DOHNE AUSTRALIA

2016

GLOBAL DOHNE CONFERENCE

JULY 21 -22 | AUSTRALIA

Celebrating

50 years

"A must for all sheep producers"

"Dohne Genetic Evaluation on the World Stage"

Hamish Chandler, Manager – Sheep Genetics

SHEEP GENETICS

Who are Sheep Genetics?

Hamish Chandler
Manager

Caris Jones
Development Officer

Nicole Williams
Project Administrator

Clara Collison
Development Officer

David Rubie
Database Manager

Fiona McLoughlin
Project Administrator

Stephen Field
Database Manager

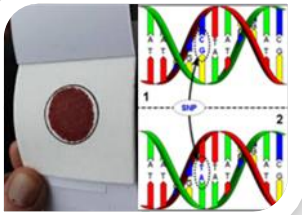
The purpose of Sheep Genetics?

SHEEP GENETICS

- SG is the national genetic evaluation service for the Australian sheep industry.
- Our role is to provide tools for producers to breed the sheep that they want.
- Success measured by rate of genetic improvement by the number of animals.

Analysis Upgrades – Blended

SHEEP GENETICS



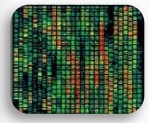
Australian Sheep Breeding Values

MERINOSELECT ASBV

Within flock BV
Genetic Group

LAMBPLAN ASBV

Genomic Breeding Value



Within flock BV
No Genetic group

RBV

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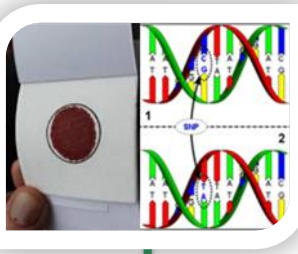
Analysis Upgrades – Single Step



Australian Sheep Breeding Values

MERINOSELECT ASBV

Within flock BV
Genetic Group

LAMBPLAN ASBV

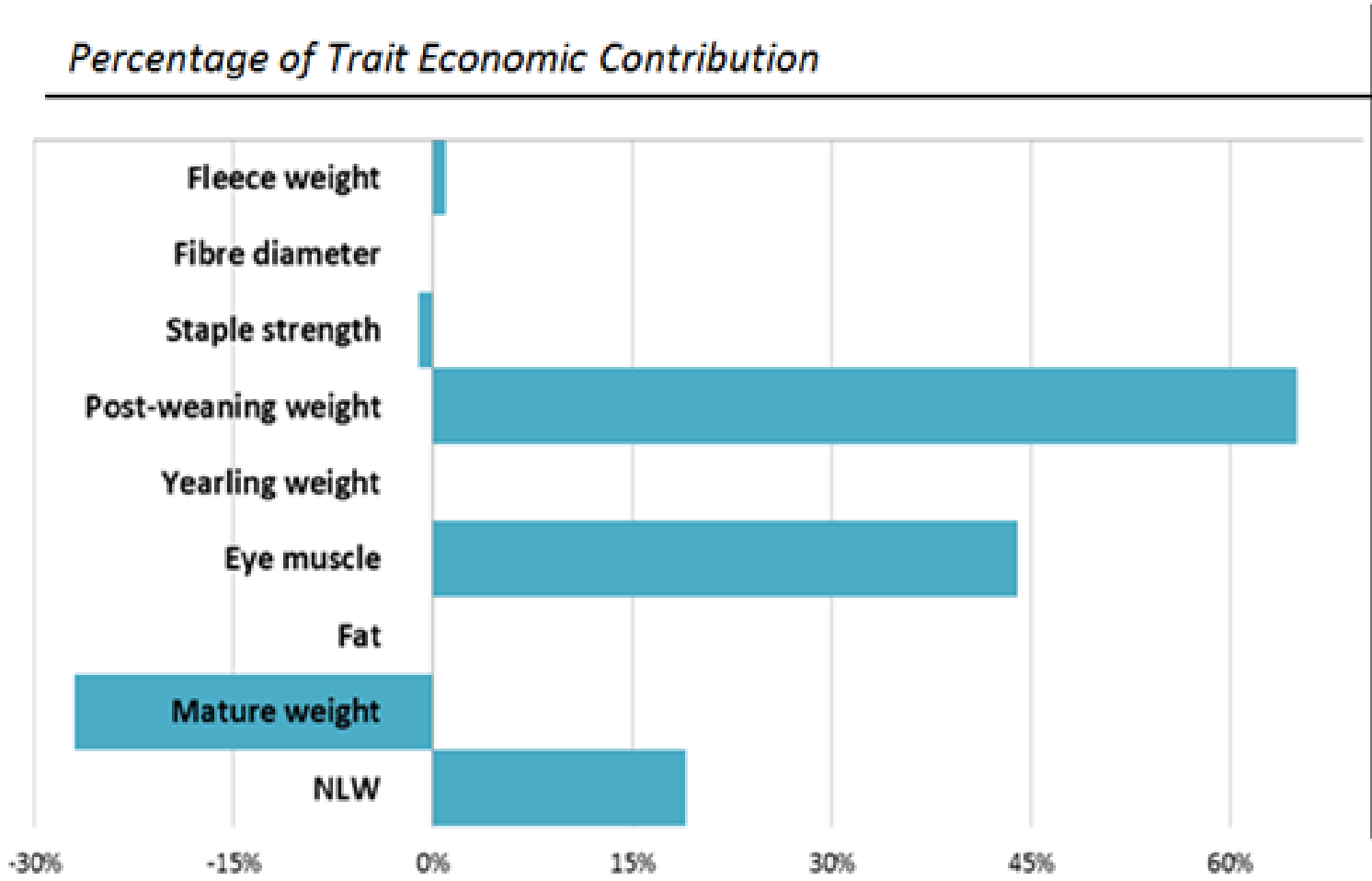
Analysis Upgrades – Single Step

- In 2016 we make the transition from Eating Quality RBVs to ASBVs

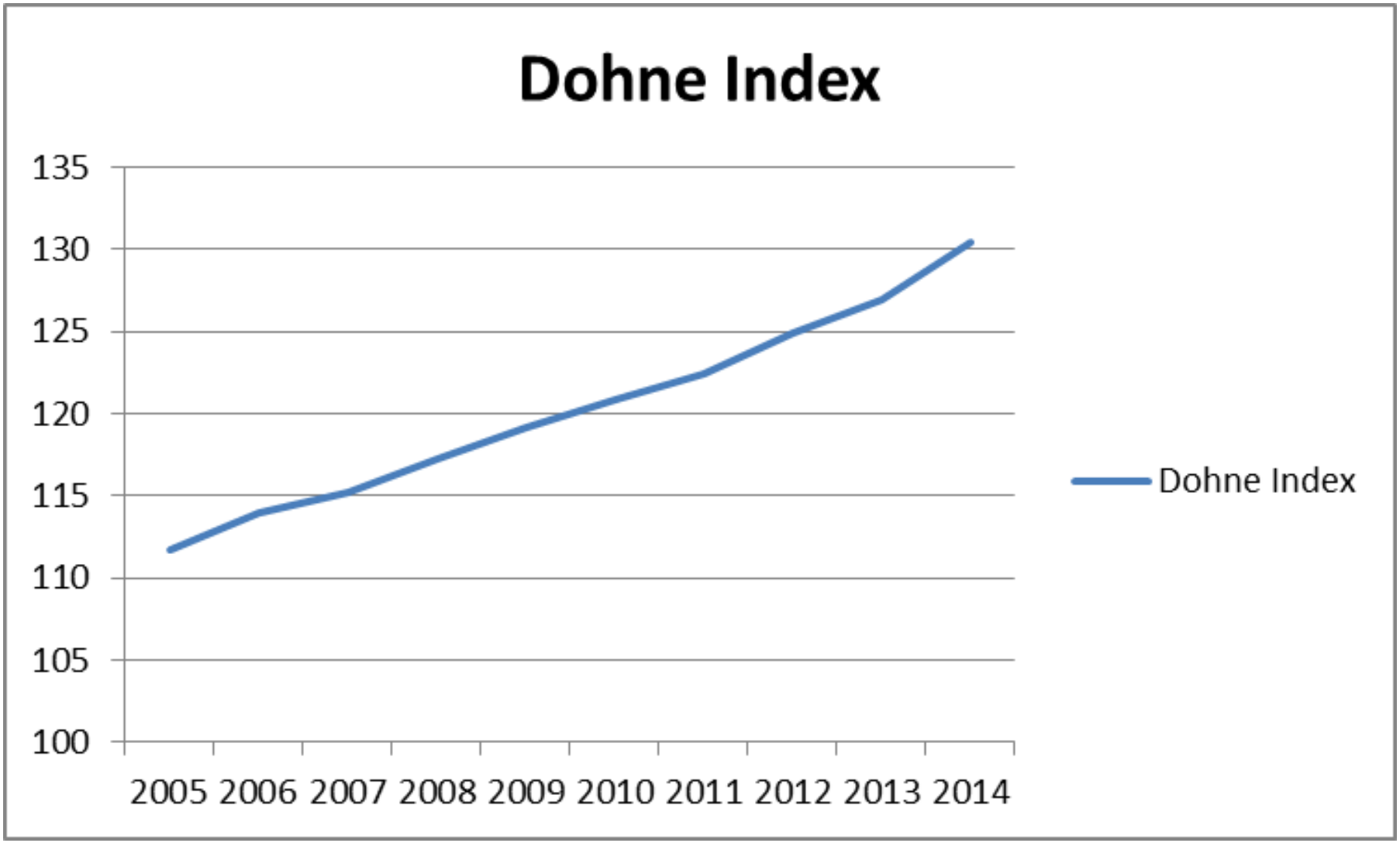
- All animals will have breeding values for all traits → reporting still subject to accuracy thresholds

- ASBVs for EQ traits now available for on more animals

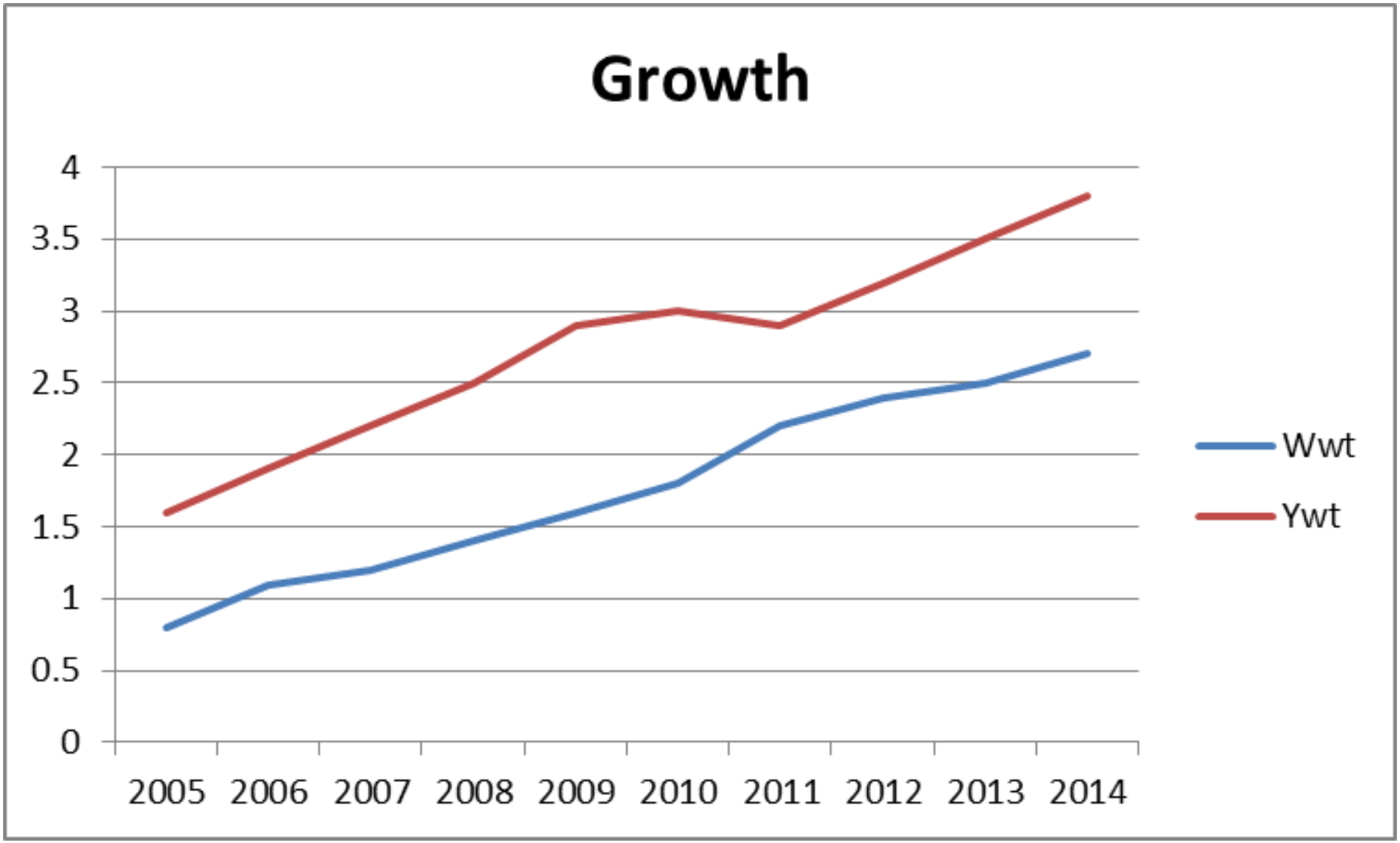
Dohne Index


Percentage of Trait Economic Contribution
10 Year Genetic Gain
Fleece weight
Fibre diameter
Staple strength
Post-weaning weight
Yearling weight
Eye muscle
Fat
Mature weight
NLW
1.22 %
0.05 Micron
-0.08 nkt
2.90 kg
3.13 kg
0.91 mm
0.14 mm
2.78 kg
1.54 %
-30%
-15%
0%
15%
30%
45%
60%

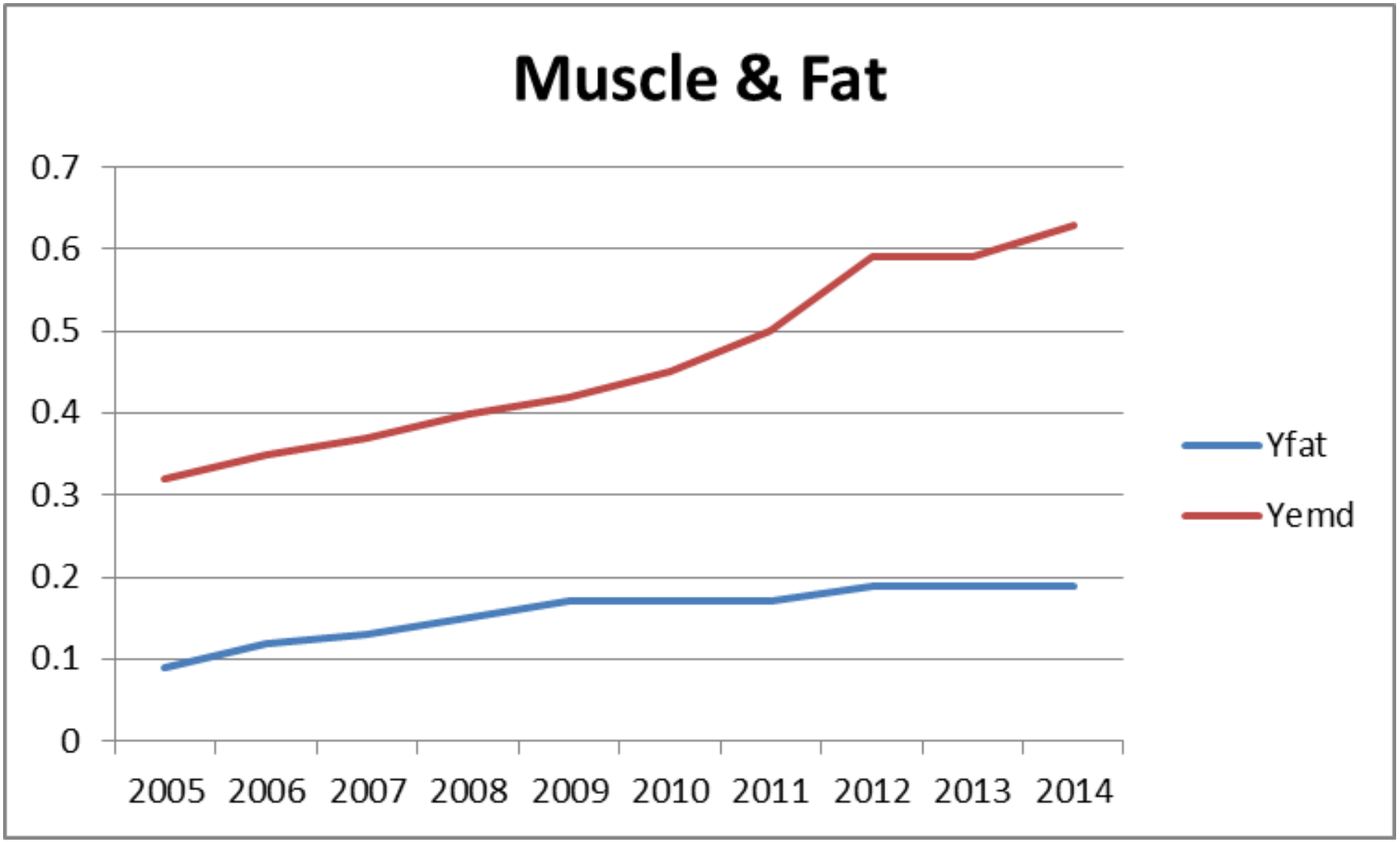
Dohne Genetic Trends



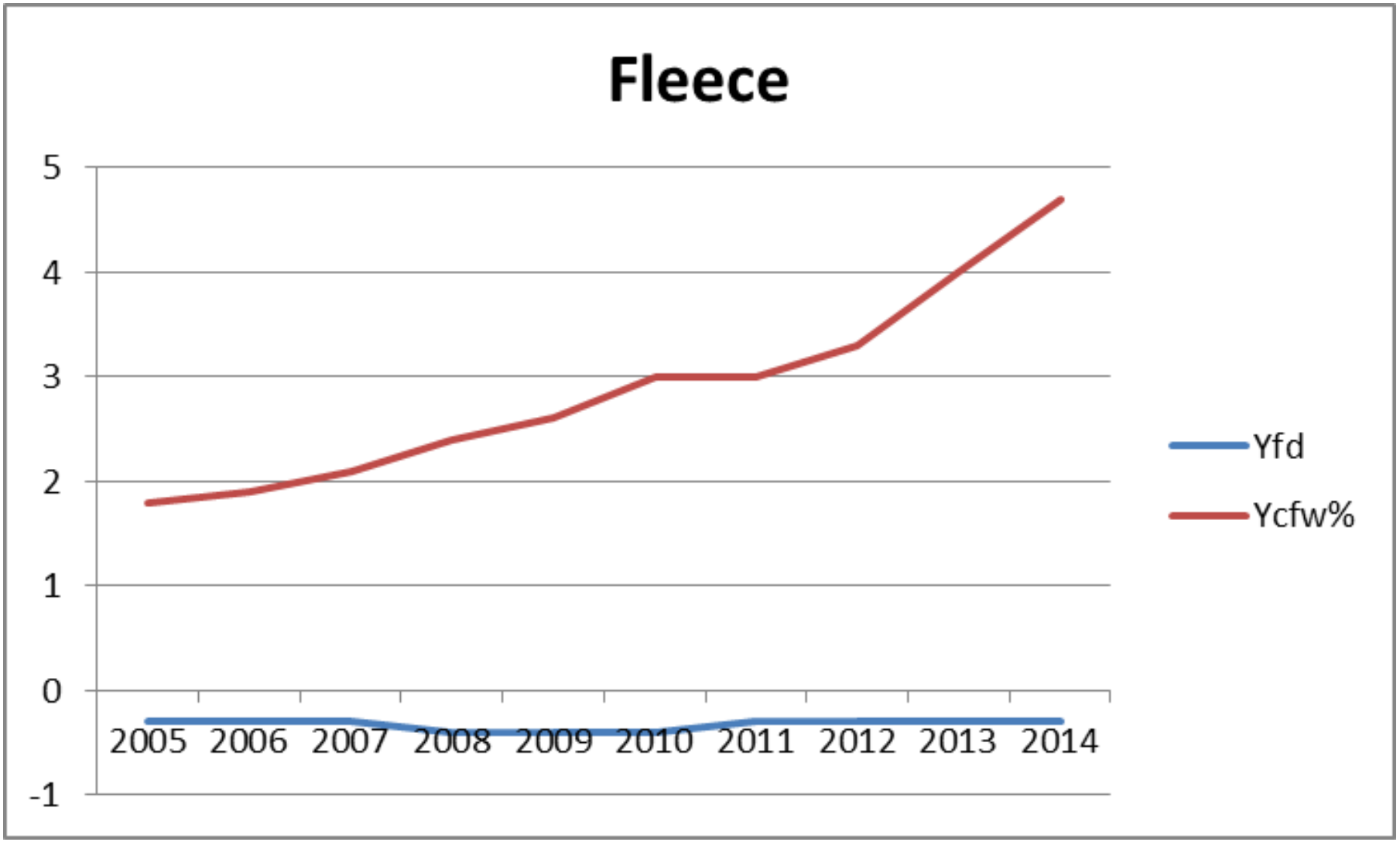
Dohne Genetic Trends



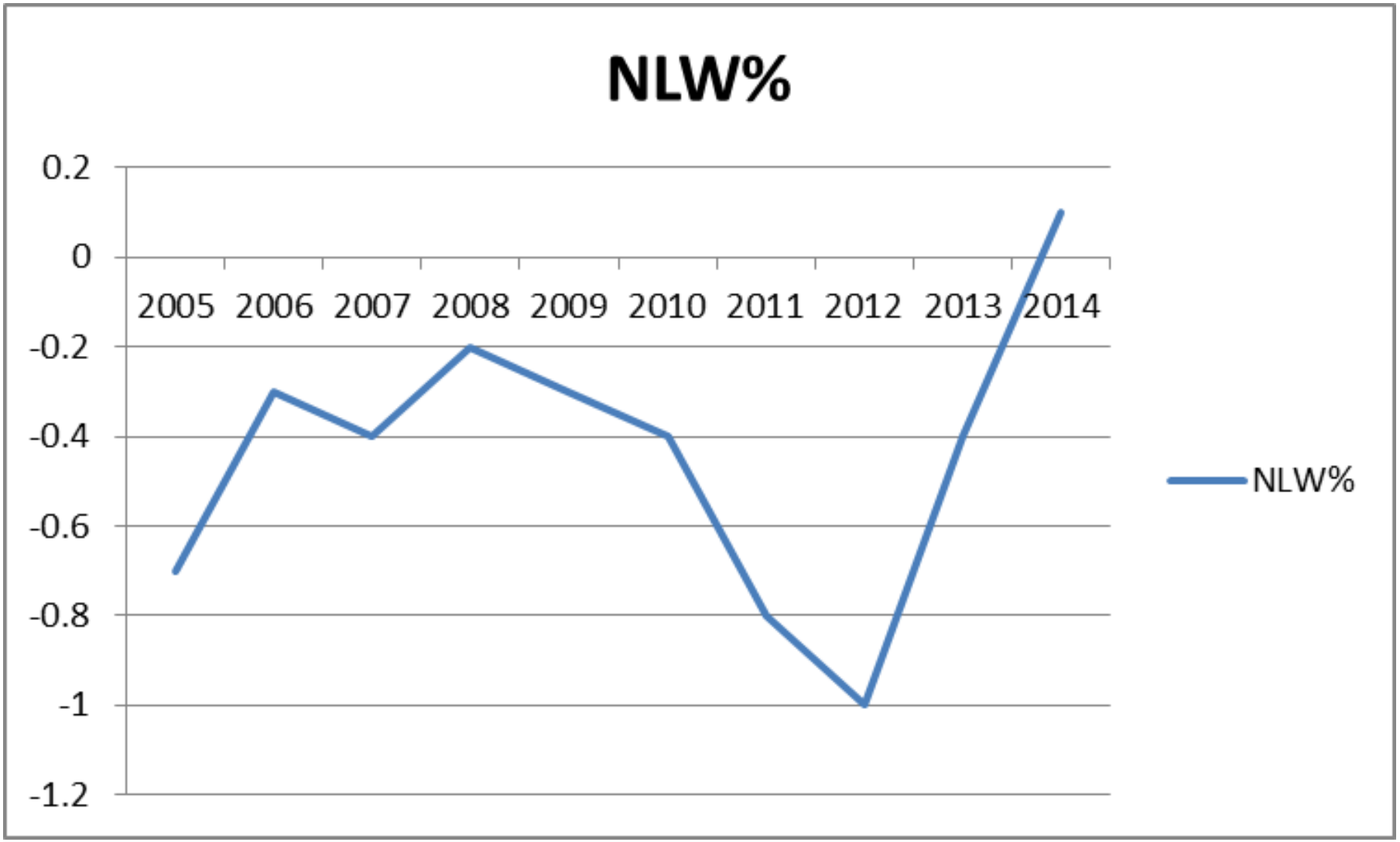
Dohne Genetic Trends

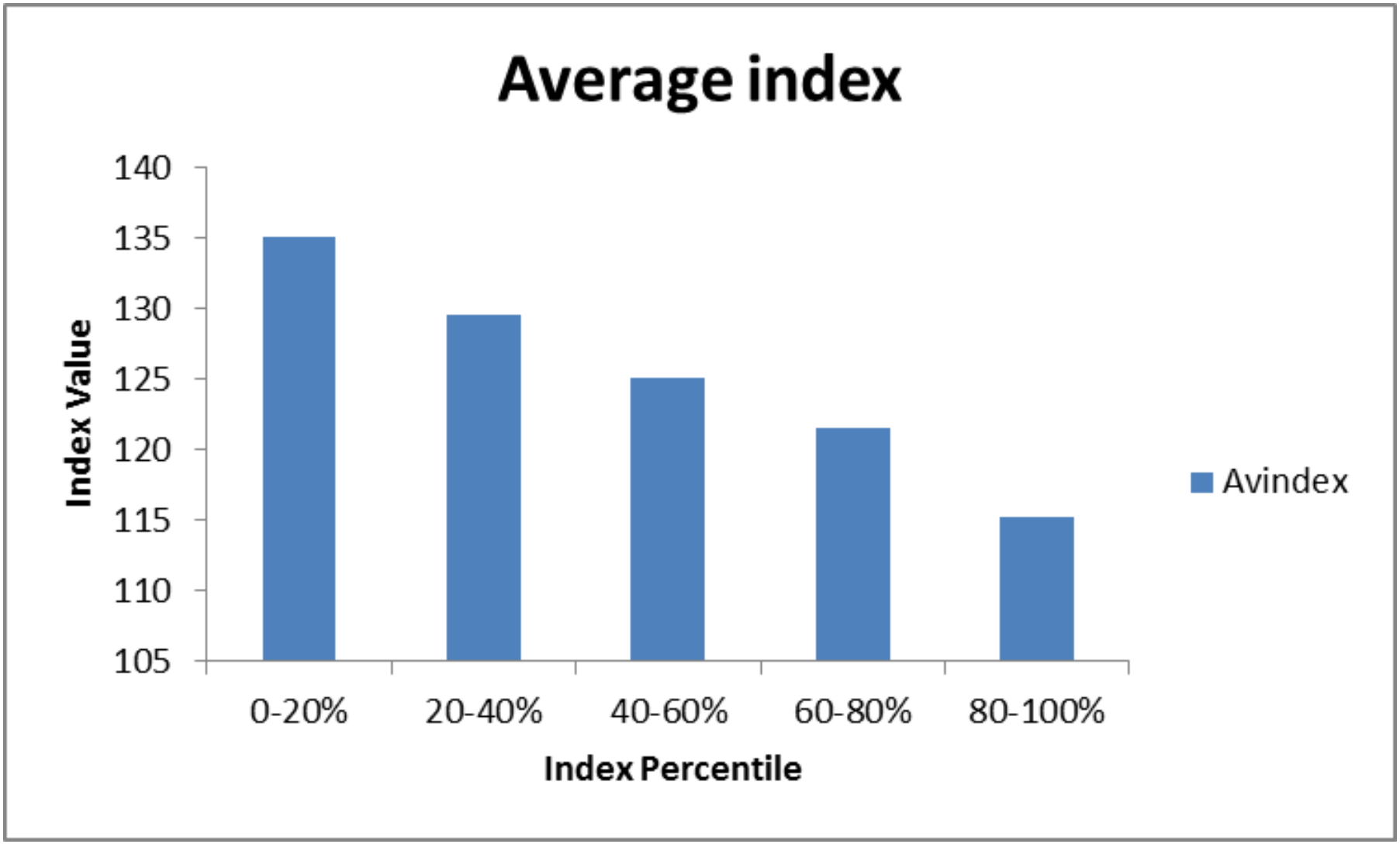


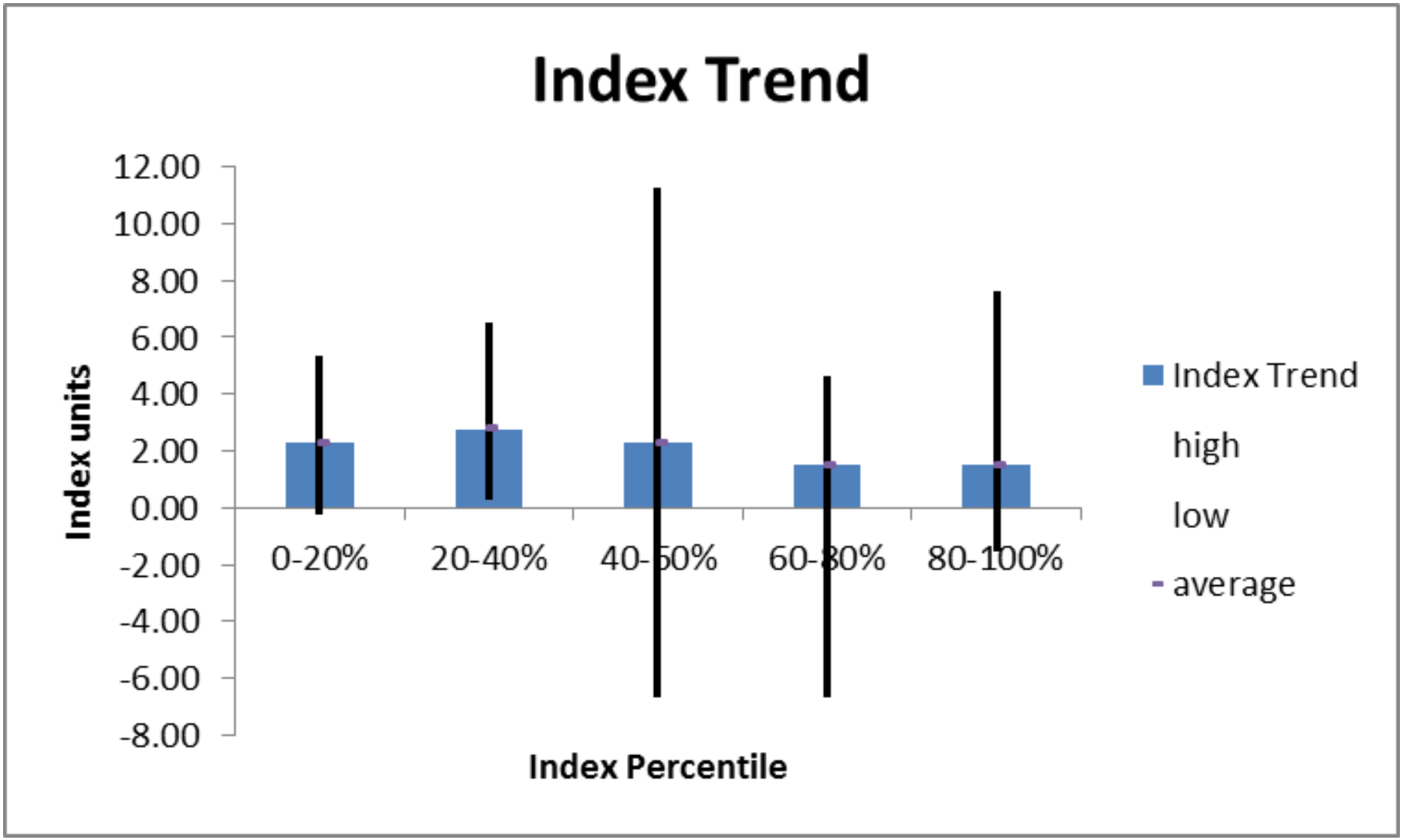
Dohne Genetic Trends



Dohne Genetic Trends




Average index
Index Value
140
135
130
125
120
115
110
105
0-20%
20-40%
40-60%
60-80%
80-100%
Index Percentile
Avindex


Index Trend
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
Index units
0-20%
20-40%
40-60%
60-80%
80-100%
Index Percentile
Index Trend
high
low
average

RAMping up genetic gain

SHEEP GENETICS

Project Aims

- Improve Breeding Program Effectiveness and Genetic gain:
  - Develop series of on farm reports
  - Identify potential barriers to genetic gain through benchmarks
  - Develop clear recommendations
- Develop training package that accredited Service Providers can use
- Reports available via Dashboard for SP and Breeder access
- Allow a more proactive approach

Breeders Equation

SHEEP GENETICS

mla MEAT & LIVESTOCK AUSTRALIA · awi Australian Wool Innovation Limited

Selection intensity: Select only the very best animals

Selection accuracy: Pick the best ones more often

Generation Interval: Breed from them as soon as possible

Variation: Different enough to pick from

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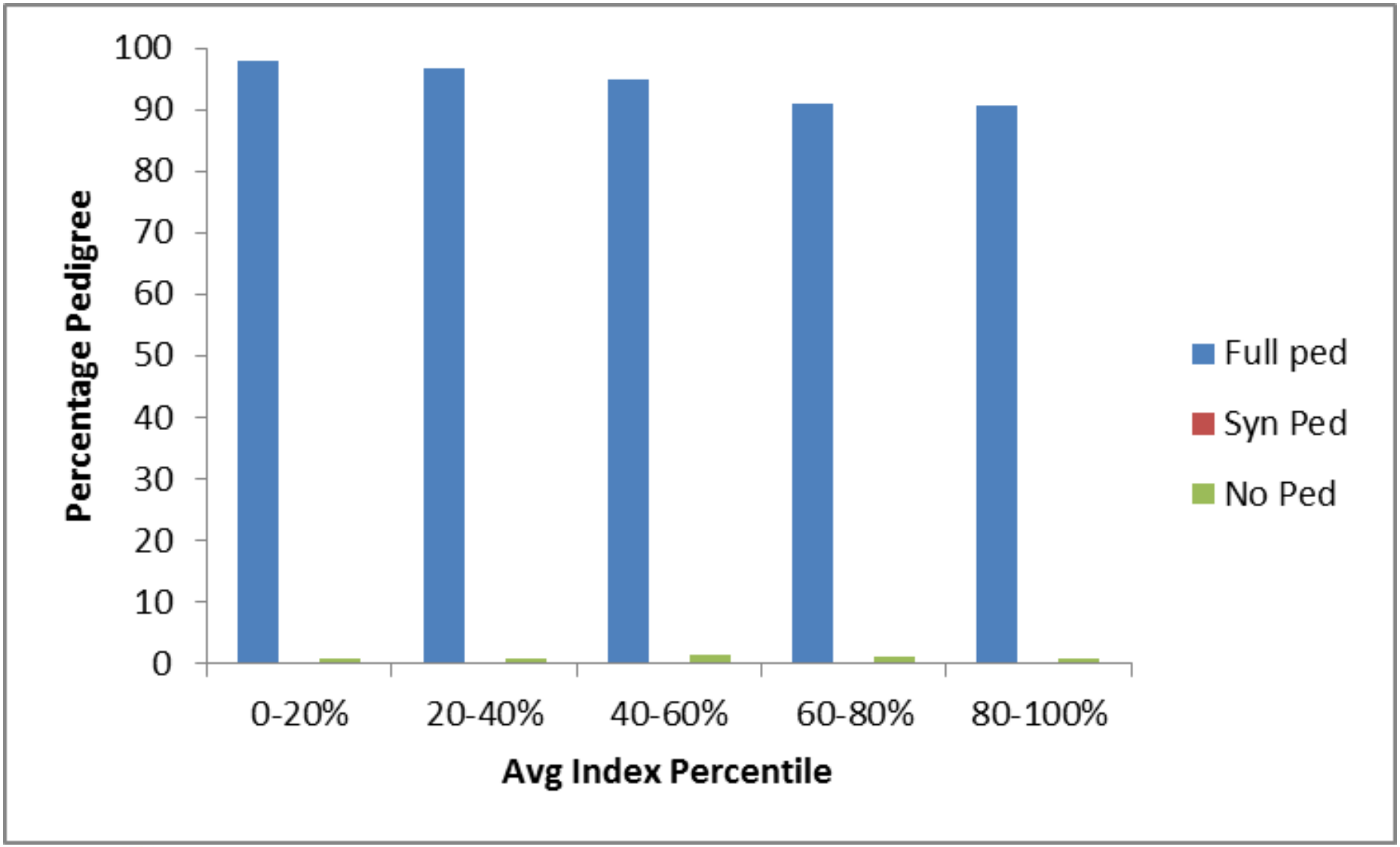
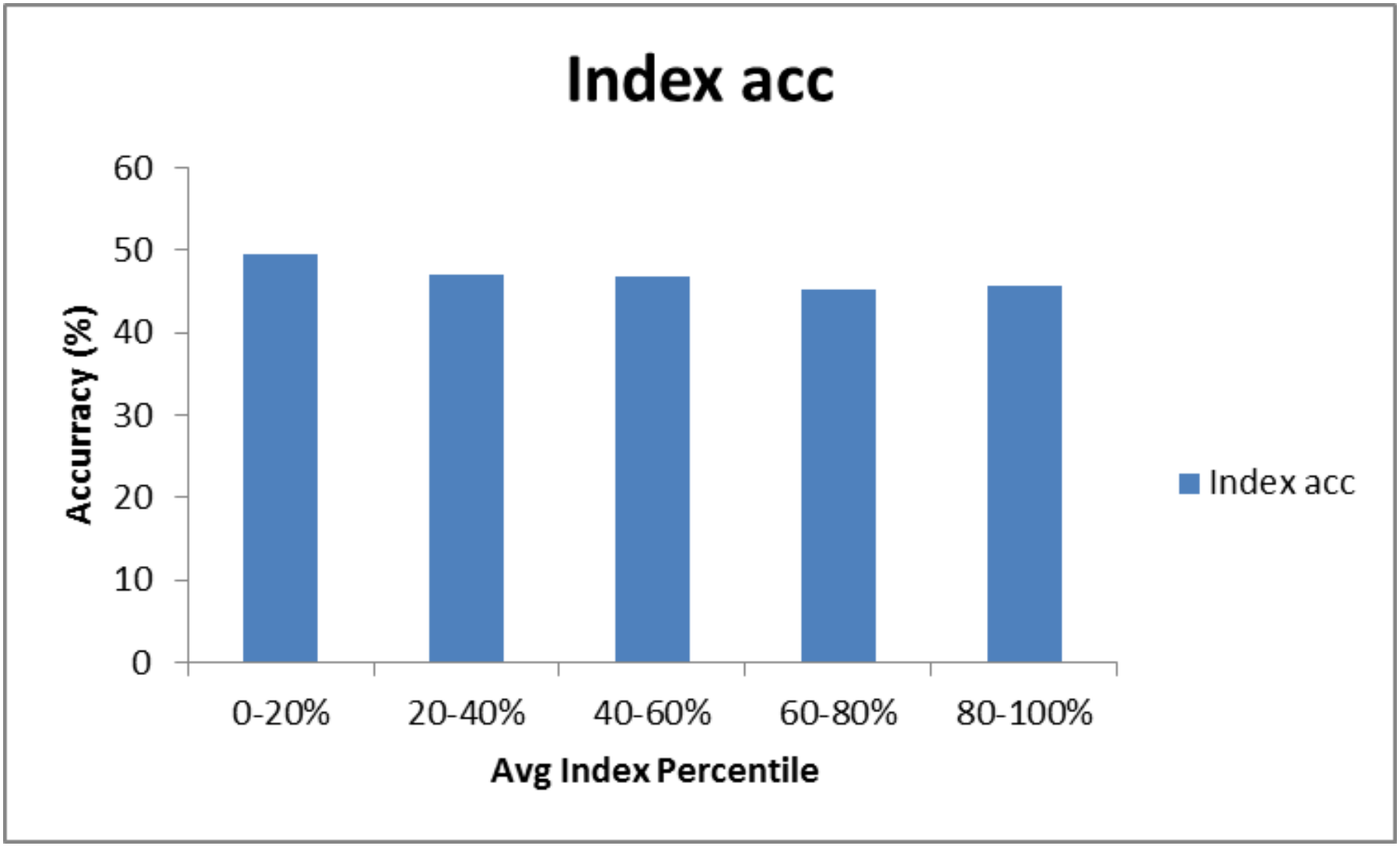
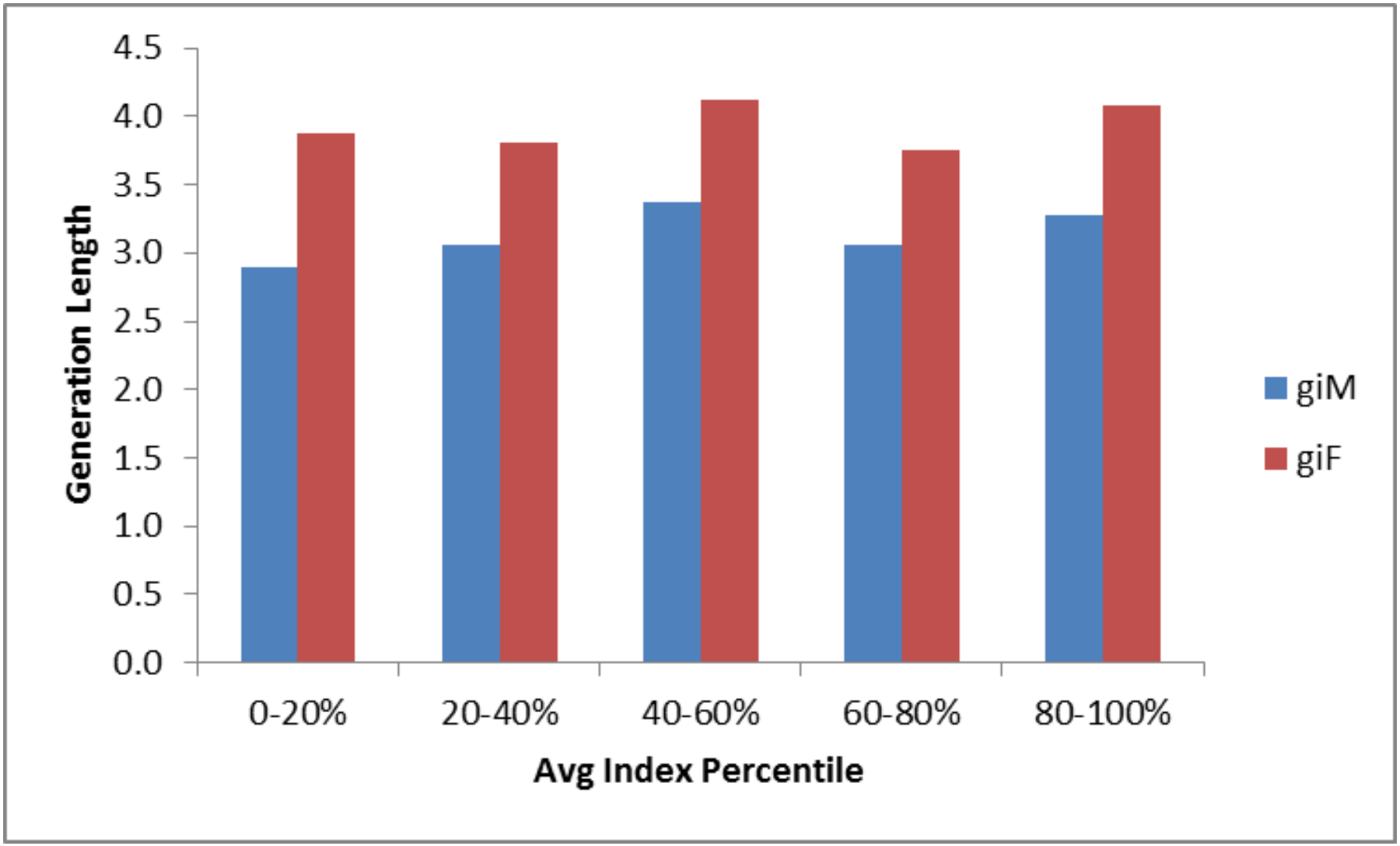
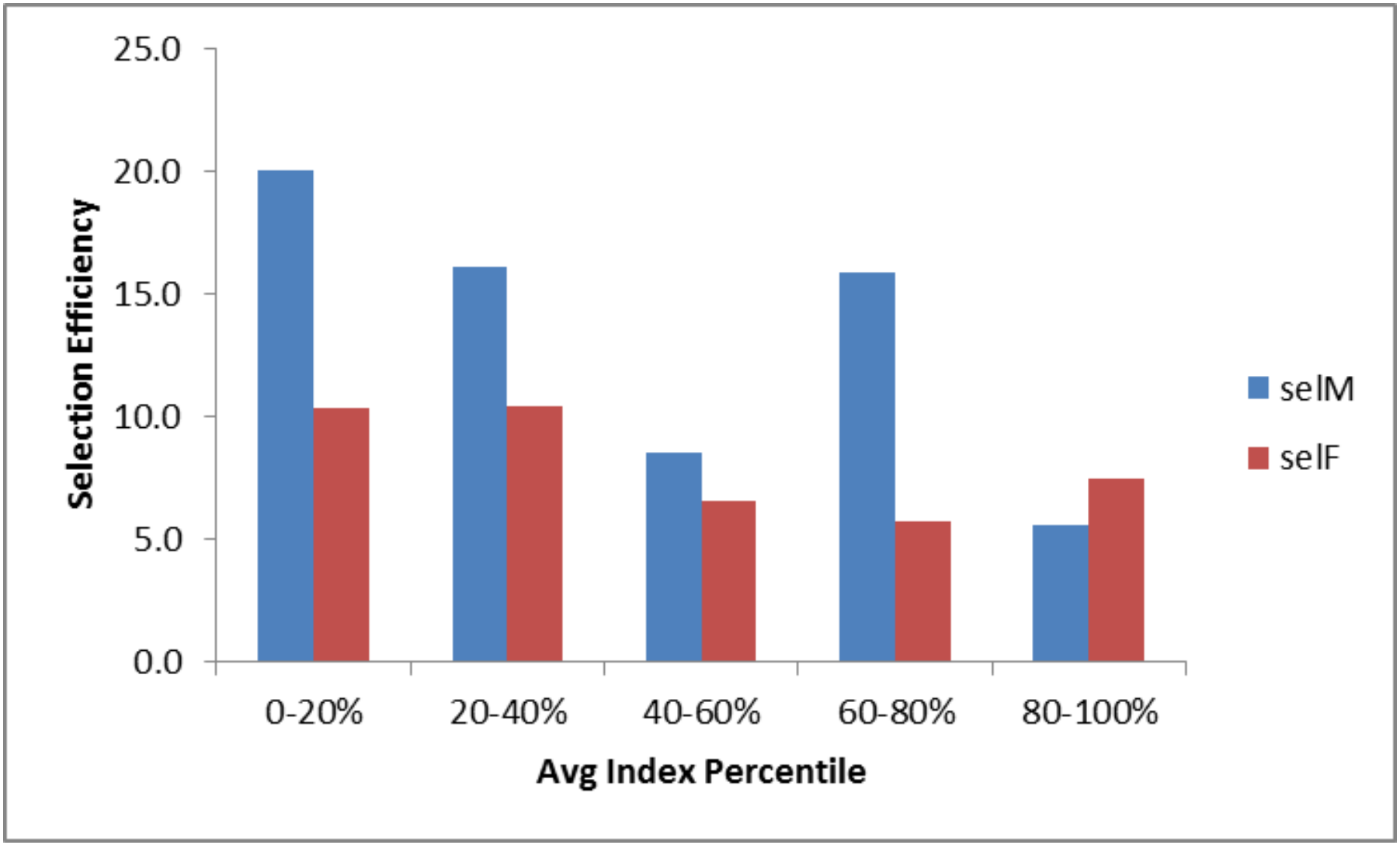

Percentage Pedigree
100
90
80
70
60
50
40
30
20
10
0
0-20%
20-40%
40-60%
60-80%
80-100%
Avg Index Percentile
Full ped
Syn Ped
No Ped


Index acc
Accurracy (%)
60
50
40
30
20
10
0
0-20%
20-40%
40-60%
60-80%
80-100%
Avg Index Percentile
Index acc


Generation Length
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0-20%
20-40%
40-60%
60-80%
80-100%
Avg Index Percentile
giM
giF


25.0
20.0
15.0
10.0
5.0
0.0
Selection Efficiency
0-20%
20-40%
40-60%
60-80%
80-100%
Avg Index Percentile
selM
selF

Commercial Breeders

- Rams;
  - Which ASBVs & index match your breeding objective
  - Select rams with the best available ASBVs in your price range that are functional
  - Ram audit, annually review all rams in the sire team, are they good enough to still be there?
    - How long have you been keeping them?

Commercial Breeders

- Ewes;
  - How have you been selecting your replacement ewes?
    - Visual only/Visual and measurement
  - How could this be done with higher accuracy?
    - Records for weight and preg scan?
    - RAMPOWER?
    - Singles vs twins
  - Culled on age or performance?

Global Dohne Evaluation

- Useful if genetics are being, or can be, exchanged between countries
  - Can we identify genetic linkage?
- A global evaluation has the potential to identify more variation with higher accuracy
  - Potential for higher rates of gain
- Already several international flocks in the Sheep Genetics Dohne evaluation

Global Dohne Evaluation

- Direct international subscription through ABDA
- Submission through association/society
  - If alignment with ADBA
- Data exchange between Sheep Genetics and other service providers
  - E.g. Trans-Tasman data exchange with SIL for Maternal breeds
- Needs to be tested on a case-by-case basis

Key points

- Dohne rate of genetic progress is good
  - Driven by accuracy of selection
- Rate of gain could be improved by;
  - Higher selection efficiency, better use of BVs
  - Shorter generation interval
- Scope for more global collaboration