NSW Discussion Group visits
February 2016
David Nation, CEO
Dairy Futures CRC

Will complete Term on 30th June 2016

6 ½ years of large investment ($137 million). Farmer levy has been leveraged ~10:1

Straight forward path to on farm impact (seed, semen)

Education outcomes are a highlight
35 students set to graduate
over 10,000 GiG participants
Cattle innovations
How does the CRC have an impact?

Dairy Futures CRC

Australian Dairy Herd Improvement Scheme

Holstein Australia
Span of traits

- Production
- Conformation
- Management
- Fertility
- Health & Longevity
- New traits

Breeding Indices (BPI, HWI, TWI)
Target 70% reliability for breeding indices of young sires

- Proven sires with international daughters 68%
- Proven sires with Australian daughters 79%
- Now 56%
- Pre-genomics ~20%

DOUBLE RATE OF GENETIC GAIN
Span of traits

- Production
- Conformation
- Management: Feed saved
- Fertility
- Health & Longevity
- New traits:
  - Calving ease
  - Heat tolerance
  - Methane

Breeding Indices (BPI, HWI, TWI)
Feed Saved trait

- New in April 2015
- Breed cattle that require less feed for the same milk production
How have we developed a heat tolerance trait?

Dairy Futures CRC

Australian Government
Bureau of Meteorology

Australian Dairy Herd Improvement Scheme
Forage innovations
Core targets for pasture breeding

Yield

Persistence

Energy
Core targets for pasture breeding

Yield

One-off increase of +20% through hybrids

Persistence

Energy

Ongoing 3X current rate of progress using genomics
Core targets for pasture breeding

Yield

Persistence

Energy

Smart selection of plants: 0.3MJ increase

High Energy

Ryegrass (GM): +1MJ
Core targets for pasture breeding

Yield

Persistence

Energy

+1 year: improved endophytes
Potential Impact

Complexity

1. Improved quality control
2. Better understanding of varietal material
3. Novel endophytes
4. Genomic selection
5. Hybrid breeding
6. Introduce high-value gene technology (GM ryegrass)
Pasture innovations deliver large on farm impacts

Key reference points:

5y Average EBIT: $736/Ha

FVI 1 vs 5 stars ~ $500/Ha

+$400/hectare
YIELD GAIN
THROUGH HYBRIDS

+$170/hectare
1 YEAR
LONGEVITY GAIN

+$180/hectare
TRIPLE RATE OF
GENETIC GAIN

3x

Up to $750/hectare
HIGH ENERGY (GM)
RYEGRASS
More detail available via our website
DairyBio

The continuation of dairy bioscience research from 2016 to 2021
Vision of success for Dairy Bio

Dairy Bio – Better Pastures
$800/Ha p.a.

3X
PROGRESS IN PASTURE BREEDING
(eg 21 years of genetic gain delivered in 7 years)

20%
2
MEGAJOULES
High energy pastures

+3 YEARS
A longer productive life

+80
/COW
DELIVERED INTO EXISTING SEED MARKET
with no new regulation and with improved QA

Dairy Bio – Better Cattle
$350/COW p.a.

+50%
GENETIC GAIN
From 80% reliable genomic breeding values, 3 generations in 6 years c.f. 9 years

+80
/COW
via DNA based targeted cow management tools

10% LOWER HEALTH COST
Selection for health traits

1/2 COST OF GENOMIC TESTING
in addition to cost savings from the CRC

DELIVERED INTO EXISTING H.I. MARKET
with a new focus on cow performance
Modern infrastructure for dairy bioscience

1. Individual feeders 250 cows/year
2. Methane
3. Large glasshouse and field activity
4. 100X Less time and less cost
5. Customised for bioscience 400x storage 280x memory
6. 4000x output 550x cost factor