Selecting the resilient H&N bird

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Has genetic to solve all these problems?

Selection in Layers

Data Recording – Commercial Farms

Group Cages	Free Range

- ✓ Rate of Lay
- ✓ Feather Cover
- ✓ Mortality
- ✓ Adaptability

- ✓ Use of Nests
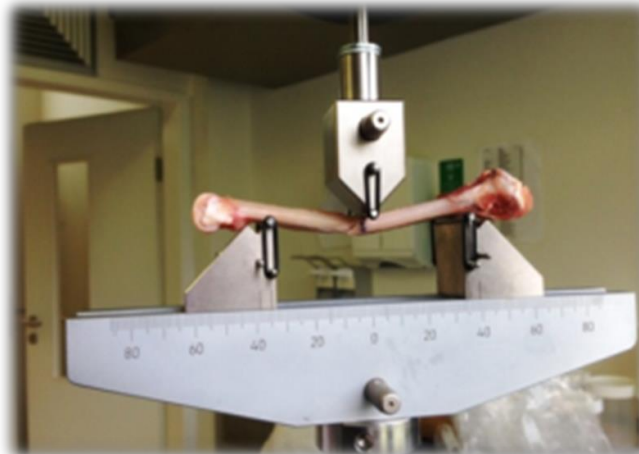- ✓ Feather Cover
- ✓ Mortality

H&N INTERNATIONAL

New Phenotypes – Bone Strength

- 30-53% layers had at least one fracture *(Gregory y Wilkings, 1989; Sandilands, 2011)*

- More fractures in aviaries than in cages

- Weaker bones in cages *(Fleming y col., 1994; Newman y Leeson, 1998: Scholz y col., 2008)*

- Heritability: 0.15 – 0.45 *(Bishop et al. 2000 ; Fleming y col. 2004; Andersson y col. 2018)*

Source: clker.com

Improve Bone Stability

Source: clker.com

H&N
INTERNATIONAL

Selection for better plumage condition

- Test relatives in breeding farms & field conditions

- **Selection for low mortality and good feather cover**

- Family cages (full-sibs or half-sibs)

- No beak treatment

Heritability ~ 0.20 – 0.30

H&N INTERNATIONAL

Better feather cover

Selection for low mortality and good feather cover

Impact of plumage on daily energy requirement

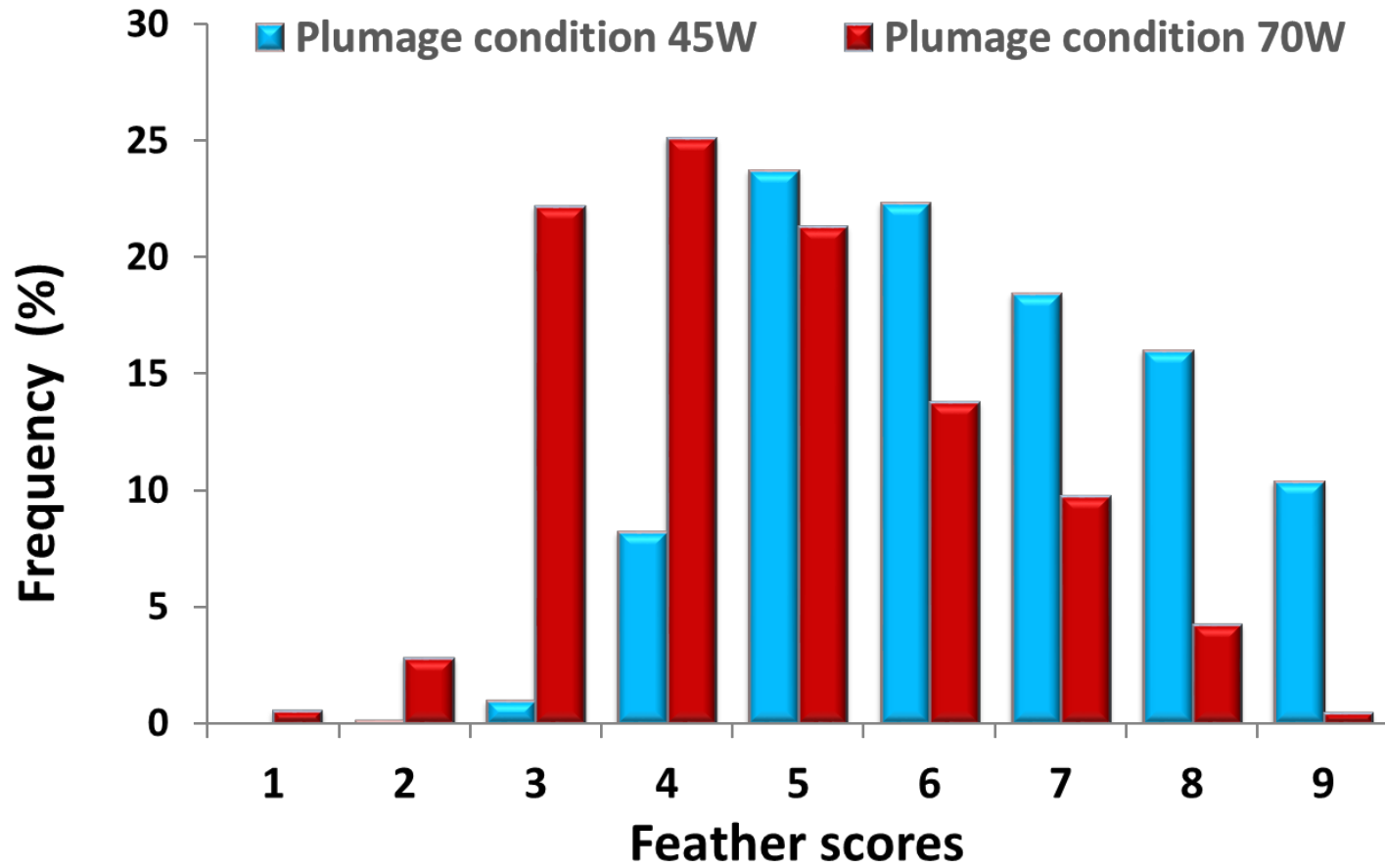| Plumage	100%	90%	80%	70%	60%	50%
Additional kcal	0	7.5	14.4	21.6	28.8	36
Additional g/d *	0	2.6	5.2	7.8	10.4	13

* Feed 2,770 Kcal

Source: Peguri et al., 1993

Selecting for good feather cover until the end

- Groups of 72 hens per department
- Higher light intensity
- No-Soja feed

Pure-lines in Feather Cover Test

Different environments

Field Test - Performance recording

✓ Egg Production

✓ Egg Quality

✓ Livability

✓ Plumage Condition

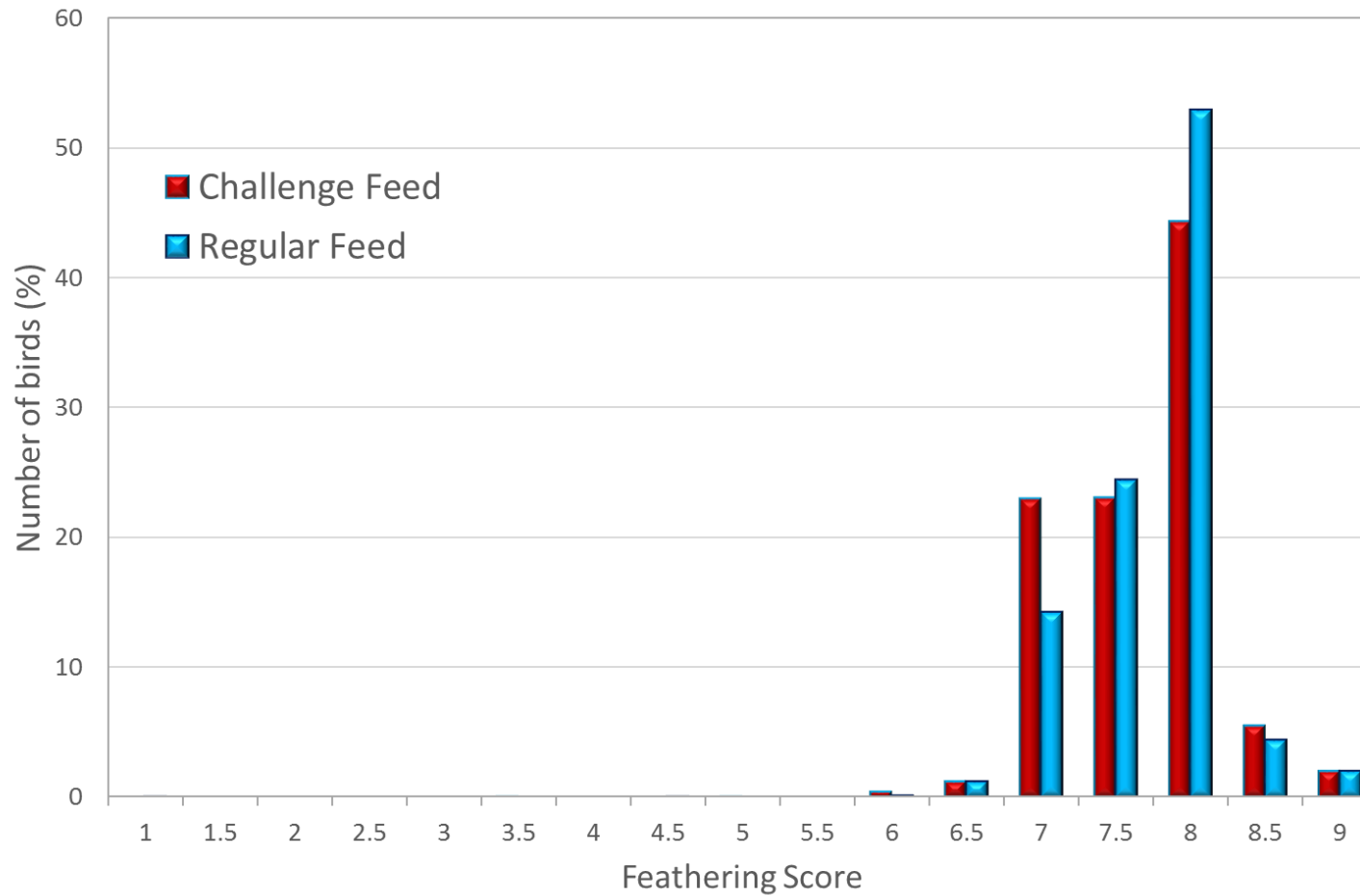✓ Pecking / Cannibalisms

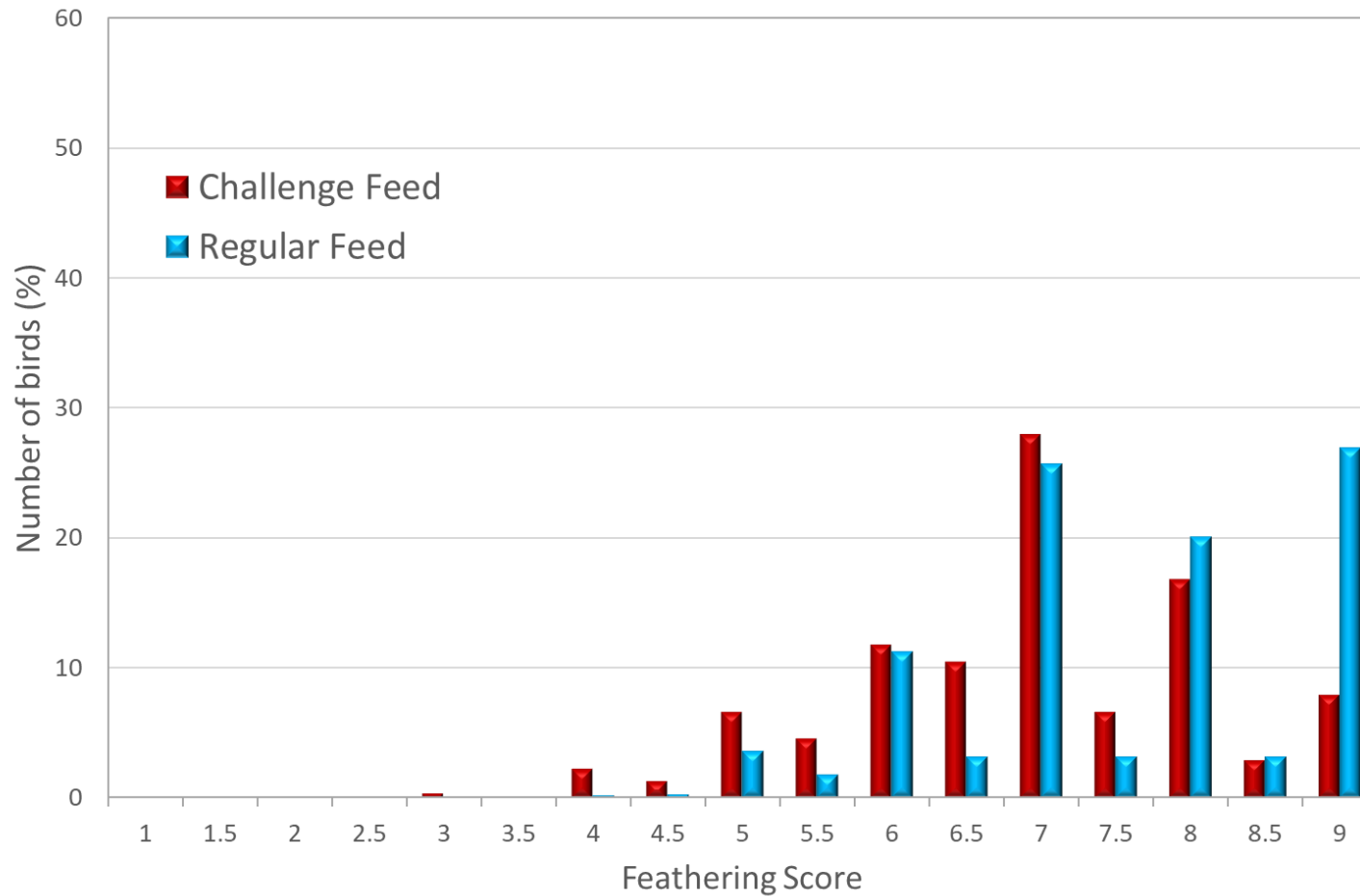# New Field test – Free Range
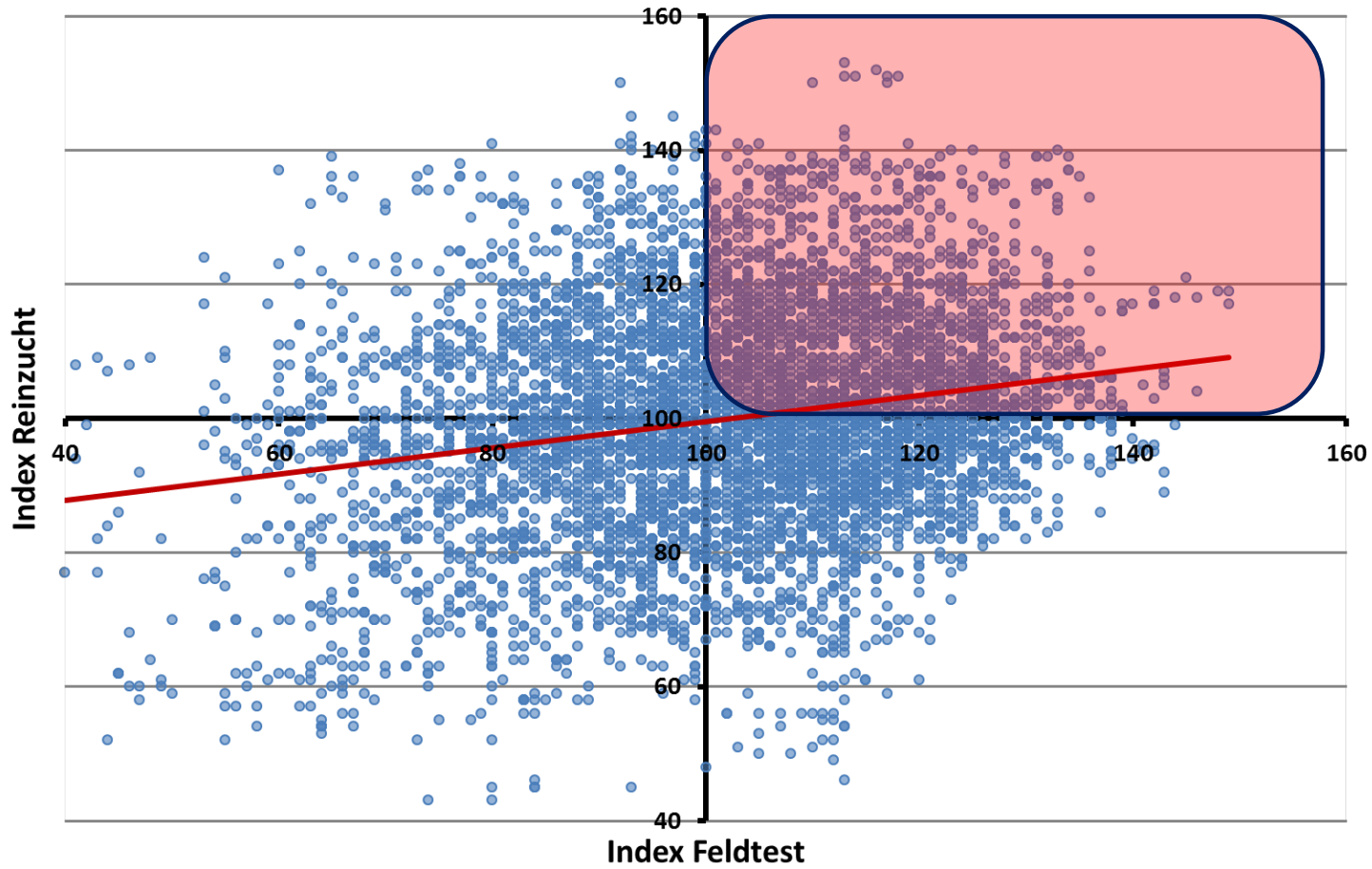
Feathering Score – 43 weeks of age

First Evaluation – Challenge Feed – (43 w of age)

First Evaluation – Challenge Feed – (67 w of age)

Correlation Field test & Pure-Line test

Test in Floor System

Floor house testing

➜ Increase of Saleable <u>Nest</u> Eggs

Trap device

Ejection Rake

Reader

Detail

ca.25°

Antenna

Funnel nest floor (tilted)

Egg collecting tube

Detail
top view

Seesaw
egg sensor

Funnel nest floor
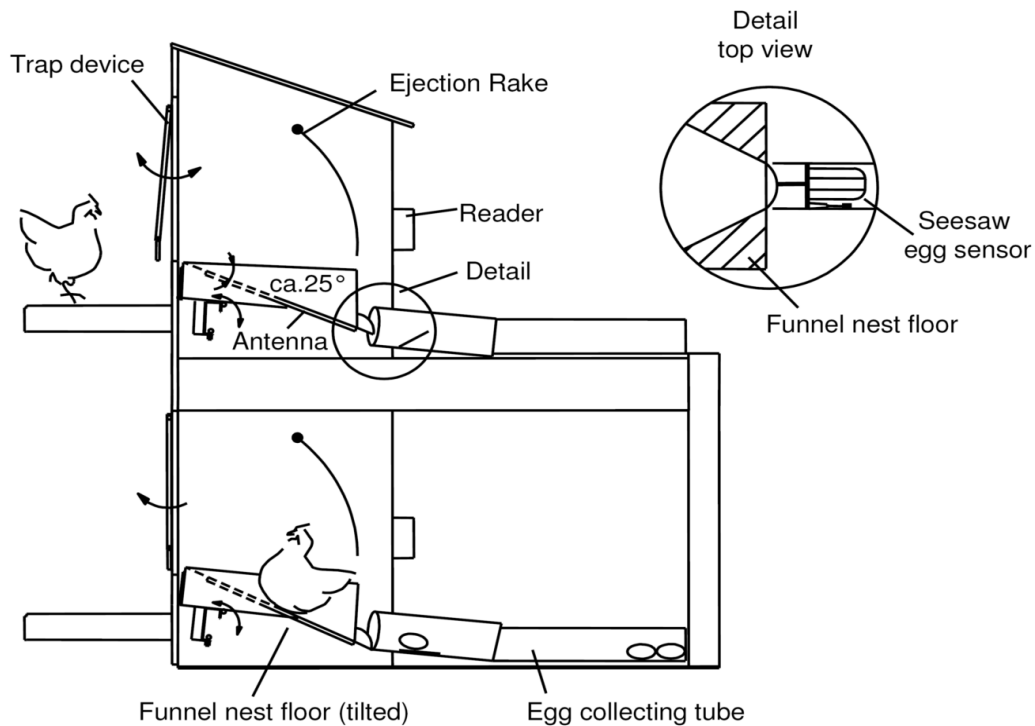
Transponder

Challenge Test in Russia

New Phenotypes – Behaviour

Artificial Intelligence

- Automatic data collection (sensors, cameras,..)
- Transform data to information:
  - ✓ Tracking the animal
  - ✓ Activity
  - ✓ Behaviour
  - ✓ Fitness

Our bird is not alone

Have everything covered

- Nutrition Consultancy
- Management Support and Trainings
- Project Development
- Veterinary Services
- Hatchery Support

■ Nutrition ■ Management ■ Hatchery ■ Veterinary ■ Project development