



Innovive Inc

Disposable (recyclable) Caging System

What is Disposable Caging, Really!

**2011 Rodent Breeding and Colony
Management Seminar**
Lou Ristic- Senior Account Executive
Innovive Inc.

Agenda:

- Technology overview
- Disposable Cage Benefits and Value Proposition
- Containment Process with Innovive





TECHNOLOGY OVERVIEW



Innocage[®] Disposable IVC Caging

- Patented Thin Wall Cage
- Fully recyclable PET
- Irradiated and double bagged
- Snap-fit top forms airtight seal
- Card holders pivot to facilitate animal inspection
- Options for pre-bedded cages and pre-filled water bottles
- BPA Free



Five lid options / Three Delivery Options for Innovive Disposable Cage Bottoms:

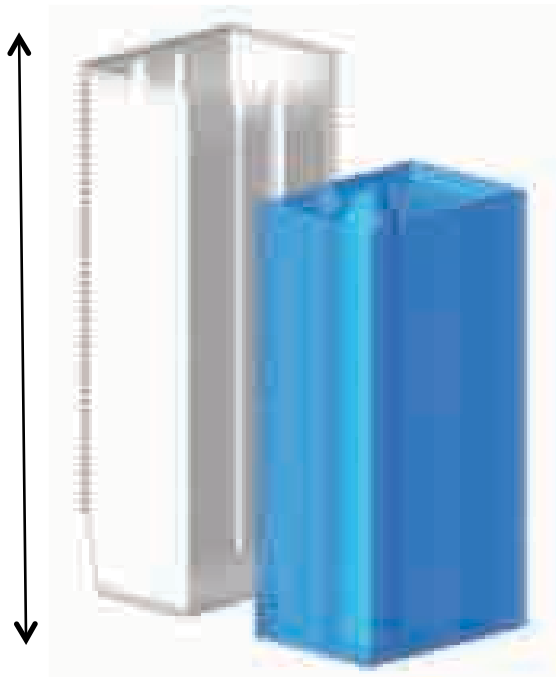
- **IVC Single Filter**
- **IVC Dual Filter**
- **IVC Containment**
- **Static**
- **Transport**
- **Innocage[®], empty**
- **Pre-bedded, corn cob**
- **Pre-bedded, ALPHA-dri**

Aquavive® Pre-Filled Water Bottles Add Convenience

- Pre-filled with acidified or RO water in FDA food-grade bottling facility
- Single use, fully recyclable
- Arrives double shrink-wrapped, with food-grade label over nozzle
- Peel off label and place in cage for ultimate convenience
- Also available for traditional wire bar caging using low-cost adapter



High Density Nesting Reduces Storage Space



100 units approx. 36"



Bag of 25 units pictured above

Density a Key Factor



72 Cages

Ergonomics and Efficiency



75 Cages

25 Cage Changes Under One Hood



25
cage changes
under 1 hood



100
INNOVIVE CAGES



10
OTHER CAGES



BENEFITS DISCUSSION



5 Key Dimensions to Consider When Selecting an IVC Vendor



ANIMAL
WELFARE



ECONOMICS



ERGONOMICS



PLANNING
FLEXIBILITY



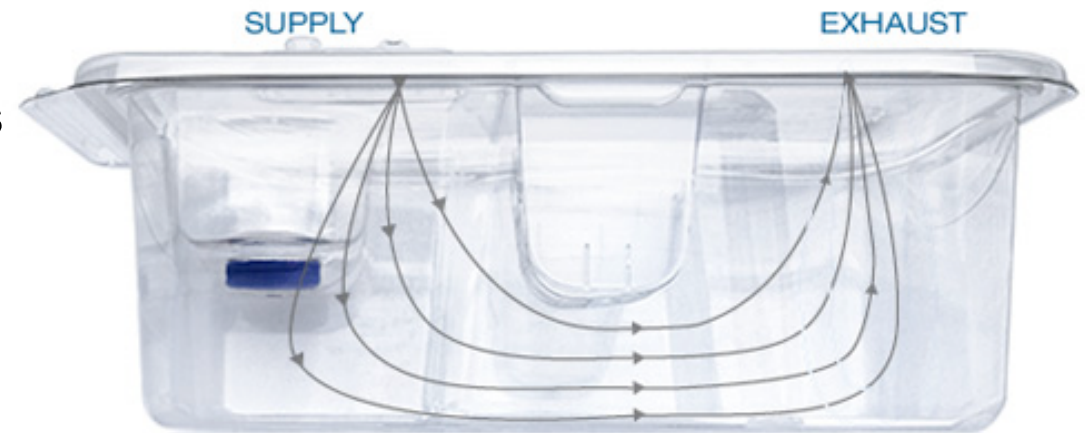
ENVIRONMENTAL

- **Animal welfare** – #1 priority and responsibility
- **Economics** – Animal facilities consume enormous resources
- **Ergonomics** – The health and well-being of animal care staff
- **Planning flexibility** – A key hidden driver of cost
- **Environment** – Carbon emissions, recycling, and more

Animal Welfare Starts with Airflow

Clean air and no draft in the cage

- **Dual ports** positioned in opposite corners of the lid provide significantly better evacuation of gas and moisture than existing designs
- **High performance** system can be easily adjusted to allow for positive / negative air flow options



DIRECTIONAL AIRFLOW / side view of the Innocage



Improved Breeding – 3rd Party Study

Caging Mouse Type	INNOVIVE IVC		TRADITIONAL IVC	
	Pregnant (%)	Good Mothers (%)	Pregnant (%)	Good Mothers (%)
NOD/Scid	89%	89%	74%	33%
Rag2Gamma	90%	90%	70%	50%
Shiverer	80%	80%	50%	33%
FAH/Rag2Gamma	90%	90%	60%	50%

% Pregnant = number of breeding pairs to become pregnant.

% Good Mothers = number of breeding pairs to become pregnant AND successfully raise all pups to maturity.



Economics and Value Proposition

Capital equipment and infrastructure costs:

- Racks and caging
- Washers, sterilizers, capital equipment
- Physical space required for the operation
- Design, architecture and lab planning fees
- CapEx utilization and low starting costs

Ongoing maintenance and operation expenses:

- Labor (washroom and technician)
- Utilities
- Maintenance and supplies
- Management



Improved Work Environment

Cage wash activities reduced/eliminated

- High turnover, grievance and absenteeism – a difficult work environment
- Unpleasant and time consuming to manage
- Unrelated to science
- Does not add value to the core mission

Technician workload made meaningfully easier:

- Light weight caging reduces strain and repetitive stress injury
- High density nesting
- Fewer trips to/from animal rooms
- Faster change outs



Maximum Planning Flexibility

Keep Your Options Open

- **Don't throw money at an uncertain future!**
 - Easily adapt to a program that is growing faster/larger than expected
 - Don't risk high costs of a program that might grow less than expected
- **Spend on infrastructure when and where your animal needs grow**
 - Better utilize capital expenditures
 - Have the ability to relocate/reconfigure at minimal expense/disruption
- **Single-sided racks and auto-watering options increase flexibility**



Simplified Processes Reduce Risk

- Disposable cages are **produced in a clean environment** before being irradiated and double-bagged using tightly controlled process
- **No reliance on washroom staff** or water temperature to ensure cages are fully cleansed 100% of time
- Dirty cages can be sealed under a hood and taken **directly out of facility**
- **Reduce/eliminate dirty hallway** traffic
- **Fewer process** steps leads to:
 - Leaner operations
 - Decreased complexity
 - Less management time
 - Lower risk
- Some Innovative customers using technology to successfully combat existing problems



Environment: Innovive

The Innovive Disposable Rodent Caging System was designed around maximizing the end use recycling.

Our disposable rodent cages are made from **100% PET**, the most recyclable polymer available.

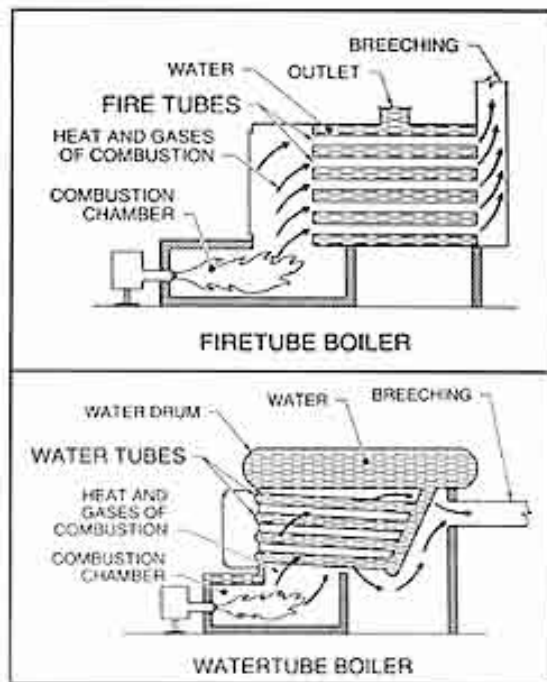
Our PET Cages have a high viscosity and are free of glue or other contaminants making them more valuable in the recycling stream.



Innovive System receives
Best New Product 2008 Award



Traditional Cage Wash Requirements - Steam



THE SOURCE OF HEAT FOR A BOILER IS COMBUSTION OF ANY OF SEVERAL FUELS, SUCH AS WOOD, COAL, OIL, OR NATURAL GAS



Traditional Cage Wash Requirements - Electricity



IT WAS ESTIMATED BY
THE ENERGY
INFORMATION
ADMINISTRATION THAT
IN 2005 86 OF
PRIMARY ENERGY
PRODUCTION IN THE
WORLD CAME FROM
BURNING FOSSIL FUELS.



Traditional Cage Wash Requirements – Water



- Tunnel Washer
- Bedding Dump Station
- Cage and Rack Washer
- Bulk Sterilizer

A MEDIUM SIZED CAGE WASH FACILITY OPERATING AN 8
HOUR SHIFT CONSUMES:

38,000 gallons of water/week

1,976,000 gallons of water/year



Traditional Cage Wash - Sewage Treatment



CONTAINMENT - PROCESS IS CRITICAL

□ The purpose of containment is to reduce or eliminate the exposure of laboratory workers, other persons, and the outside environment to potentially hazardous agents that are used in a laboratory environment.

□ Laboratory animal housing presents unique challenges for containment. Designing a comprehensive containment solution requires consideration of factors such as product features, materials flow and the number of process steps required.

□ Both the performance of the caging system and well-developed protocols are essential to risk management in these unique environments.

DISPOSABLE CONTAINMENT WE SIMPLIFY THE PROCESS

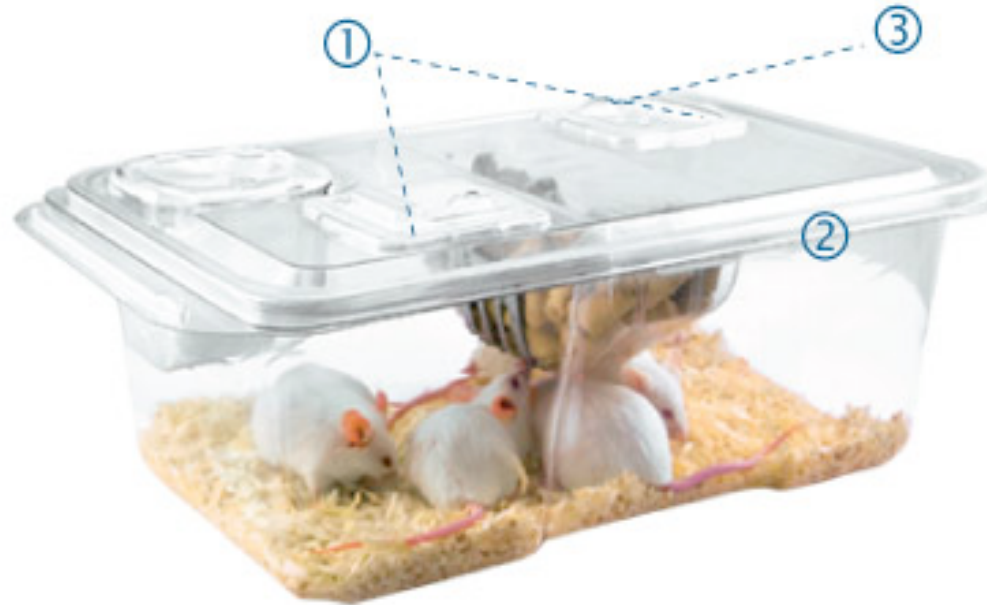
At Innovive we believe that any containment product is only as good as the procedures and processes associated with it.

Innovive DISPOSABLE CONTAINMENT CAGES offer facilities an opportunity to simplify containment operations by eliminating the additional process steps associated with washing and sterilizing traditional cages.

Facilities that use Innovive disposable containment caging benefit from a one-way material flow with cages taken directly from the hood to be incinerated or autoclaved and then disposed.

A new irradiated cage is guaranteed at every change

SUPERIOR CONTAINMENT CAGE DESIGN



1. HEPA-rated filter media.

2. Airtight seals.

3. HEPA-filtered vent equalizes pressure and allows short-term static ventilation.

4. SIMPLIFIED CAGE PROCESSING: new cages are used for every change-out, dirty cages are bagged and sealed under the hood; then, incinerated or autoclaved.

Traditional vs Innovative Containment Process



Reduced Process Steps
Fewer Personnel Involved
Less Training
Reduced Risk





Thank you!

