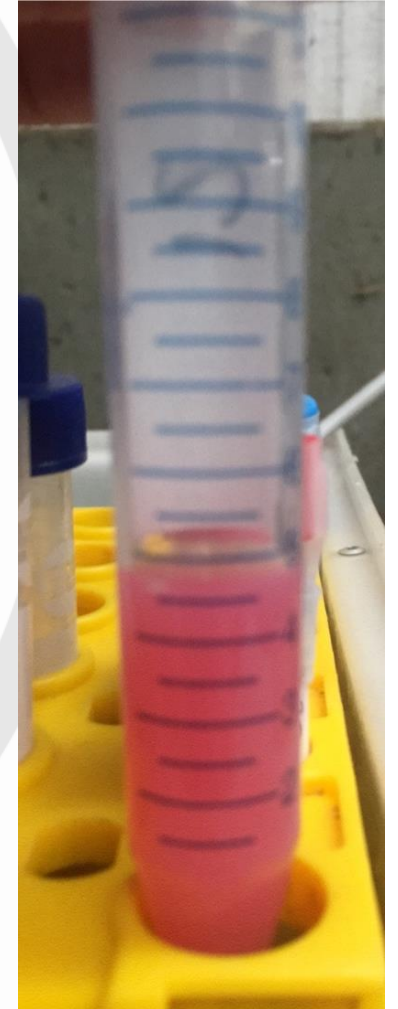
Sex Sorted Semen

- What is it?
- How is it produced?
- How is it used?
- Does it work?
- How much is it?
- Why should we use it?



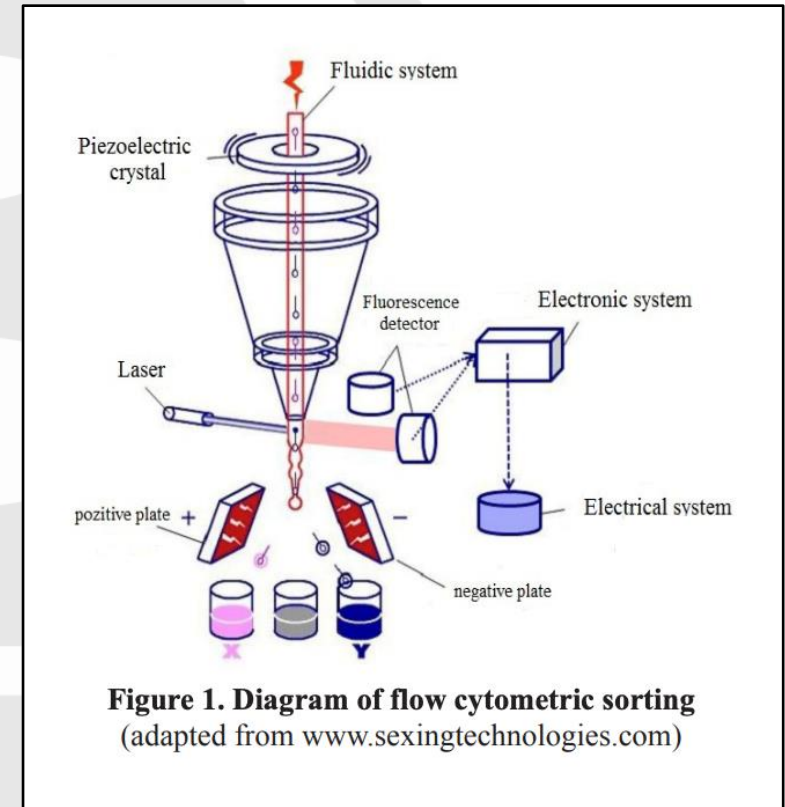
Sex Sorted Semen – What is it?

- ❑ Semen that has enrichment of one sex
- ❑ Conventional semen roughly 50:50 ratio male:female
- ❑ Sexed product 90 – 95% Male or Female depending on client choice
- ❑ Started commercially in the UK in bulls by Cogent
- ❑ Live offspring from Rabbits, Cattle, Pigs, Sheep, Horses, Humans, Buffalo, Elk, Dolphin, Dog, Cat, Deer and Goats



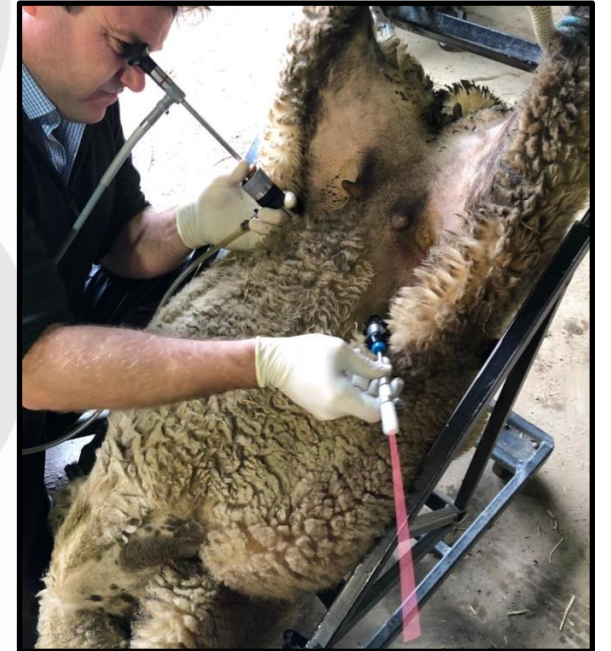
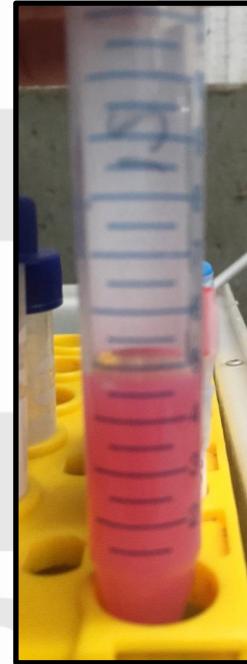
Sex Sorted Semen – How is it produced?

- Modified flow cytometry
- Raw semen extended and stained
- Cells in individual droplets and orientated
- X carrying (female) spermatozoa 4.1% more DNA
- Laser detects difference in fluorescence
- Charge applied – electrostatic shedding gate
- 30,000 cells/second – 9,000 viable sorted sperm/second.



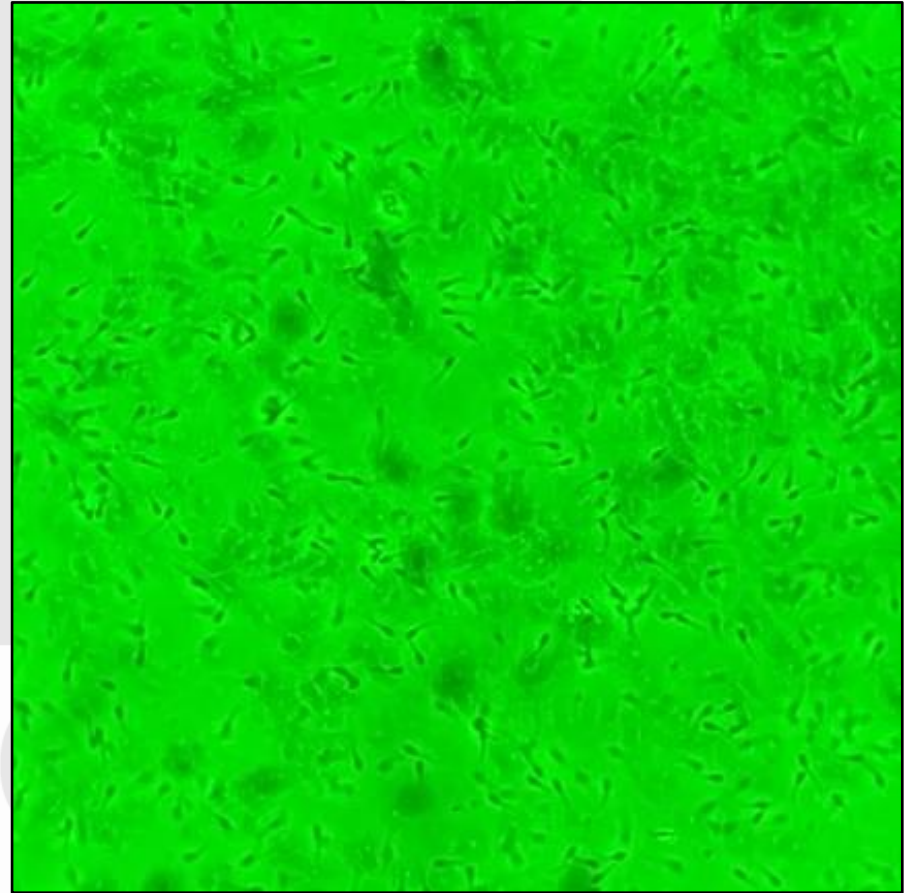
Sex Sorted Semen – How is it used?

- Fresh or Frozen
- 2M, 4M or more...?
- Synchronised, fixed time AI
- Laparoscopic Artificial Insemination



Sex Sorted Semen – Does it work?

- Variable
 - ▣ Between Farms
 - ▣ Between Sires
 - Low insemination dose
 - Male factor infertility
- Functionally superior sperm population
- Als vs ETs



Video Courtesy of Hendrik Du Toit, AB Europe

Sex Sorted Semen – Does it work?

Sorting Date	Dose (2M/4M) Fresh	Insemination Method	N·AI'd	N·Held	CR %	Hold Rate %	N·Males	N·Females	Gender Accuracy
23/10/2019	2M	Laprosopic	30		69%				
	4M	Laprosopic							
29/10/2019	2M	Laprosopic	200		71%	185 % LP			
	2M	Laprosopic							
	2M	Laprosopic							
30/10/2019	2M	Laprosopic	56	44	78.6	200	3	85	96.6
	2M	Laprosopic	87	69	79.3	200	2	136	98.6
05/11/2020	2M	Laprosopic	200		43%				
	2M	Laprosopic							
	2M	Laprosopic							
12/11/2020	2M	Laprosopic	150		65%				
	2M	Laprosopic	80		85%				
25/10/2021	2M - Y	Laprosopic	31	6	20%				
	2M - Y	Laprosopic	22	4	50%				
	2M - Y	Laprosopic	14	3	21%				
22/11/2021	2M	Laprosopic	94	40	43%				

Data Courtesy AB Europe Ltd.

Sex Sorted Semen – How much is it?

Ovine Sort Charges 2024 (ex VAT)	
Day Rate per ram inc 50 x 2M doses @ Standard Purity (>90% purity)	£750
OR 25 x 4M doses OR 15 x Frozen doses (straws@ 6M)	
Additional 2M doses	£10
Additional 4M doses or Frozen doses	£20
Additional gender doses (ie X & Y sort) 2M/4M	£5/£10
Day Rate per ram inc 25 x 4M doses @ 95% High Purity	£1000
OR 15 x frozen doses (straws @6M)	
Additional 4M doses	£20
Additional frozen doses	£30

Cogent's pricing 2024

- Semen collection and delivery to Cogent within 3 hours of collection.
- Maximum of 3 Males sorted per session
- Sorted semen ready around 8 hours post sort
- Product viable for 48 hours
- Laparoscopic Artificial Insemination pricing varies between companies

Sex Sorted Semen – Why should we use it?

□ Pros

- ▣ More female replacements to select from
- ▣ More males for selection/sale
- ▣ Males with better feed conversion in feedlot scenario
- ▣ Reduction in lower value wether lambs from maternal/dairy breeds

□ Cons

- ▣ Cost – additional costs of semen and insemination
- ▣ MOET programs very mixed results
- ▣ Welfare – some concerns with Laparoscopic Artificial Insemination
- ▣ Possibility of unintended adverse genetic selections

Largely depends on a price differential between male and female progeny.

Acknowledgments

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