### VEERU, Department of Agriculture

# Investigating Europe's largest milk recording database: Combining research and practical application PAN Livestock Services Ltd

## The milk recording database - NMR

National Milk Records (NMR) is Europe's largest milk recording organisation, collecting production data and milk samples from over 5,000 UK dairy herds every month. In excess of 6.5 million milk samples are tested each year for factors ranging from constituents to somatic cell count to disease status.

### **Practical application** – PAN Livestock Services

PAN Livestock Services Ltd (PAN) has worked closely with NMR since 1998 on the development of practical livestock information systems. Developments include Herd Companion (on-line analysis of milk recording data), InterHerd and InterHerd+ programs which are extensively used by farmers and their technical advisers across the UK.

### **Research expertise - VEERU**

The Veterinary Epidemiology and Economics Research Unit (VEERU), established in 1977 in the Department of Agriculture at The University of Reading, has worked closely with PAN since 1987. VEERU has extensive experience of analysing livestock production and disease data relating to animal health challenges faced by public and private livestock and veterinary services. VEERU is recognised by the Food and Agriculture Organisation of the UN (FAO) as a Reference Centre for Veterinary Epidemiology and Economics.

## **Combined expertise**

The practical commercial experience of PAN and the close working relationship with NMR ensures a thorough knowledge of the NMR milk recording database. Combining this with the analytical and research expertise at VEERU offers an unrivalled ability to research and investigate the contents of the NMR database for the benefit of the UK dairy industry.

### **Contact information**

Veterinary Epidemiology & Economics Research Unit (VEERU) / PAN Livestock Services Ltd.

School of Agriculture, Policy & Development,

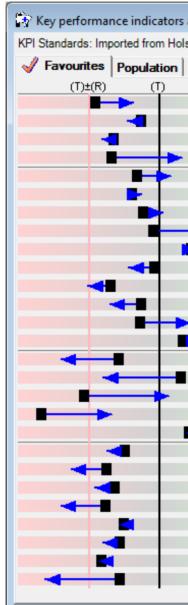
The University of Reading,

PO Box 237, Reading RG6 6AR.

panveeru@panveeru.net / james.hanks@panveeru.net www.panlivestock.com

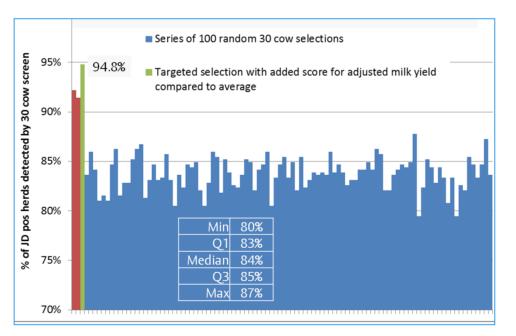
**1. Key Performance Indicators (KPIs) of UK Dairy herds** Each year since 2010 VEERU has analysed the performance of 500 milk recording herds. The herds are selected using random numbers to ensure they are a representative cross-section of all herds. These analyses have a growing number of applications:

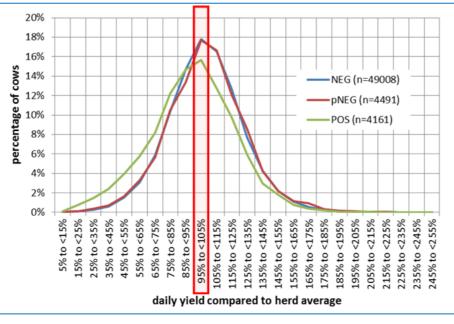
#### **1(a):** Target and range values for over 60 Key Performance Indicators for use in InterHerd+



### 2. Analysis of the NMR database for specific research questions

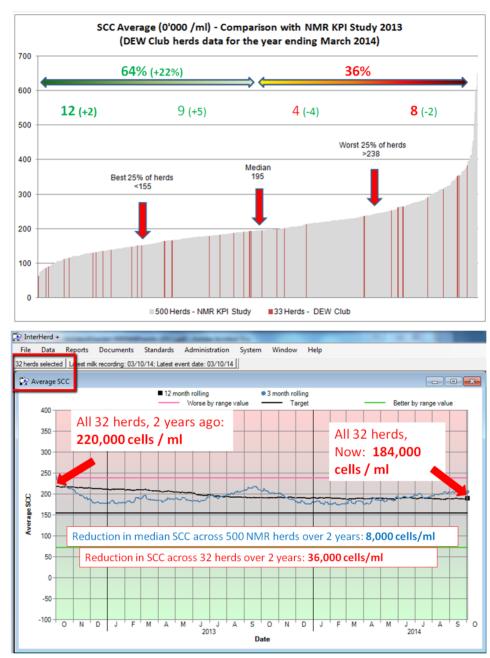
+ve cows





s	s at a glance 💼 💼 📼						
olsteinFriesian-500HerdsAug14.kpi 02/11/14.							
1	Fertility	Production	Mast	itis indicators	Other health indicators	Young stock	
(T)±(R)			Current	t		(T)arget ± (R)ange	
			28%	Cull / death rate	(%)	19% ± 10%	
			4.0	Age at exit (lact)	)	4.3 ± 1.1	
			6.2	Age at exit (y)		7.1 ± 1.4	
-			6%	% cows calving	sold or died within 100 days	3% ± 4%	
			60%	% cows served	80 days after calving	68% ± 24%	
			33%	% cows pregna	nt 100 days after calving	40% ± 18%	
			79	Calving - 1st. se	rvice interval (d)	73 ± 28	
			401	Calving interval	(d)	398 ± 30	
			2.0	Age at first calv	ing (y)	$2.2 \pm 0.4$	
			46%	% cows eligible	for service served	47% ± 22%	
			30%	Conception rate	(%)	39% ± 13%	
			14%	% cows eligible	for service conceived	16% ± 9%	
>			36%	% service interv	/als 18 — 24 d	40% ± 14%	
			12%	% service interv	⁄als ≻ 50 d	17% ± 16%	
			11.6	Lifetime milk / co	w / day (kg)	13.7 ± 3.7	
			9,943	Milk / cow / year	' (kg)	9,324 ± 1,982	
			3.19%	Average protein	(%)	3.34% ± 0.14%	
			3.63%	Average fat (%)	)	4.12% ± 0.29%	
			9,391	305-day yield (k	g)	8,673 ± 1,665	
			190	Average SCC		151 ± 82	
			23%	% SCC >= 200		16% ± 9%	
			9%	% SCC >= 500		6% ± 4%	
			20%	% first recording	g SCC > 200	14% ± 8%	
			11%	% chronic SCC	> 200	8% ± 7%	
			39%	% dried-off with	no SCC > 200	48% ± 17%	
			70%	% dry period cu	re (H-L)	83% ± 16%	
			84%	% dry period pro	otection (L-L)	90% ± 10%	

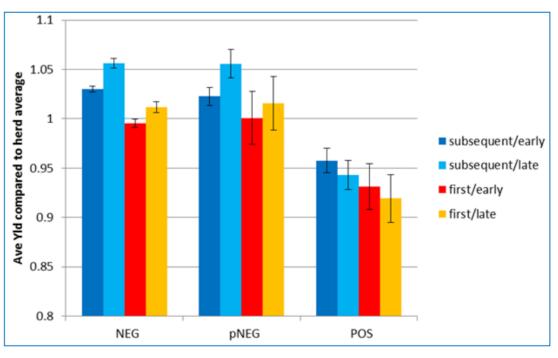
#### **1(b):** Benchmarking performance and progress of herds/groups against the industry



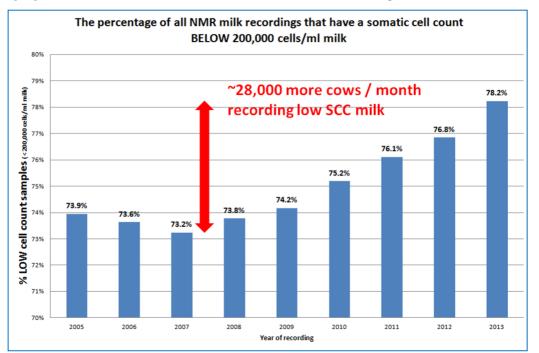
2(a): Efficacy of 30 cow targeted screen for detecting Johne's

2(b): Distribution of yield compared to herd average for all cows in three Johne's Disease status groups

2(c): Milk yields of cows from three Johne's Disease status groups compared to adjusted herd averages

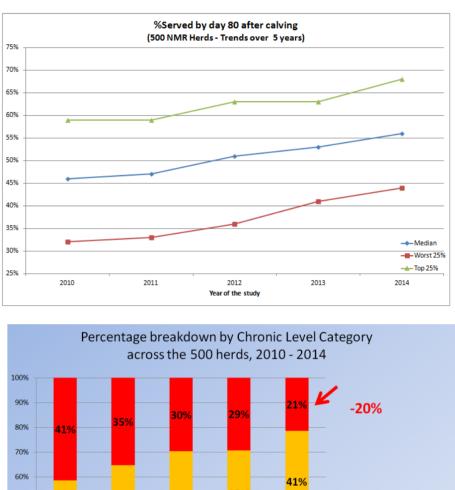


#### 2(d): Annual % of all NMR milk samples that are LOW SCC



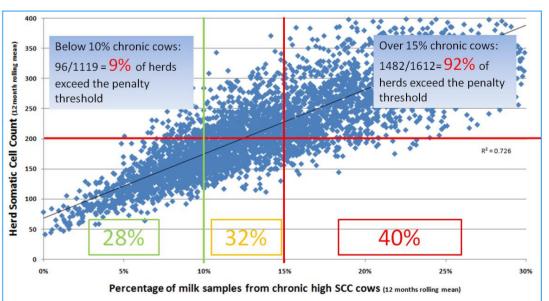


#### 1(c): National trends in herd performance





### 2(e): Correlation between herd SCC and the % milk samples from chronic high SCC cows



### 2(f): Differing survival outcomes of cows with lower than expected yields at first milk recording

