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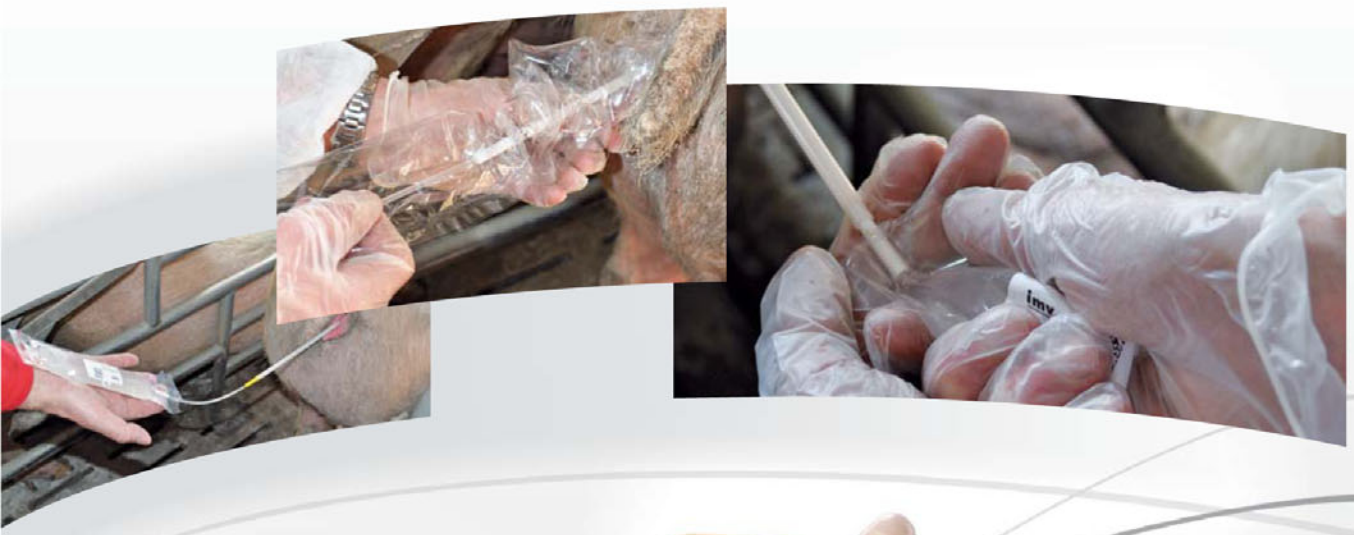
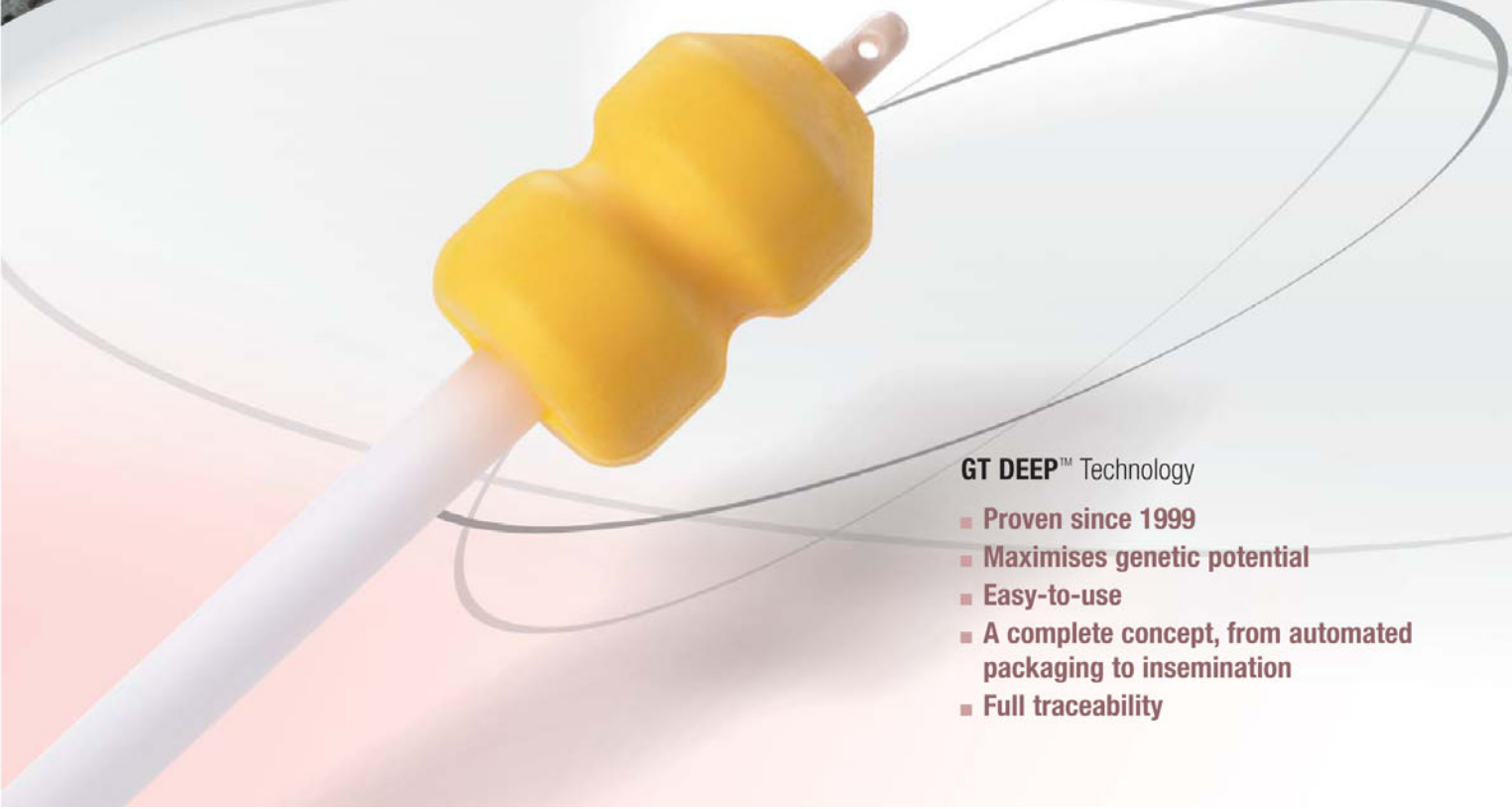
# GT DEEP™ concept

## Post-cervical Insemination by IMV



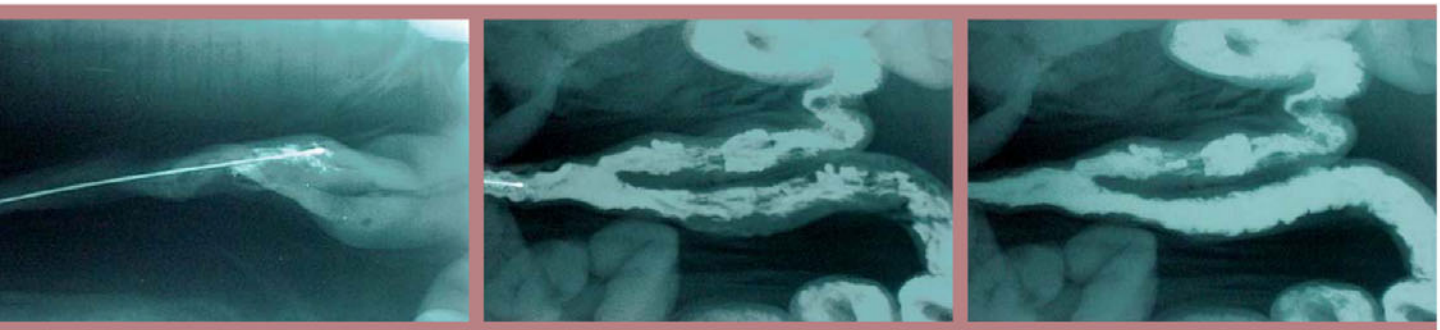


**GT DEEP™ Technology**

- **Proven since 1999**
- **Maximises genetic potential**
- **Easy-to-use**
- **A complete concept, from automated packaging to insemination**
- **Full traceability**

# GT DEEP™ concept

## Post-cervical Insemination by IMV

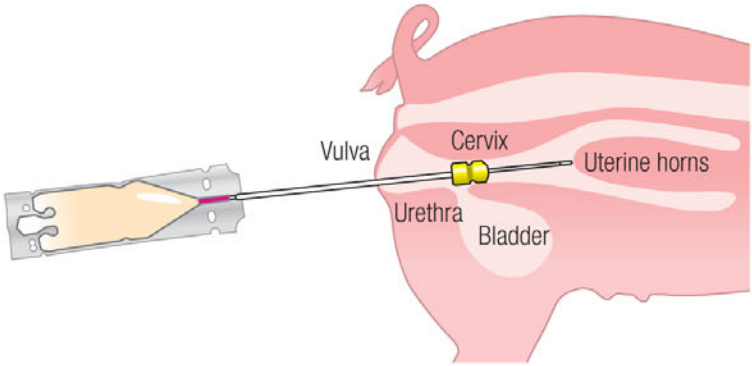


Beginning of Artificial Insemination (AI) | 1 minute after AI | 2 minutes after AI

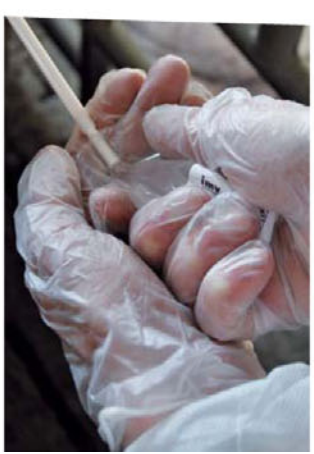
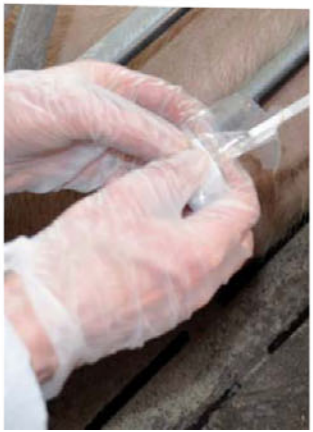
### GT DEEP technology

A pioneer of post-cervical artificial insemination (PCAI) of sows, IMV Technologies has developed a full concept of post-cervical insemination, from packaging to insemination. This technique, patented in 1985, allows the introduction of semen 20 cm beyond the cervix, and limits spermatozoa loss.

Thanks to this experience, know-how and many partnerships, IMV Technologies' PCAI concept has become a worldwide standard.






# GTB Bags

## Perfect fit with any type of catheter

- Direct connection without additional connector
- Leak-proof connection

## Perfect preservation conditions

- Two-layered film with guaranteed non-spermicidal properties
- Increases conservation time (flat storage)
- Sanitary: tip is protected until AI

## Compact and practical

- Space saving of up to 15%
- Easy-opening, no tool required

### GTB Bags [1]

Capacity: up to 90 ml
Design optimized for traditional insemination and hands-free use

### Mini GTB Bags [2]

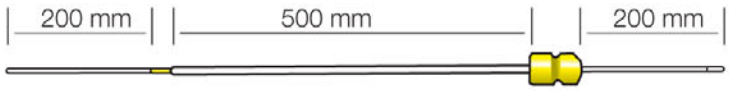
Capacity: up to 40 ml
Special design for PCAI
Allows dose emptying by simple pressure


# IMV Catheters

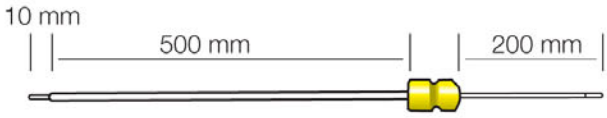
As a leader in this field, IMV Technologies has developed a range of PCAI catheters that combines ease-of use, efficiency and quality of manufacturing.

- Atraumatic: PCAI catheter tip is completely smooth, without any asperities
- Sperm friendly: tip assembly without glue
- White tip to display the presence of any blood
- Available with or without connector

**GT DEEP™**




**Deep Goldenpig™**




# Automated Packaging

IMV offers a full line of packaging systems for GTB bags.

- Flexible: fully compatible with GTB or Mini GTB bags
- Guaranteed traceability
- Sanitary: easy to clean, and optimal use of disposable solutions
- Easy-to-use and precise (+/-1ml)
- Reliable

### GTB 1000™ [1]

Automated filling, sealing and labeling machine

### GTB 600™ [2]

Semi-automated filling and sealing

### GTB 250™ [3]

Manual filling and sealing



# Bibliography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P.F. Watson, J.R. Behan – **A field investigation of intra-cervical insemination with reduced sperm numbers in gilts** – *Theriogenology 66 (2006) 338–343*

Sasha Gibson, MSc; Robert J. Tempelman, PhD; Roy N. Kirkwood, DVM, PhD – **Effect of oxytocin supplemented semen on fertility of sows bred by intrauterine insemination** – *Journal of Swine Health and Production – July and August, 2004*

Donald G. Levis, Scott Burroughs and Sara Williams – **Use of Intra-Uterine Insemination of Pigs: Pros, Cons & Economics** – *The Ohio State University, Columbus, Ohio 43210-1095, Danbred USA, Dorchester, Nebraska 68343, Institute of Theriogenology, Faculty of Veterinary Science, National University of La Plata, La Plata, Argentina*

Kakanang Buranaamnuay, Termpong Wongtawan, Sutthatip Masuwatana, Padet Tummaruk, Mongkol Techakumphu
**Intra-uterine and Deep intra-uterine Insemination using Cryopreserved Boar Semen in Spontaneously-ovulating Sows**
*Thai J. Vet. Med. 2010 40(2): 215-219.*


## Results from P.F. Watson & J.R. Behan 2002

**Table 1**

A comparison of fertility and fecundity of sows after artificial insemination twice in a single oestrus with a standard device (Goldenpig®: control) and a novel deep insemination device (Deep Goldenpig™)

| Device | Sperm dose (Billions) | Pregnancy (%) | Farrowing (%) | Litter size (*n*) | Number born live (*n*) |
|---|---|---|---|---|---|
| **Goldenpig®** | 1 | 66.2 | 65.8 | 10.3 | 9.0 |
| | 2 | 91.1 | 91.8 | 12.6 | 10.9 |
| | 3 | 91.3 | 91.1 | 12.5 | 10.9 |
| **Deep Goldenpig™** | 1 | 88.7 | 86.9 | 12.1 | 10.9 |
| | 2 | 92.6 | 92.5 | 12.3 | 10.8 |
| | 3 | 91.8 | 90.5 | 12.3 | 11.0 |
| **Total *(N)*** | | **3 230** | **3 201** | **2 768** | **2 768** |

## Results from P.F. Watson & J.R. Behan 2006

**Table 2**

A comparison of fertility and fecundity of gilts after insemination twice in a single oestrus with the novel gilt catheter with different sperm cell numbers

| Sperm dose ($x10^9$) | Pregnant gilts (*n*) | Pregnancy (%) | Farrowing (%) | Mean Litter size (*n*) |
|---|---|---|---|---|
| 1 | 553 | 92.3 | 90.9 | 11.39 |
| 2 | 559 | 93.2 | 91.1 | 11.28 |

**Table 3**

Reproductive performance of sows inseminated with Goldenpig® (3.0 billion sperm cells) or DeepGoldenpig™ (1.5 billion sperm cells)

| Sows cycling by 7 days after weaning | | | | | | |
|---|---|---|---|---|---|---|
| | Number of sows | | | Avg piglets born per litter | | Fecundity index (born alive) |
| Sperm per dose | Inseminated | Farrowed | Farrowing rate, % | Total | Born alive | |
| **Goldenpig®** (3.0 billion) | 192 | 149 | 77.60 | 11.86 | 10.28 | 798 |
| **Deep Goldenpig™** (1.5 billion) | 189 | 144 | 76.19 | 11.70 | 10.55 | 779 |
| **Difference** | **3** | **5** | **1.41** | **0.16** | **0.27** | **19** |