



**PERFORMAgene<sup>TM</sup>•LIVESTOCK**

**DNAgenOTEK**

*Superior Samples*

*Proven Performance*



***New method for Fast and Easy  
Collection of High Quality DNA  
from nasal samples***

**DNAgenOTEK**





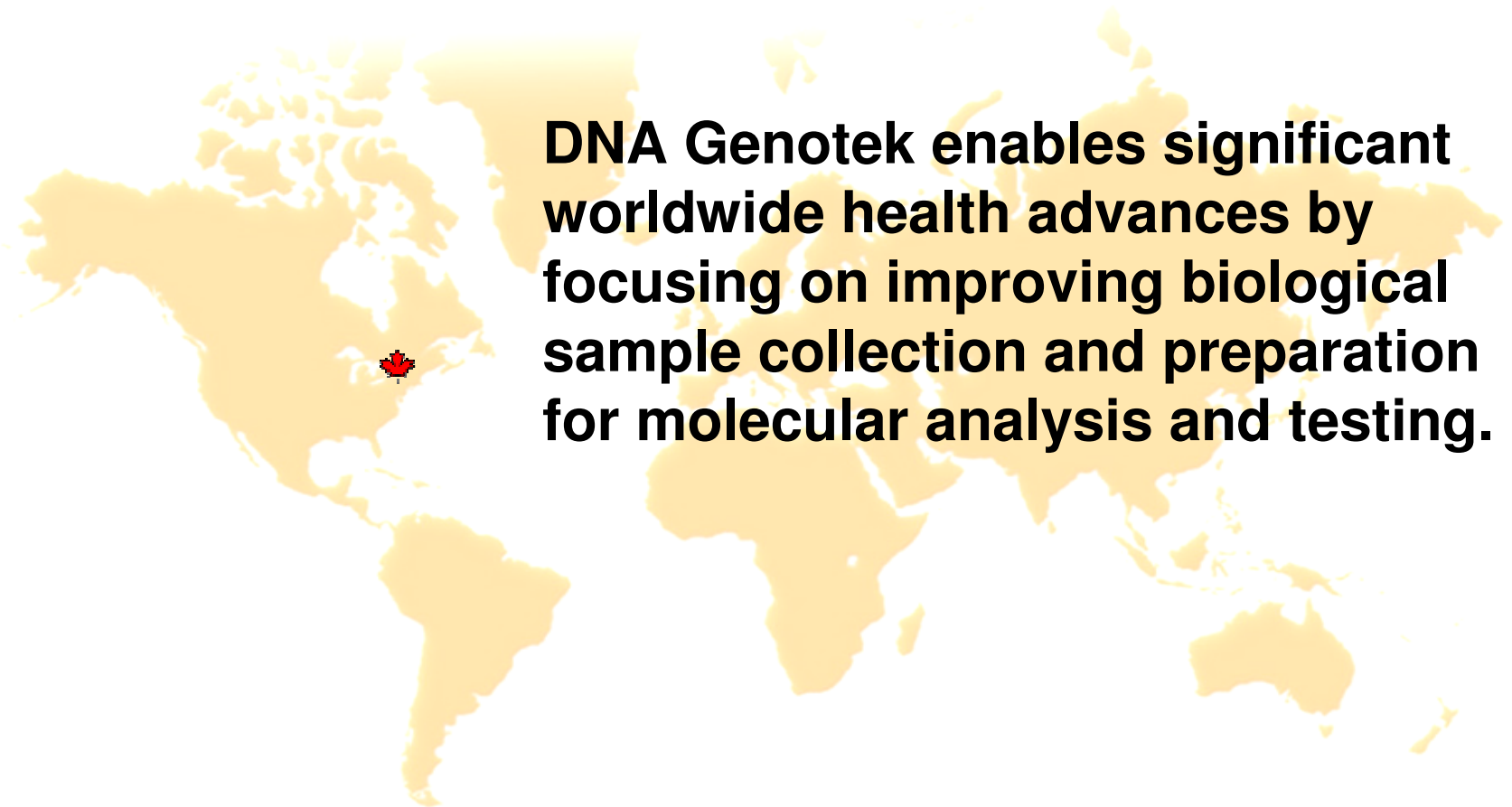
## Overview

- Who is DNA Genotek
- Sample Solution Overview:  
Performagene•LIVESTOCK
  - Collection
  - Transport & Storage
  - DNA Processing
  - Downstream Applications
- Questions?



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## Who is DNA Genotek?



**DNA Genotek enables significant worldwide health advances by focusing on improving biological sample collection and preparation for molecular analysis and testing.**



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***“... Canadian company has done for DNA collection what Google did for Web searches: made it ridiculously simple and efficient.”***

***Time Magazine, 12/05***





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# People Using our Products

## Academic Institutions



## Associations



## Laboratories



**4000+ Labs in over 85+ countries around the world**



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## Current Sample Solutions



**ORAgene<sup>®</sup>•DNA**



**ORAgene<sup>®</sup>•RNA**



**PERFORMAgene<sup>™</sup>•LIVESTOCK**  
For Bovine DNA Collection



**ORAgene<sup>®</sup>•ANIMAL**  
For DNA Collection





**PERFORMagene<sup>TM</sup>•LIVESTOCK**  
**Quick • Simple • Reliable**



**DNAgenOTEK**





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## Quick • Simple • Reliable



- ✓ All-in-one system for the collection, stabilization, storage and preparation of DNA from livestock nasal samples
- ✓ Average DNA yield 24.2µg
- ✓ DNA is stable for 1 year at room temperature



## Collection

## Transport & Storage

## DNA Processing

## Downstream Applications



# Performagene•LIVESTOCK Quick • Simple • Reliable

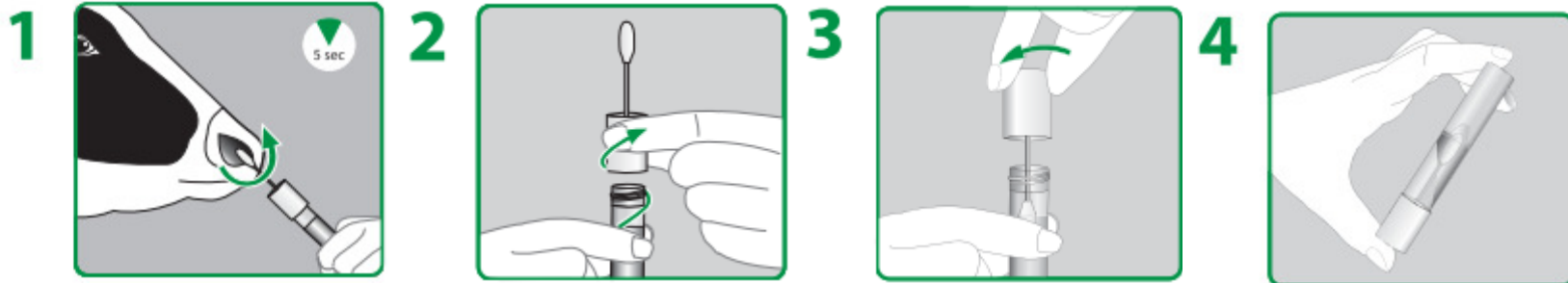
## Quick and Easy Sample Collection

### Integrated kit for DNA Stabilization from Nasal Samples



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## Collection Method



- Developed and validated with cattle
- Collection protocol tested on sheep, swine, goats, buffalo, alpaca and elephants
- [Nasal Collection Video](http://www.dnagenotek.com/Video/Performagene_Video.swf) - [http://www.dnagenotek.com/Video/Performagene\\_Video.swf](http://www.dnagenotek.com/Video/Performagene_Video.swf)



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## Real Life Collection



*"The kits were easy to use in a variety of conditions, including a few situations in which rural farmers were taking samples themselves, and logistically very convenient."*

*Guy Jacobs*

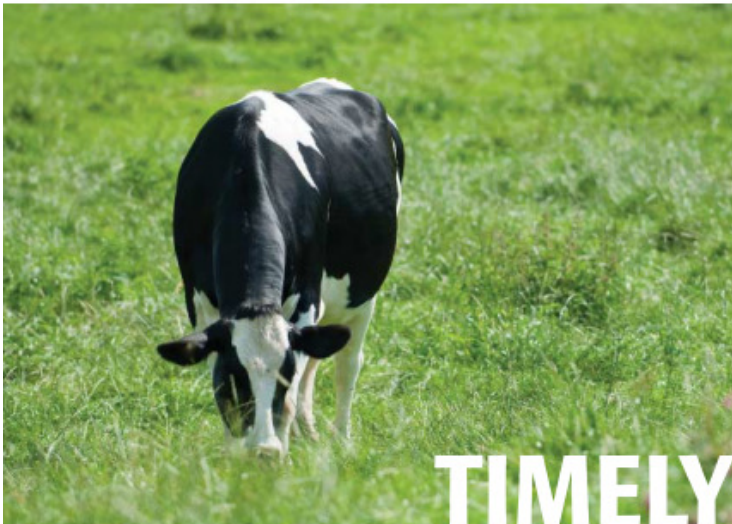
Performagene•LIVESTOCK kits being used in India for DNA collection of pygmy cattle. Photo complements of University of Cambridge.



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## Producer Feedback

- Questionnaires collected from 114 producers in Canada, US & UK
- Representative of large and small operations, average herd size = 189 cattle
- Total number of animals represented in survey = 20,600 cattle
- Information collected during routine parentage sampling and on-site visits



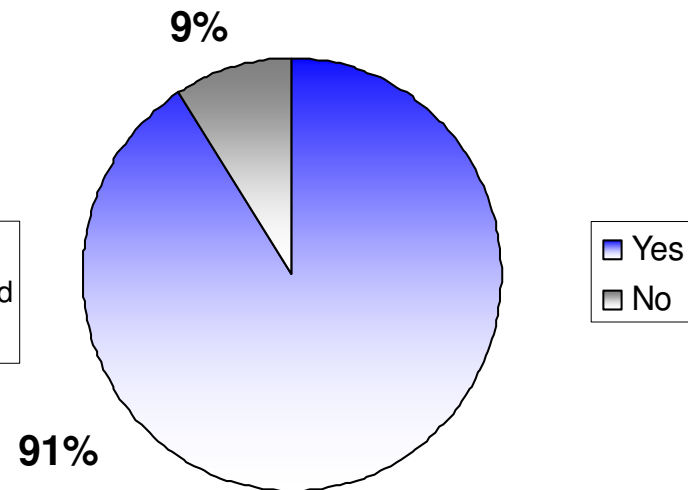
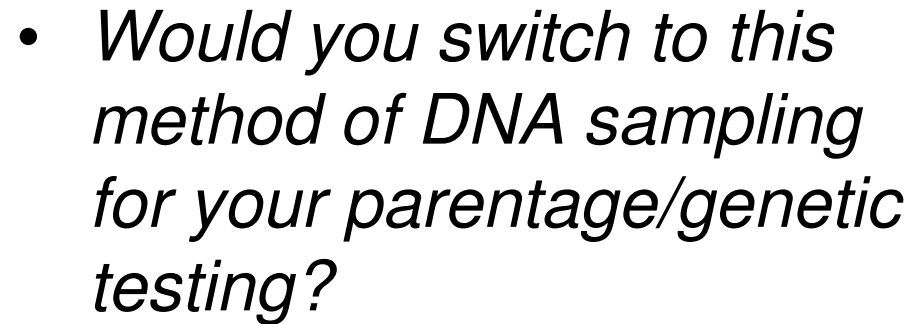
**TIMELY Innovation**

**DNAgenoteK**  
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[http://www.dnagenotek.com/pdf\\_files/MK-004\\_Timely%20Innovation%20Performagene%20Advertisement%20-%20Issue%201.0.pdf](http://www.dnagenotek.com/pdf_files/MK-004_Timely%20Innovation%20Performagene%20Advertisement%20-%20Issue%201.0.pdf)



- *How did you find using the nasal swab kit?*





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# The Lifecycle of a DNA Sample



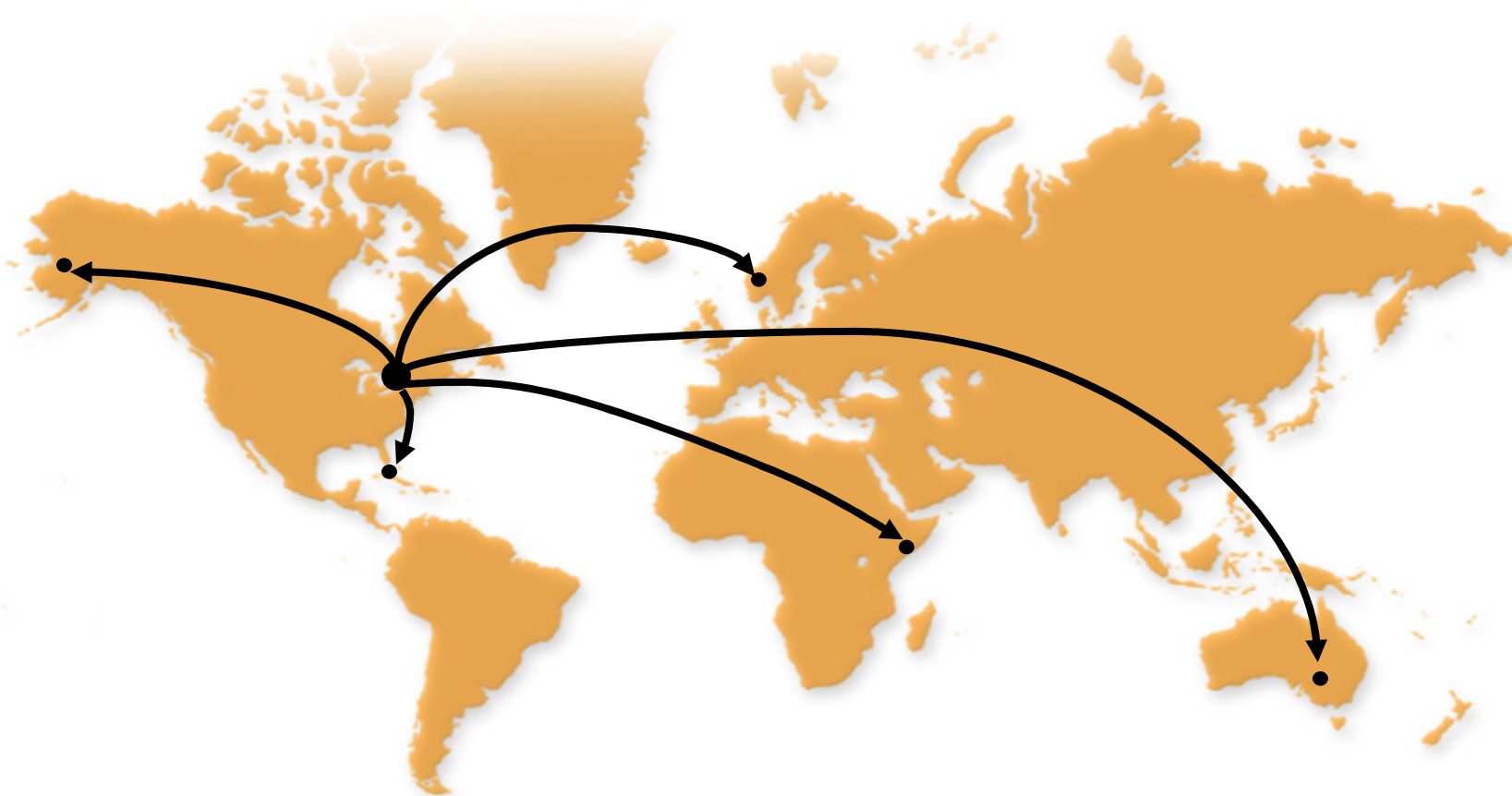
**Performagene•LIVESTOCK Quick • Simple • Reliable**

**Transport Samples Through the Post  
Stable at Room Temperature for 1 Year**



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## Enables Shipping to Various Locations





- Non-hazardous / non-toxic
- **“Exempt Animal Specimen”**
- Shipping accessory complies with International Air Transport Association (IATA) guidelines
- Minimal packaging for shipping is required





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## Sample Traceability

Collection Device



Ready for processing



- 1 barcode on the tube can be linked to animal identification
- Ideal for large scale studies
- Customizable barcodes and additional barcodes available





## Sample Storage & Usage

- 1mL sample for multiple assay and DNA banking
- DNA stable at Room Temperature for 1 year
- Banking DNA frozen indefinitely
  - Store in barcoded tube
  - Aliquot remaining sample into 96 well plate



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# The Lifecycle of a DNA Sample



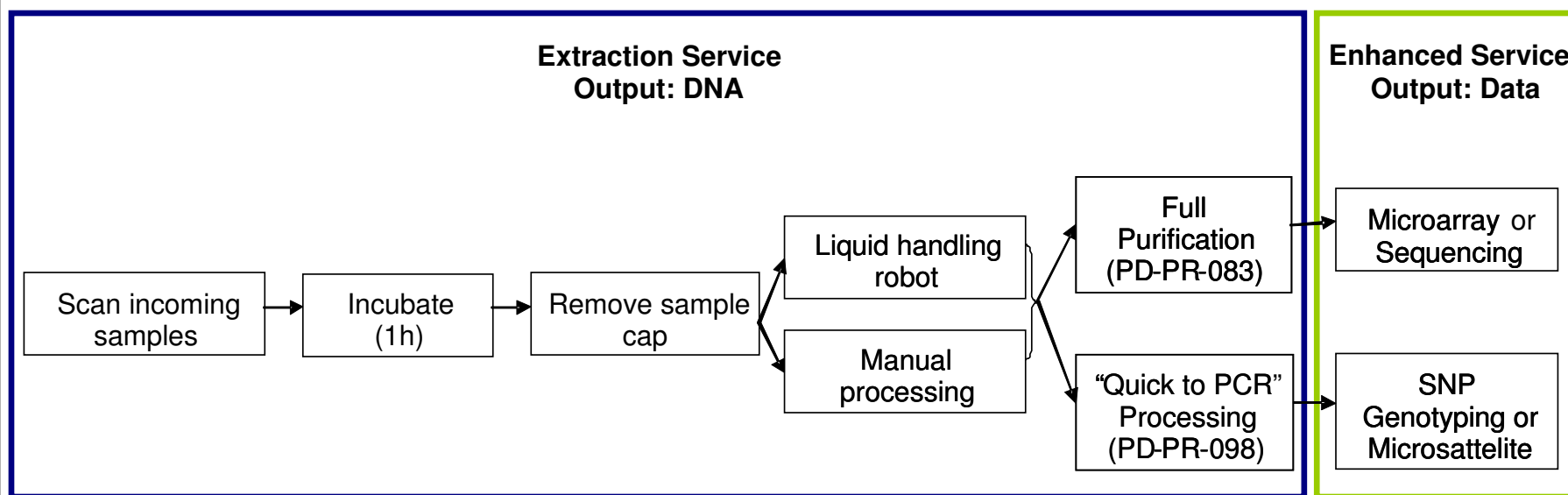
**Performagene•LIVESTOCK Quick • Simple • Reliable**

**Full Purification or Quick to PCR  
Ideal for Automated Sample Processing**



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# DNA Processing Methods





The diagram illustrates a three-step workflow for processing a sample. Step 1: A vial with a green cap and a label that reads 'Ready for processing' is shown. Step 2: A pipette is shown adding liquid to a multi-well plate. Step 3: A DNA double helix structure is shown, indicating the final product or analysis.

J.O. Niles, C.M. James, E.J. Maclean, and R.M. Iwasiow. High Yield, High Quality Genomic DNA From Cattle Nasal Samples Using Performagene™•LIVESTOCK. Plant and Animal Genome Conference **2010: poster**

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# The Lifecycle of a DNA Sample



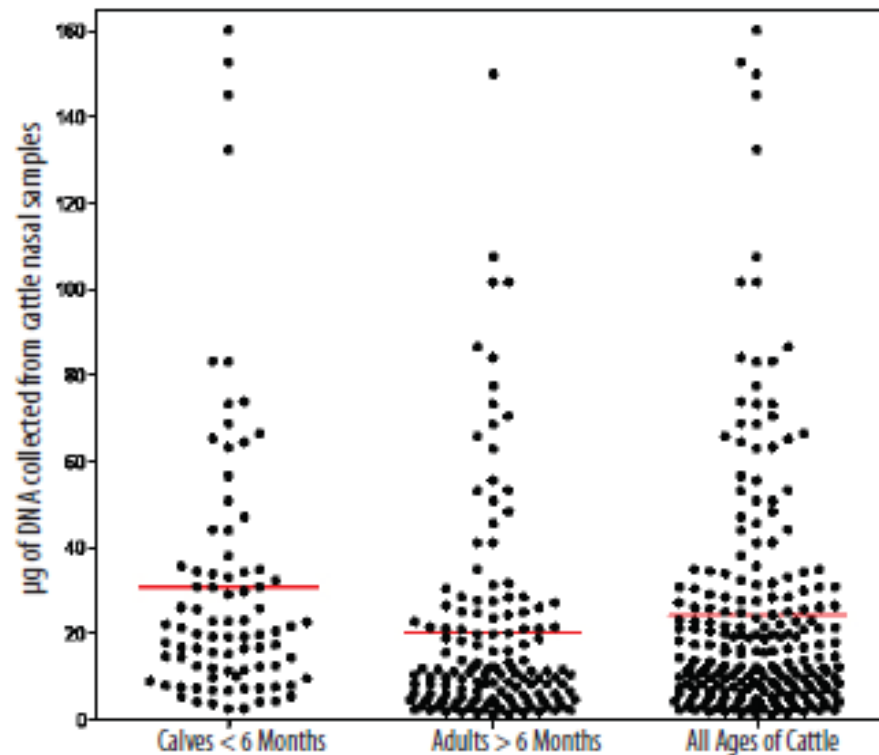
**Performagene•LIVESTOCK    Quick • Simple • Reliable**

**High Quality, High Quantity DNA  
Reliable on Downstream Applications**



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## DNA Yield & Quality



Breed of Cattle	Average amount of Total DNA (µg)
Holstein	24.0
Hereford	31.2
Brown Swiss	15.9
Simmental	21.9

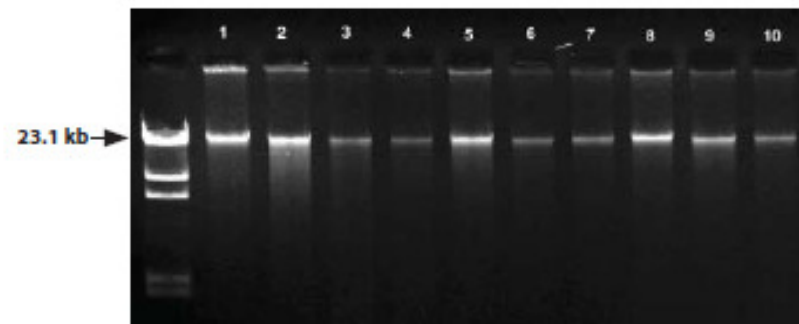


Figure 1: Scatter plot of DNA yield from 225 cattle (85 calves and 140 adults). The average amount of DNA is shown by the red line, calves = 31 µg, adults = 20.1 µg, total = 24.2 µg.

J.O. Niles, C.M. James, and R.M. Iwasiow. Quality, Yield, Performance and Bacterial Content of gDNA from cattle nasal samples collected and purified using Performagene™•LIVESTOCK. PD-WP-015 Issue 1.0 2009

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## Downstream Performance

Assay	Processing Method (Nasal)	Average Call Rate (Nasal)	Average Concordance (Nasal with Blood)	Average Concordance (Nasal with Hair)
<b>Sequenom® MassARRAY Analysis of Nasal</b>	<b>Quick to PCR</b>	<b>98.74%</b>	<b>99.49%</b>	<b>95.96%</b>
<b>Microsatellite Analysis ABI PRISM® Genetic Analyzer - Taqman assay</b>	<b>Quick to PCR</b>	<b>91.73%</b>	<b>100.00%*</b>	<b>100.00%*</b>
<b>Illumina BovineSNP50™ BeadChip</b>	<b>Full Purification</b>	<b>99.63%</b>	<b>100.00%</b>	<b>100.00%</b>

\* no calls not included in concordance calculation



J.O. Niles, C.M. James, E.J. Maclean, and R.M. Iwasiew. High Yield, High Quality Genomic DNA From Cattle Nasal Samples Using Performagene™•LIVESTOCK. Plant and Animal Genome Conference **2010: poster**





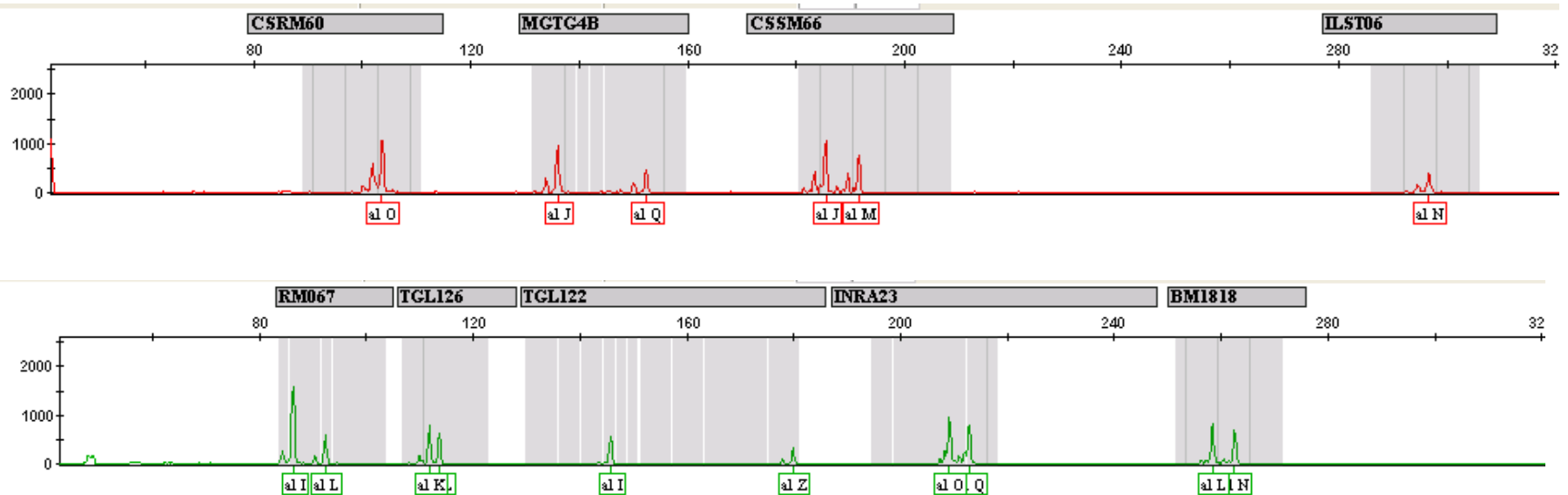
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**holstein UK**  
holstein & british friesland



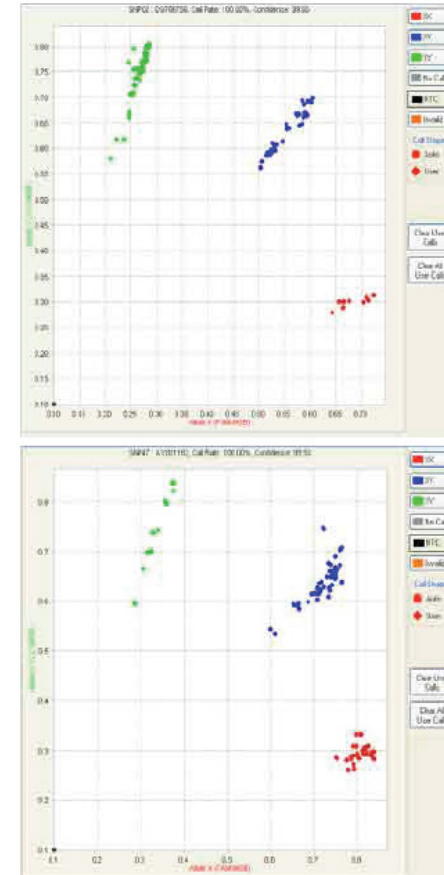
## Downstream Performance

- Microsatellite parentage analysis of 268 samples
- Quick to PCR processing method
- 97.8% call rates





- Fluidigm EP1™ system for high sample throughput SNP genotyping
- 48 samples run in duplicate
- 99% or higher call rates
- 100% concordance



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# Customization

- Packaging
- Barcoding



**holstein UK**  
holstein & british friesland

Manufactured for Holstein UK by  
**DNAgenotek**  
Ottawa, ON, Canada K2K 1L1  
Made in Canada.

**1**  
**IMPORTANT:**  
Enter tag # before opening package!

TAG #

A clean nostril provides the best DNA sample. However, traces of dirt or feed in the nostrils is acceptable. Ensure the collection sponge does not touch anything other than the animal's nostril to prevent contamination of sample.

**2**  
5 sec

**3**

**4**

**5**

**PERFORMAGEN<sup>™</sup> LIVESTOCK**  
For Bovine DNA Collection  
PG-100

For Animal Research Use Only.  
Store at room temperature 15-30°C  
Patents issued and pending  
U.S. Patent No. 7,482,116  
PRO-LB-030 Issue 1.0

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Partner

# DNA Genotek Partner Program

- Genomics Service Providers
- Diagnostic Service Providers
- Technology Vendors

[www.dnagenotek.com](http://www.dnagenotek.com)



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## Collection

## Transport & Storage

## DNA Purification

## Downstream Applications



# Performagene•LIVESTOCK Quick • Simple • Reliable

## From Collection to Downstream Analysis End-to-end Service and Support





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# Thank You!

## Questions?

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