



Immobilizing sperm cells  
Elisabeth Kommisrud – Rasmus Lang-Ree

NØK July 2010

geno

100%

BioKapital

50%

100%

75%

33,3%

27%

BOVIBANK™

cryogenetics  
Preserving Aquatic Genes

 **SpermVital**

  
BioBank

  
genderguide

SpermVital is part of group of technology companies focusing on reproduction and genes.

 **SpermVital**

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The overall idea – prolonged shelflife of spermatozoa

Prolonged shelflife of sperm cells

Slow release after AI

Less critical timing of AI

Double AI can be avoided

AI in proestrus is OK

AI will reduce the extent of natural matings



## Milestones obtained

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2003: storage 24 hours ambient temperature, dissolved before AI

2004: storage 24 and 48 hours ambient temperature, both dissolved before AI, and AI undissolved 24 hours early

2005: storage 24 hours ambient temperature, AI 24 hours early

All above: liquid semen with different extenders etc

2007: new technology successfully combined with cryopreservation (-196°C)

2007, 2008: Field trials frozen semen

2009: Field trial, pilot

2010: Field trial, pilot

2010-2011: Large field trial

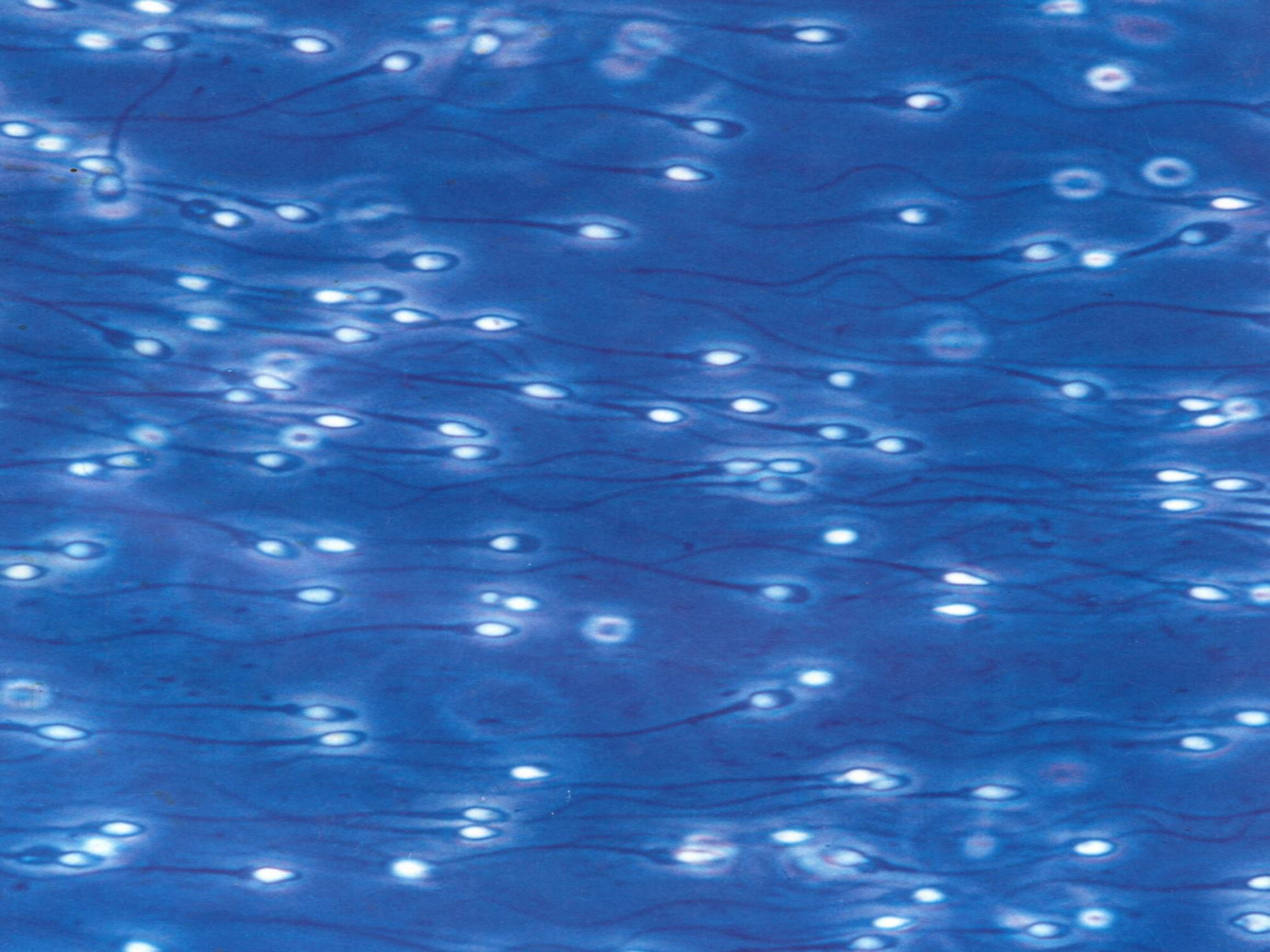
Patent application submitted July 2006

Application official January 2008

National applications 16 countries January 2009







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Field trial – pilot January 2010

SpermVital

Equal design used in 2009 and 2010

## Trial design – groups of animals

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- Testgroup 1: Controll – AI with ordinary processed semen at *normal timing*
  - Testgroup 2: Trial – AI with SV semen at *normal timing*
  - Testgroup 3: Trial – AI with SV semen *24 hours too early timing*
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- Only heifer or cows in same animalgroup, consisting of 3 animals, one from each testgroup

## Trial design

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- 5 bulls, split sample
- One animalgroup (3 animals) were to be inseminated before start of next animalgroup
- These 3 animals were put into testgroup 1, 2 and 3
- SAME BULL (and ejaculate) were used on those 3 animals
- Farmers continued to next animalgroup the same way
- Double insemination was NOT allowed!
- Animals returning in estrus three weeks later were inseminated ordinary



# Farmers' registrations and reporting on AI

Registrering - feltforsøk langtidsholdbar sæd

Eier

					Brunstobservasjoner, evt. blødning				Merknader
Dyr nr.	Ins.dato /kl.	Okse nr.	Ins. nr.	Gr. nr.	Dagen før ins.	Ins. dag	Dagen etter ins.	To dager etter ins.	




## Number of animals needed

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- Significans 0,05, Strength 90 %

p1	p2	n
0,7	0,71	35767
0,7	0,72	8849
0,7	0,73	3890
0,7	0,74	2163
0,7	0,75	1367
0,7	0,76	937
0,7	0,77	679
0,7	0,78	513
0,7	0,79	399
0,7	0,8	318
0,7	0,81	259
0,7	0,82	214
0,7	0,83	179

p1	p2	n
0,63	0,64	39861
0,63	0,65	9903
0,63	0,66	4372
0,63	0,67	2441
0,63	0,68	1550
0,63	0,69	1068
0,63	0,7	778
0,63	0,71	590
0,63	0,72	462
0,63	0,73	370
0,63	0,74	302
0,63	0,75	251
0,63	0,76	211

- Total number of animals inseminated: 252
  - All AI reported to Dairy Milk Recording System
  - Manual examination per rectum approx six weeks post AI
- Number of animals examined or returned in heat: 243
  - Number of heifers: 92
  - Number of cows: 151
- Overall pregnancy rate: 68,2 %
- Pregnancy rate heifers and cows resp., 71,7% and 66,2%
- No difference between groups

## Conclusion and further R&D

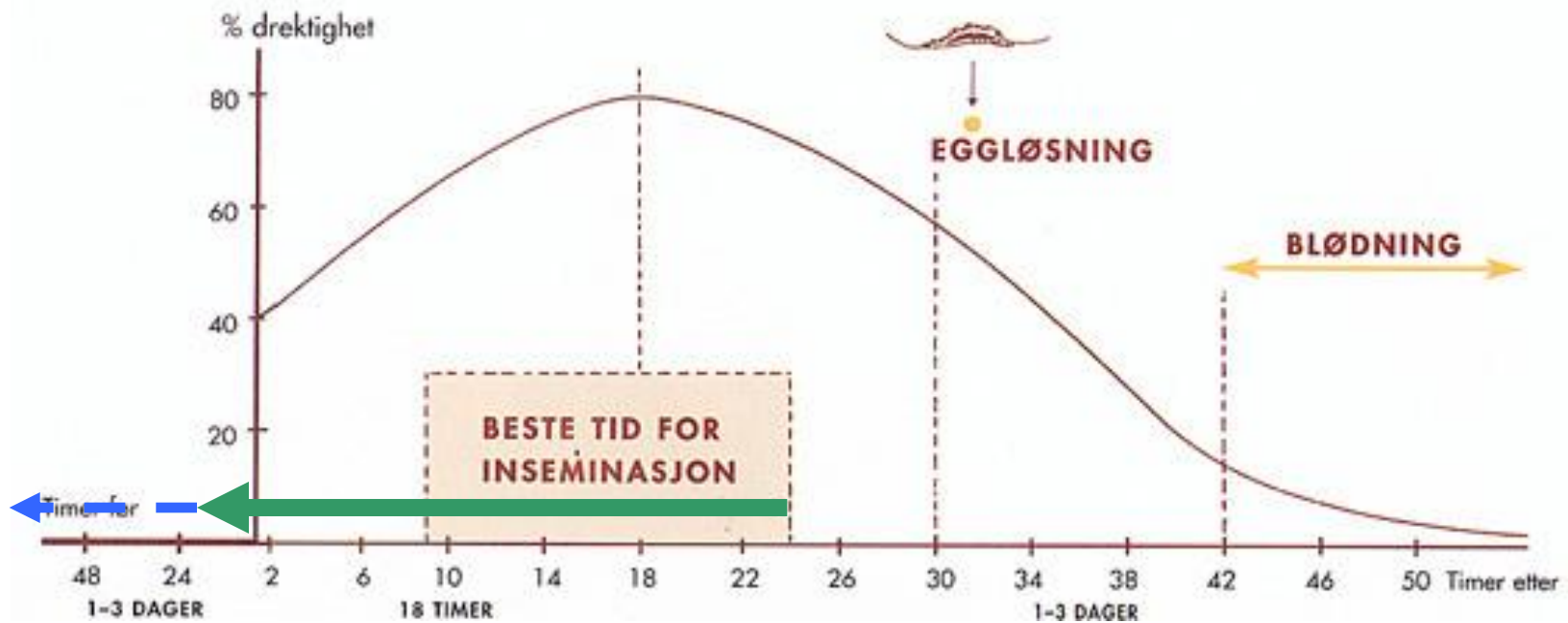
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- SV-semen technology works out as expected!
- Number of animals is too small to get significant results
- Large field trial designed
  - Semen production June
  - Split sample, 16 young bulls, 2000 doses each, blinded, all of Norway
  - AI from late August
  - Results from November....
- R&D project parallell





## Estrus and optimal time for AI





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Sp vil dis  
SVs gaup

LANDBRUK · 6-7

## Norsk sædoppfinnelse kan endre hele verdens storfeavl

### Ny teknologi dobler oksesædens levetid

- Det var en revolusjon da man fant metoden med å fryse ned sæd på 60-tallet. Siden har det skjedd veldig lite. Dette er den største nyheten på dette området

siden da, sier forskningssjef Elisabeth Kommisrud i avlsorganisasjonen Geno. Sammen med Sintef har de utviklet en ny metode for å inseminere kviger.

Kari Gåsvatn  
er kommentator i Nationen.

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### Bortfesterne får ny sjanse i retten

Tomtefesteloven ruller videre i rettsvesenet. I år kan Høyesterett åpne for avgiftsøkninger for feste-tomter.

\* LANDBRUK · 10

### Krever økte satser for nødslaktning

Bondelaget ber Landbruksdepartementet revurdere satsene for erstatning når myndighetene krever nødslaktning eller innfører andre restriksjoner på husdyrproduksjonen. Satsene er ikke blitt justert siden 2003.

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FOTO: SCAMPTIX

### Øks forårsaket ikke flystyrt

Nordlendingene er så spesielle at de overlever det meste. Også forsøk på å styrtet et fly i Bodø i 2004.







Th. Kuhn