
SAMEN
TO INFINITY
AND BEYOND...
KLAAR OM HET
VERSCHIL TE MAKEN?

Agenda middagprogramma Swine

1	Wat als... je de voetafdruk op het boerenerf kon voorspellen? | Neil Ferguson
2	Precisievoeren: starten met meten! Wat voegt deeltjesgrootte toe? | Johan Kroon & Wim Lannoy
3	Pauze
4	Future proof grondstoffen: waar moeten we mee rekenen in 2030?
5	Samenvatting

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What if ……

Predicting environmental footprint on farm

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Neil S Ferguson, PhD
Trouw Nutrition Innovation Modeling Team Manager

Agenda

1. Basic concepts
2. LCA Basics
3. Environmental Footprint Insights
4. Our Experiences
5. Conclusions

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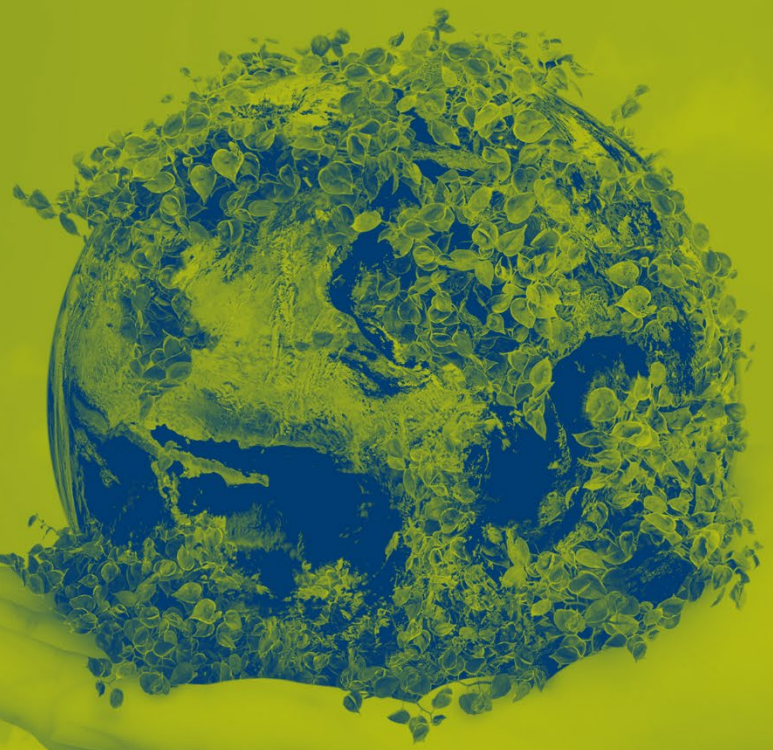

Watson
Basic Concepts

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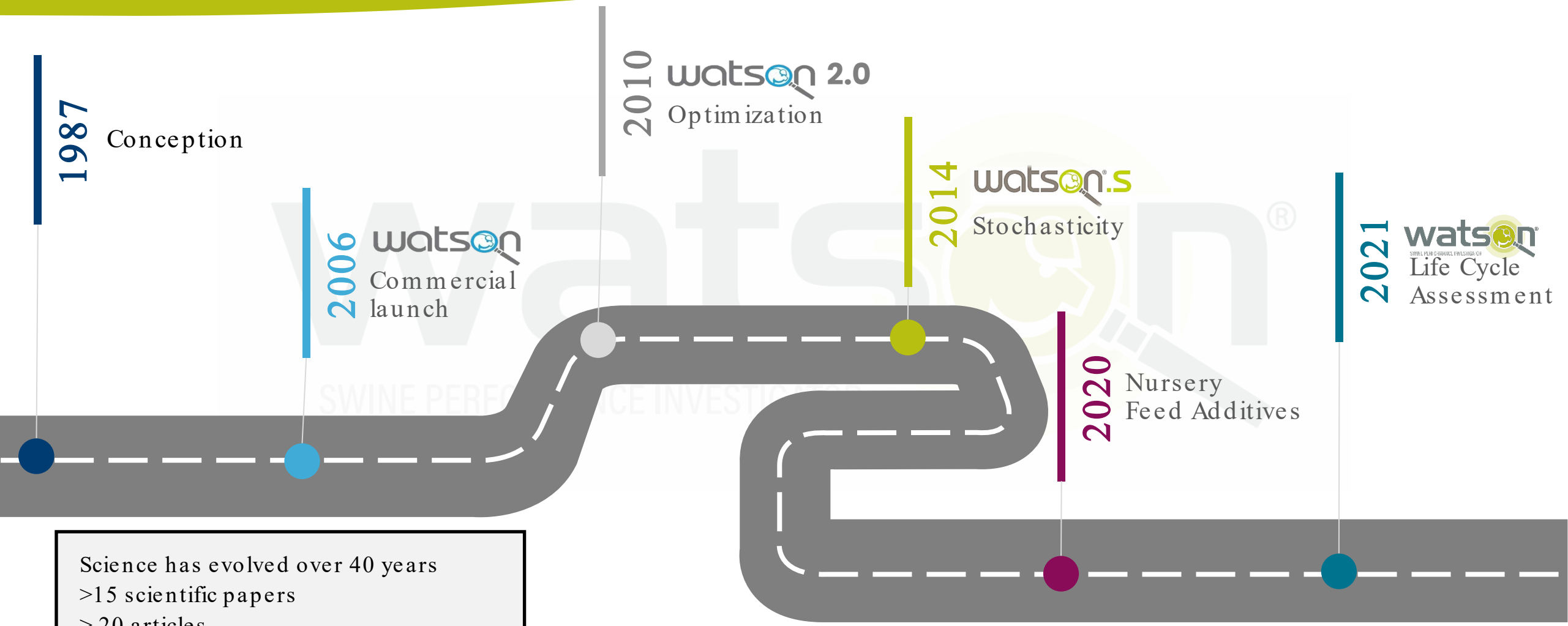
History



Science has evolved over 40 years
>15 scientific papers
> 20 articles
3 book chapters
Value for customers for last 14 years

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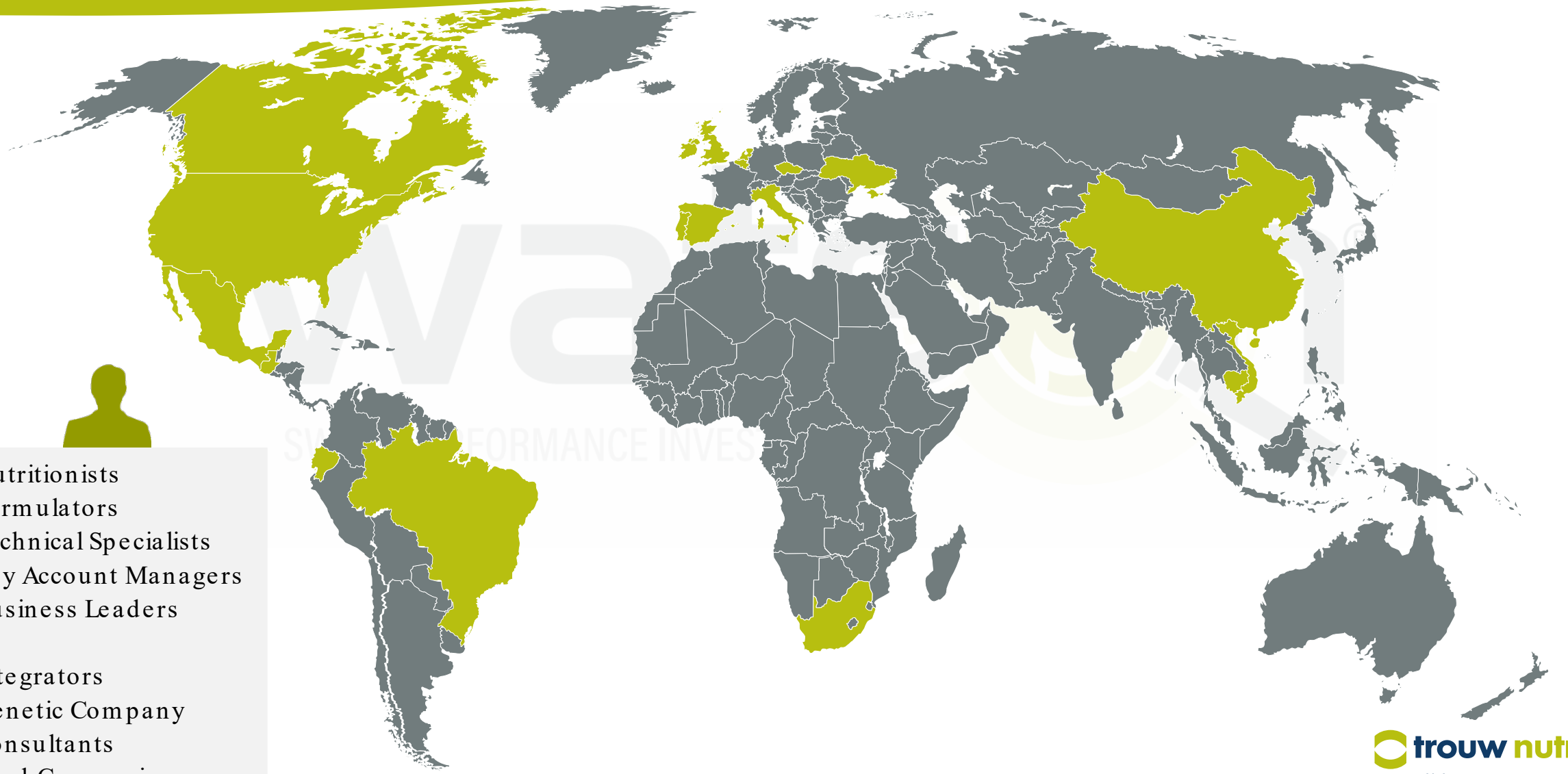
Usage



Nutritionists
Formulators
Technical Specialists
Key Account Managers
Business Leaders

Integrators
Genetic Company
Consultants
Feed Companies

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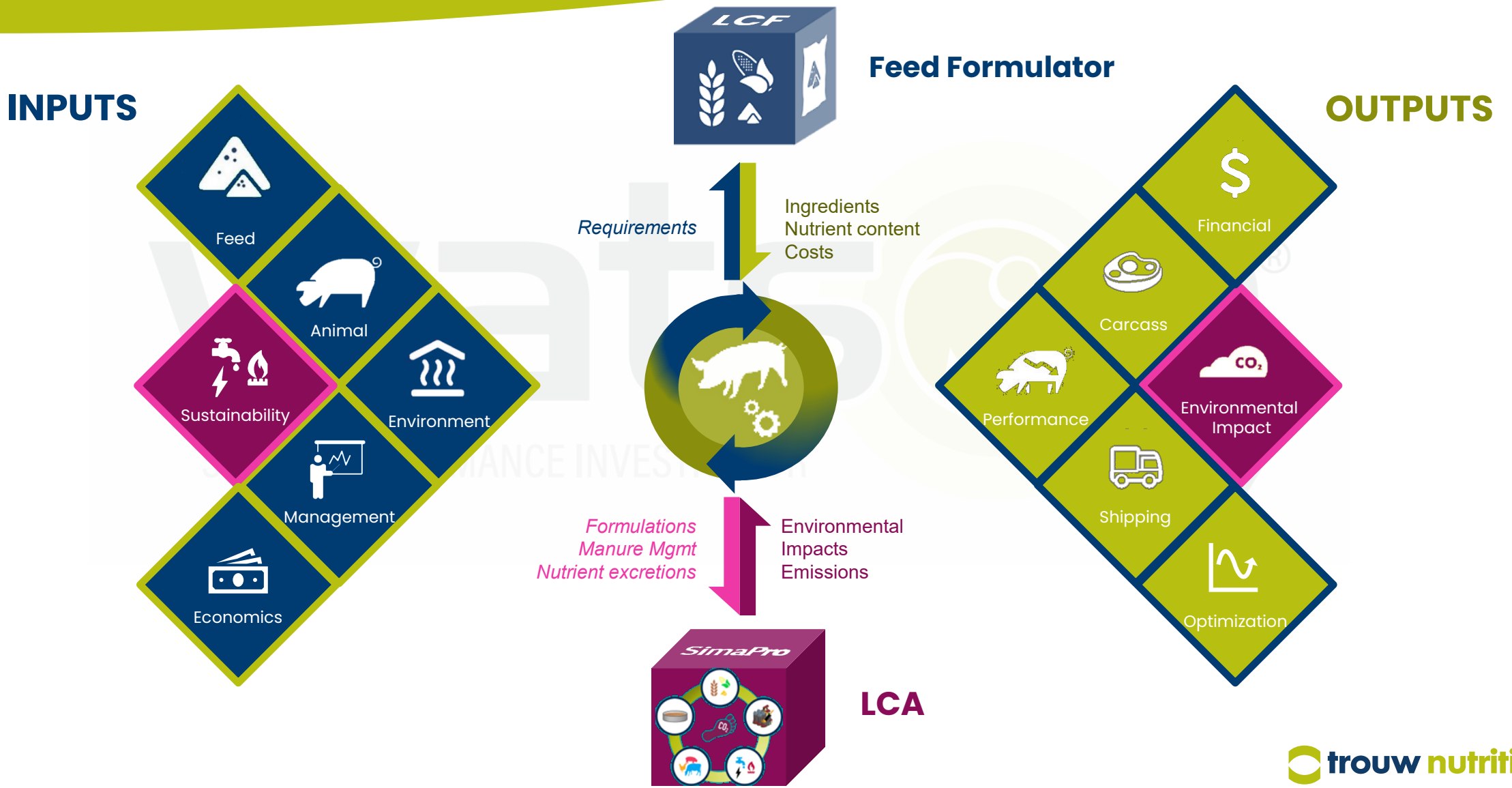
Digital Twin … a virtual replica



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Predicted Outcomes

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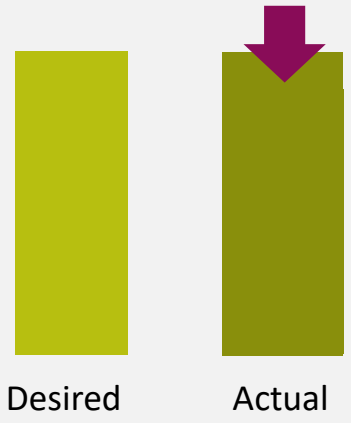
Theory

PREDICTING
Feed Intake
is essential



Environmental heat demand

Heat Loss

Health

Social Interactions

DIET

Requirements ANIMAL

Feed Intake

Gut Capacity

Heat transfer **BETWEEN** pigs

Feed Competition

CONSTRAINTS

ENVIRONMENT

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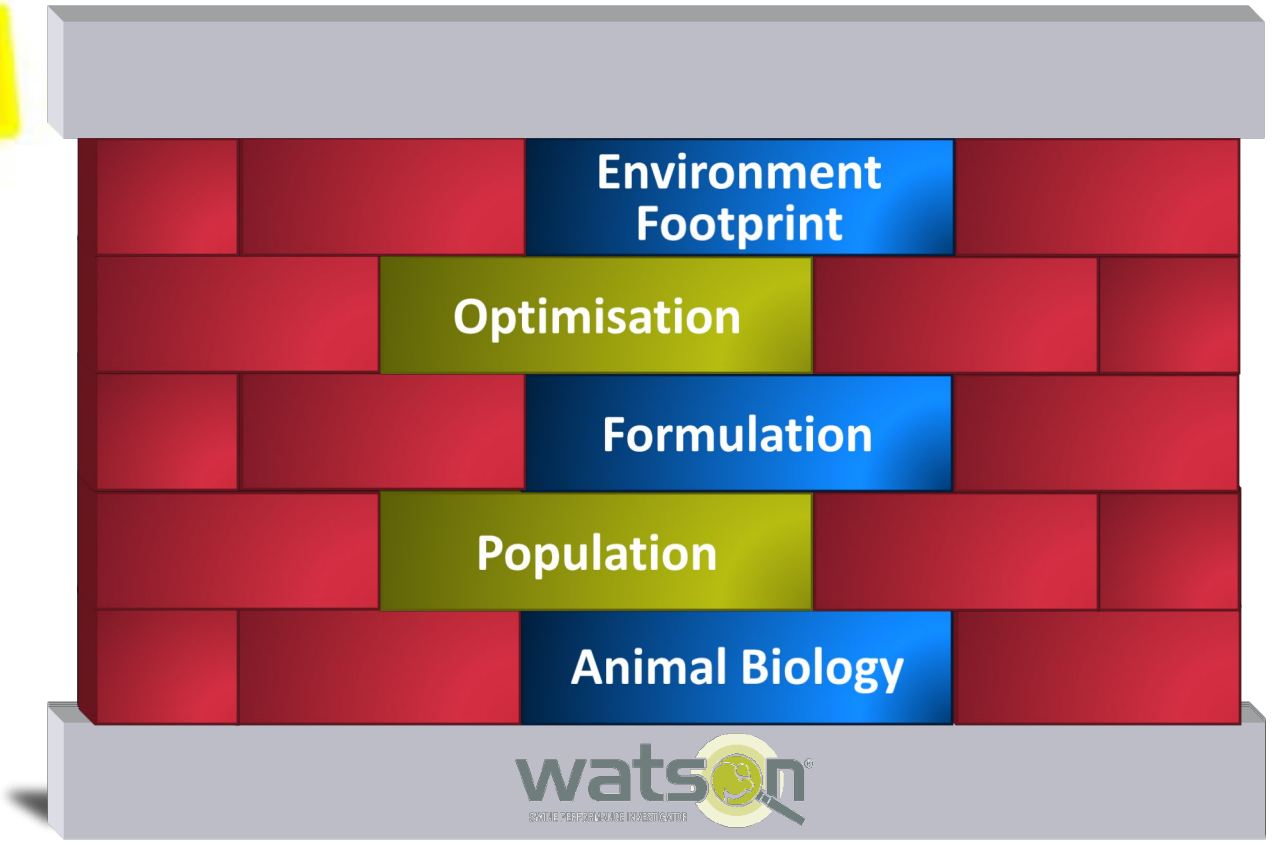
Key Components



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Value Creation

Farmer

+€6/pig

potential

Value

- ***Improve performance and profits***
- ***Optimize shipping to market***
- ***Customize nutrition***
- ***Feed Additive benefits ?***
- ***Solve production problems***
- ***Plan financial security***

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Watson
LCA basics

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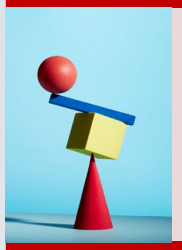
Methodology



High **uncertainty**
- database updates
- electricity sources
- ingredient mapping
- conversion factors

Based on **(PEFCR)** according to FEFAC (2018) and **ISO standards**

Rules

GFLI 2.0 (2022)
AgriFootprint 6.3
Ecoinvent 3.9

Inventories

Farm emissions based on **IPCC Tier 2-4** methods

Emissions

Economic allocation for multifunctionality

Allocation

LCA model uses **SimaPro** software

SimaPro

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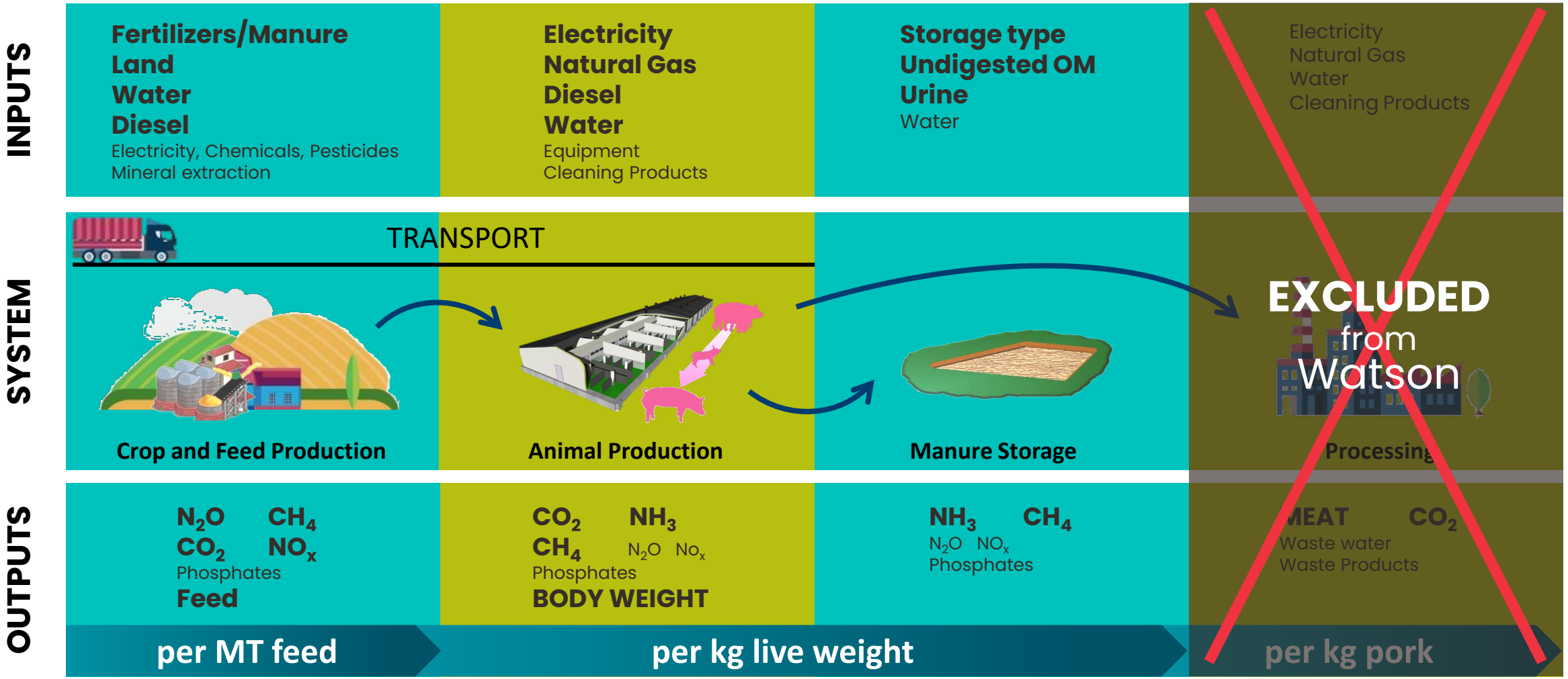
System Boundaries



(MyFeedPrint)

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Environmental Indicators

Climate Change, GHG (CO_2 eq)

Non renewable RESOURCE USE

freshwater EUTROPHICATION (P)

WATER SCACITY

LAND USE

marine EUTROPHICATION (N)

ACIDIFICATION

terrestrial EUTROPHICATION (N)

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Validation

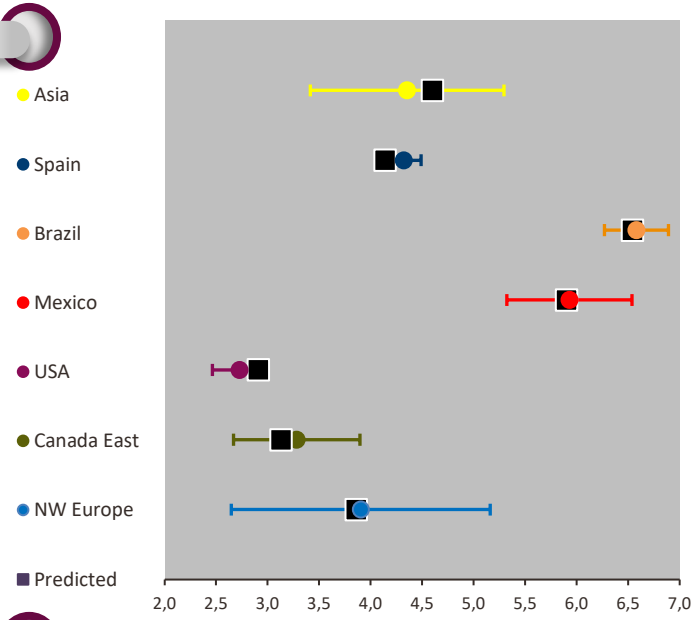
LCA model for swine production

Description of the swine production LCA model for Nutreco/Trouw Nutrition for conformance with the ISO14040/44:2006 standards

PRé
Fact-based sustainability

CLIMATE CHANGE

(kg CO_2 eq/kg live weight)



Independent 3rd Party Audit

Conformed to ISO14040/44:2006 standards

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Source of GHG in Pork Production

(Source: Groupe AGECO, 2018)

Feed
40-70%

Manure
20-30%

Farm
5-15%

Processing
5-8%

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Watson
Environmental Footprint Insights

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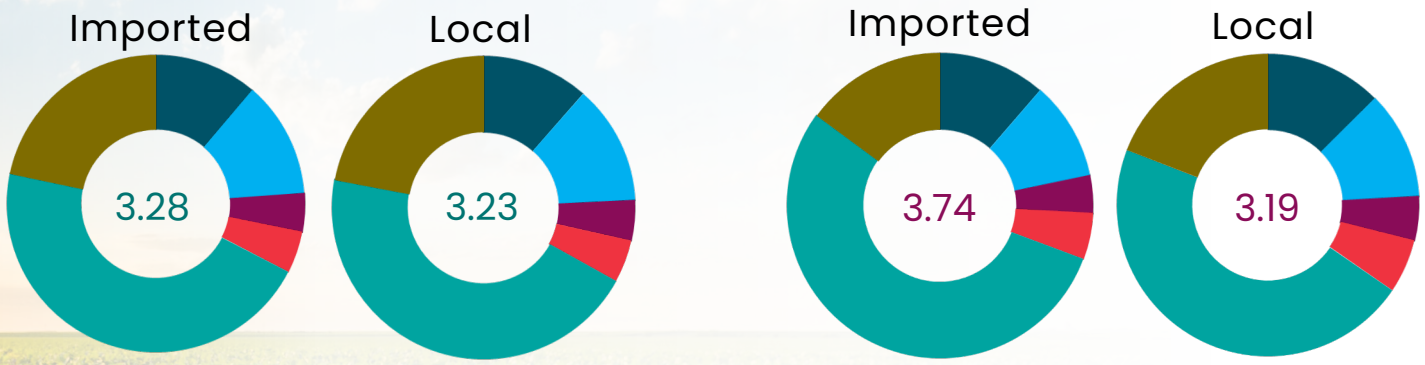
Ingredient Source

Climate Change

(kg CO_2 eq/kg Live Weight)



North America	Europe
Local **-1.5%**	Local **-14%**
minimal imports	*↓ imports* *↓ feed impact*

↓12%

Noya et al (2016)

deQuelen et al (2021)

- Sow
- Nursery
- G-F Enteric fermentation
- G-F Farm Operations
- G-F Feed
- G-F Manure

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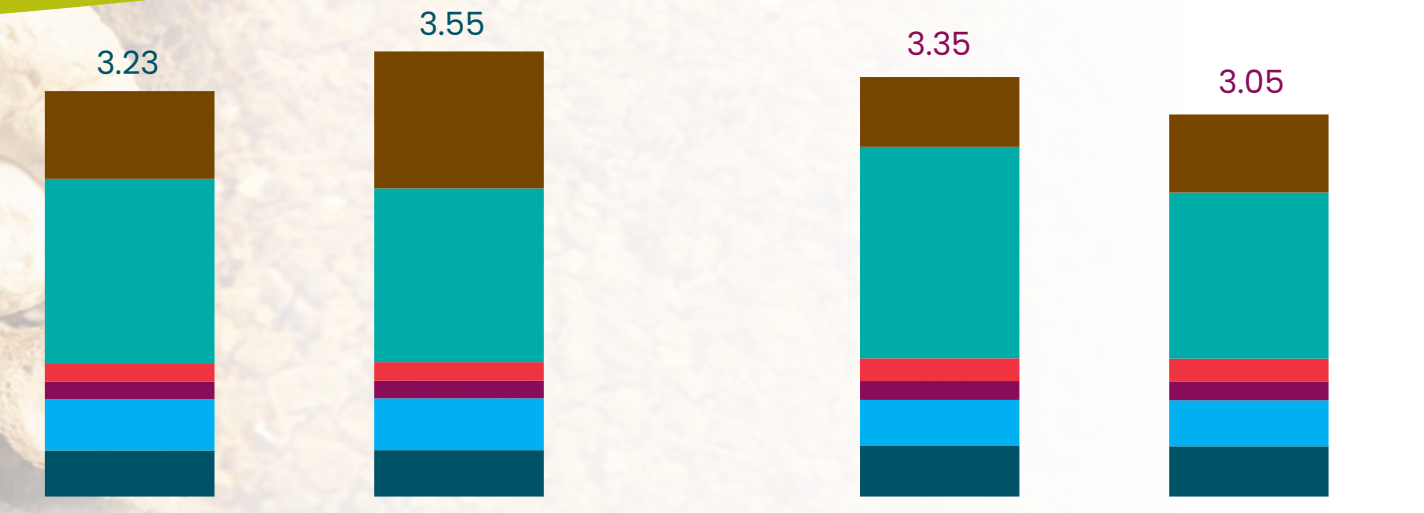
Co-products

↓3-10%

van Zanten et al (2015),
MacKenzie et al (2016)
Ali et al (2018)

Climate Change

(kg CO_2 eq/kg Live Weight)



Corn/Soya (NA)

+10%

6% ↓ Feed CO_2
55% ↑ Manure CO_2
(reduced digestibility)

Wheat/Barley (EU)

-9%

22% ↓ Feed CO_2
11% ↑ Manure CO_2
(small impact on digestibility)

Sow
G-F Enteric fermentation
G-F Feed
Nursery
G-F Farm Operations
G-F Manure

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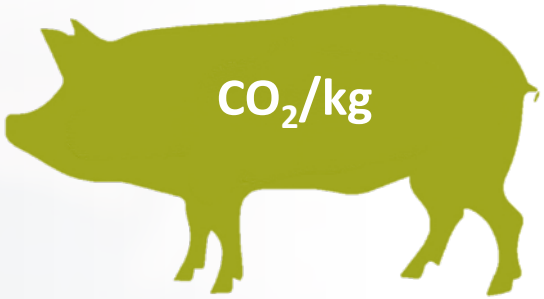
Caution



↓ Feed CO_2 ≠ ↓ Farm CO_2

Depends on Feed **EFFICIENCY** and Nutrient **DIGESTIBILITY** (Protein and Fibre)

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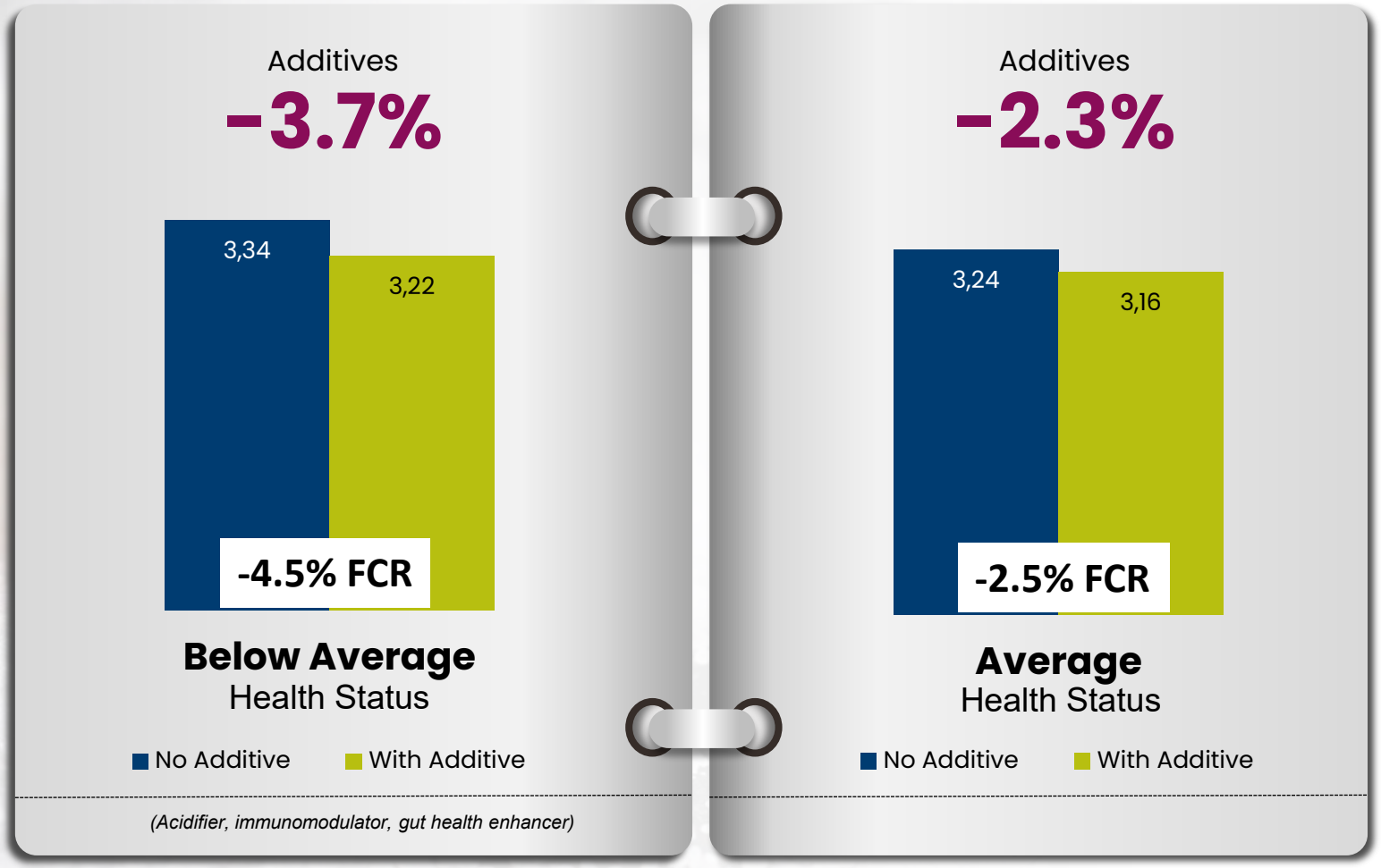
Additives

Climate Change

(kg CO_2 eq/kg Live Weight)



Reduction due to
improved feed efficiency

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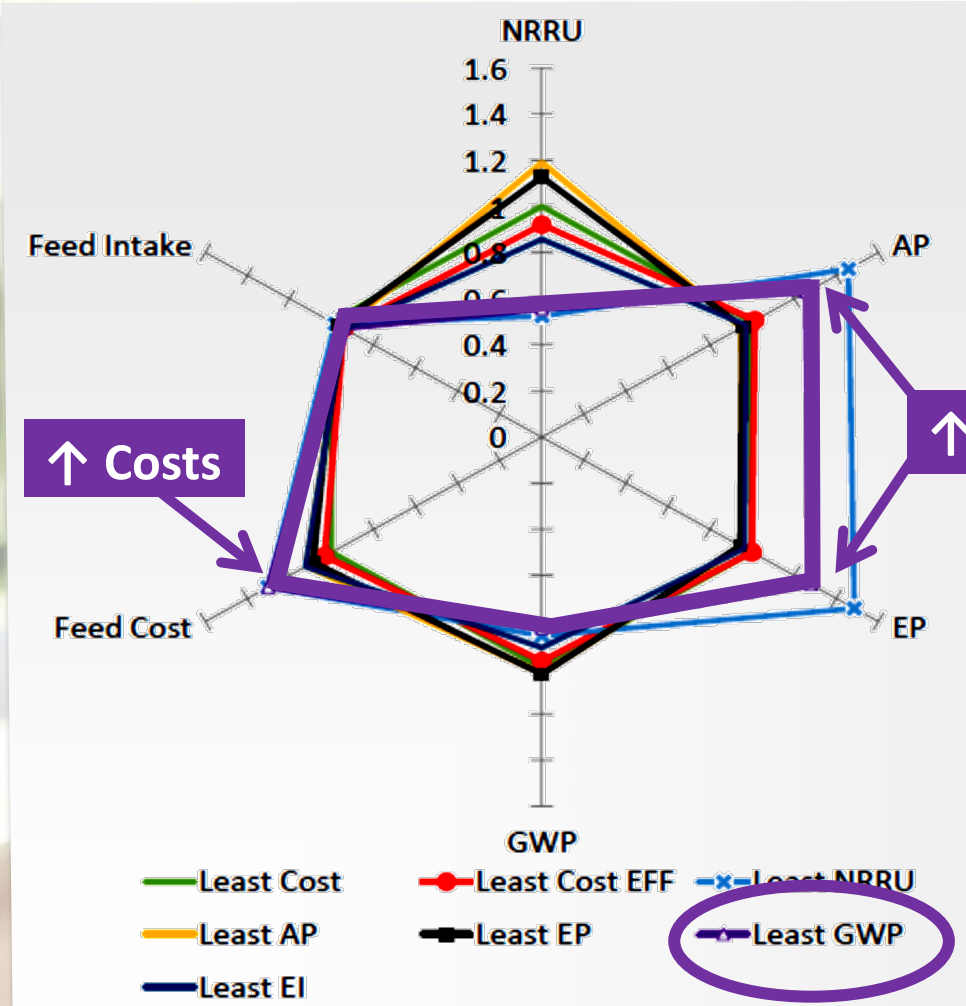
Formulation

Compare formulations to least cost diets



Environmental impacts **vary** with different formulation **objectives**.

Minimize one category can **increase** other impacts and costs.

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Genetic Potential

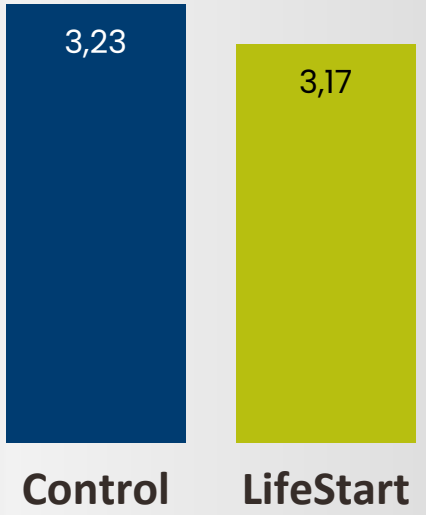
PRODUCTIVITY
30-40% below
genetic potential

Early life nutrition can contribute toward realizing **potential** growth

Climate Change

(kg CO_2 eq/kg Live Weight)

LifeStart
-2%



LifeStart program:
-0.5% Prewean Mortality, +0.5 weaned pig,, -1% pt mortality, +1.5kg End nursery

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Manure Storage

DAILY vs 4mth empty pits
(Digesta)

-14%

CO_2 equivalents

(from Michiel Vandaele, 2023)

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Management

Climate Change

(kg CO_2 eq/kg Live Weight)

improve **HEALTH**
-5%

reduce **MORTALITY**
-1%
per % point ↓ mortality

increase pig **SPACE**
-0.5%
per extra ft^2/pig

decrease feed **WASTE**
-1%
per % point ↓ waste

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Action items

FEED

Ingredient source - local

Partner - crop farms
(Regenerative agriculture)

Circularity
(Reduce, ReUse, Recycle)

Operational efficiency
(Pellet conditioner, Fines, QC)

Diets: Improve FE

Reduce undigested OM

FARM

HEALTH !

Attention to detail
(sows, nursery, water, electricity, waste)

More with less

Optimize
(shipping, budgets)

MANURE

Harness Biogas

More frequent flushing

Reduce feed waste

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Watson
Our Experiences

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Our Experiences

Benchmark environmental footprint
(using Watson)

Isoporc	Quebec
2.73	**3.20**
kg CO_2 eq	kg CO_2 eq

↓15%
(average Quebec production)

- Improve Health (Biosecurity, Vaccines)
- Alternative Genetics
- Optimum Nutrition (Diets, Cost, CO_2)
- Reduce Mortality

Our Experiences

Ferme S Roy farrow-finish farm, grow 85% feed ingredients (35K market pigs)

Benchmark environmental footprint
(using Watson)

Ferme Roy	Quebec
2.58	**3.20**
kg CO_2 eq	kg CO_2 eq

improved **FCR**

↓19%
(average Quebec production)

?

- Reduced FCR
- Good Health + Low Mortality
- Use own ingredients
- Reduce transport (ingredients + pigs)

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Our Experiences

"… focus on reducing our electricity, natural gas, water, solid waste and food waste. "

↓15% ↓17% ↓11%

?

- Reduce feed waste & FCR
- Improve operational efficiencies
- Carbon offset projects
- Anaerobic digestion
- Grains from Regenerative Agriculture

World's 1st carbon neutral food company (75 – 80K sows)

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(Pictures and Source: Maple Leaf Sustainability Report 2022)

CONCLUSIONS

SERVICES and SOLUTIONS available watson

Nutrition

2-15%
CO_2 eq reduction

Production

1-20%
CO_2 eq reduction

Efficiency

5-20%
CO_2 eq reduction

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Thank you for listening

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SAMEN
TO INFINITY
AND BEYOND...
KLAAR OM HET
VERSCHIL TE MAKEN?

NIR en NutriOpt

Johan Kroon

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Precision nutrition

Analyseren = inzicht in kwaliteit

- Nauwkeuriger produceren = gebruik van minder grondstoffen
- Beter voer = beter presterende dieren
- Inzet reststromen = lagere CO2-voetafdruk

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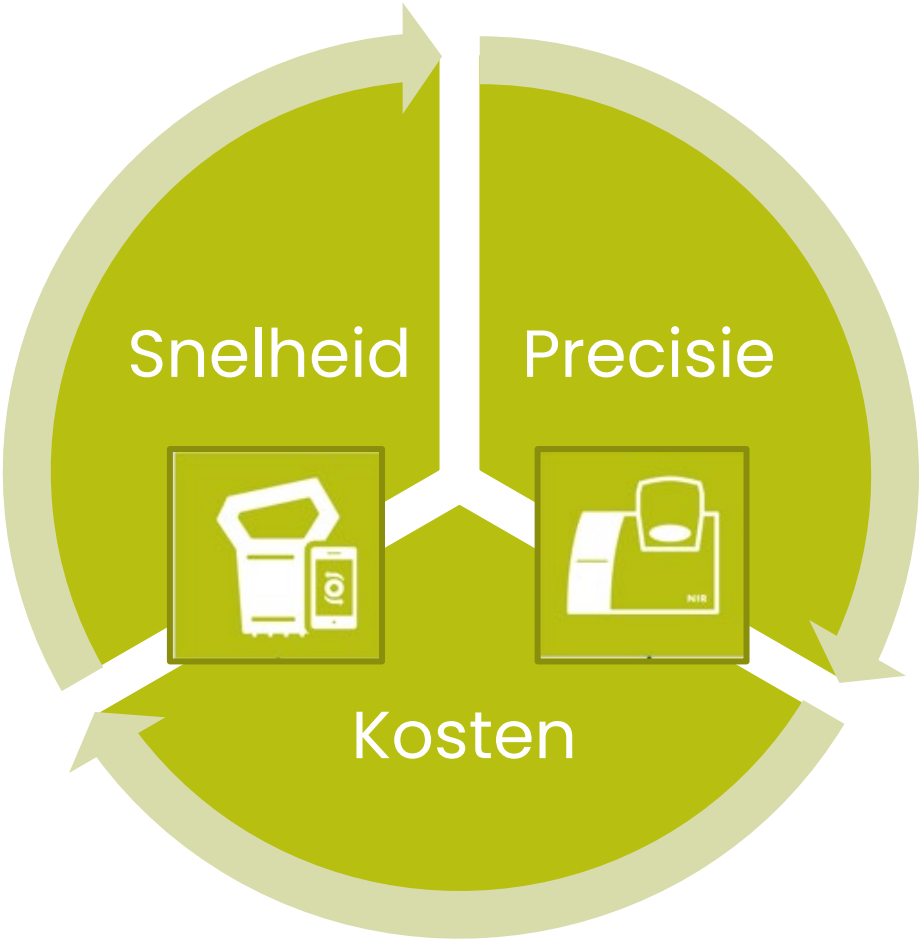
NutriOpt NIR: Analyseren in balans



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NIR-technologie: nauwkeurig en snel

- Bepaling nutritionele waarde op basis van een grote database van referentiewaardes (geaccrediteerde kalibratieontwikkeling).
- Nauwkeurigheid vergelijkbaar met de referentie-analyse (ISO 17025 gecertificeerd laboratorium).
- Resultaten beschikbaar binnen 1 minuut.
- Geen voorbewerking van de monsters.

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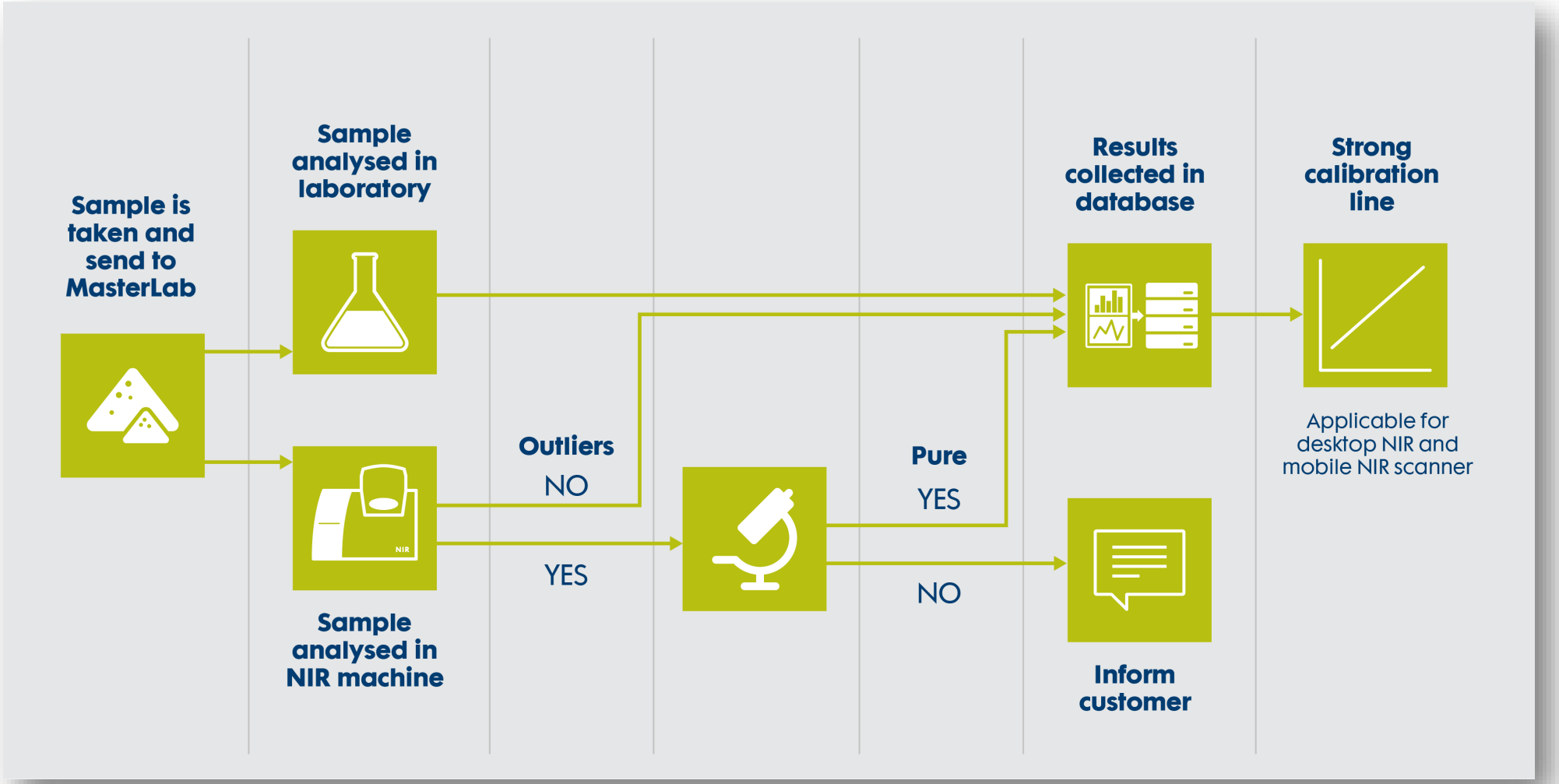
Ontwikkeling nieuwe ijklijnen



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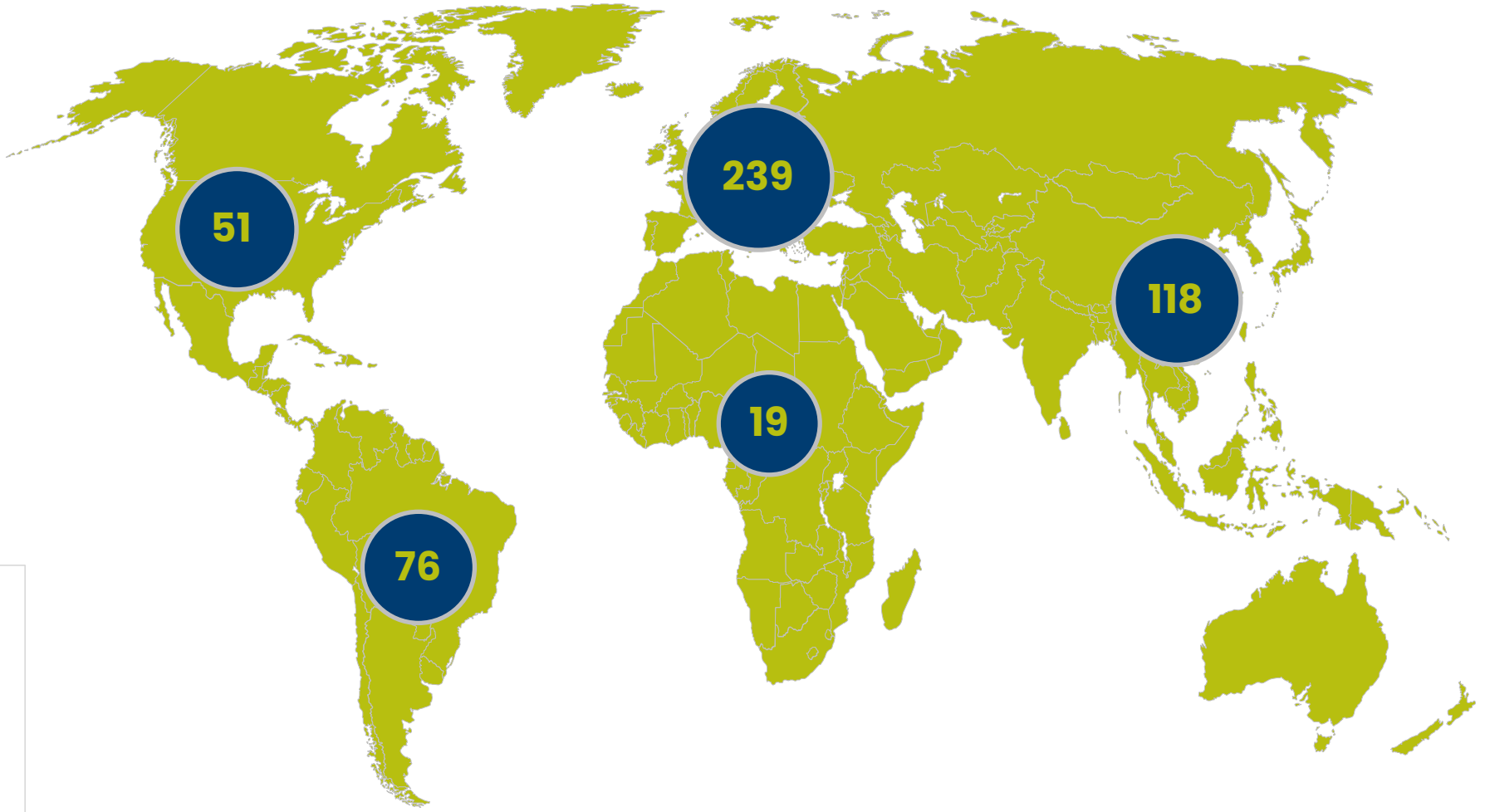
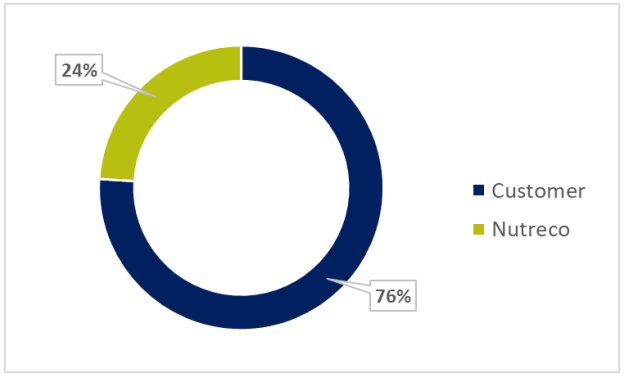
Het NIR-netwerk van Trouw Nutrition

503 NIRs wereldwijd





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Nieuwe innovatie: F-serie scanner

- Nieuwe NIR-sensor
- Snellere scantijd < 3 minuten
- Langere batterijduur
- Verbeterde Bluetooth

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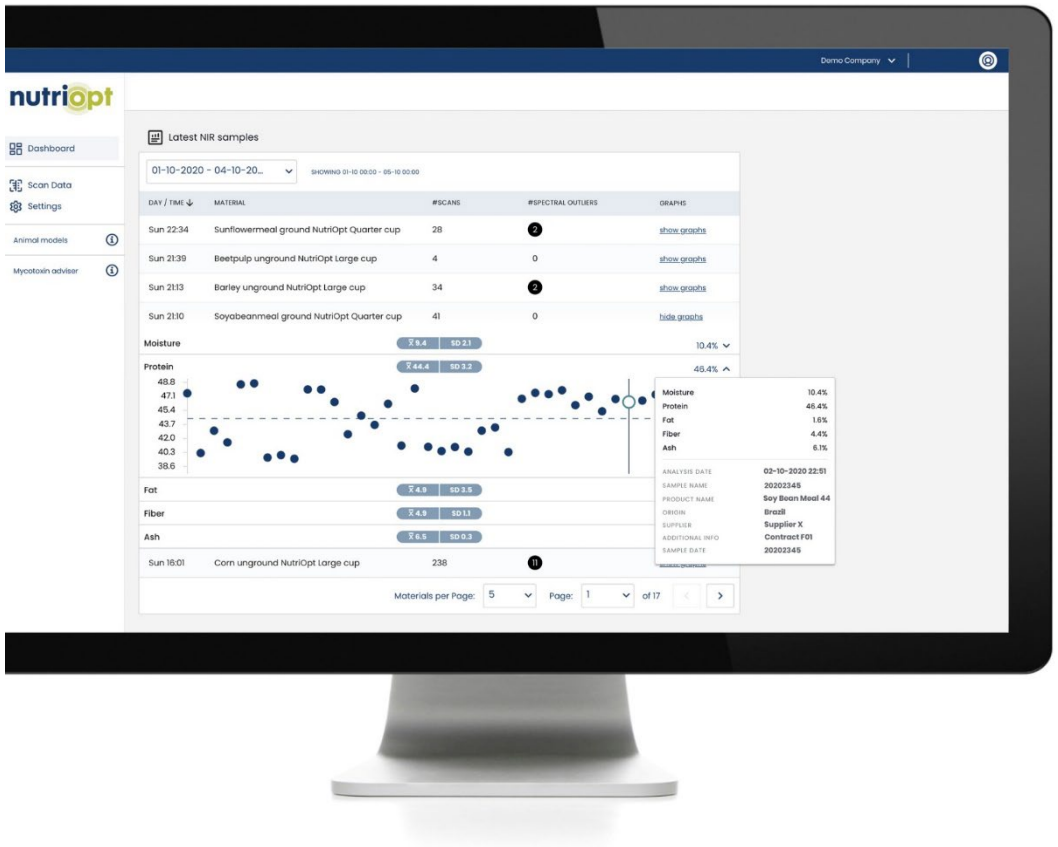
Feed data direct beschikbaar in MyNutriOpt



Gegevens uit verschillende analysetools worden rechtstreeks in MyNutriOpt gesynchroniseerd:

NIRS operator · QA/QC manager · Nutritionist · Plant manager

- Verschillende afdelingen binnen jouw bedrijf zijn tegelijkertijd verbonden met dezelfde data
- Alle gebruikers hebben alle gegevens op één locatie: MyNutriOpt-portaal
- Dit zorgt voor eenvoudiger samenwerken

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Ontwikkelde ijklijnen co-producten

- **Tarwegistconcentraat:** **DS - Eiwit - As – Zetmeel - Celstof – Vet - Glucose**
- **Tarwezetmeel:** **DS - Eiwit – As – Zetmeel – Vet – Glucose**
- **Aardappelstoomschillen:** **DS - Eiwit – As – Zetmeel - Celstof**
- **Biergist:** **DS - Eiwit**

Voordelen:

- Een betrouwbare en snelle methode voor DS bepaling zonder droogstoof.
- Eén ijklijn per product voor nutritionele parameters
- Gevalideerd resultaat

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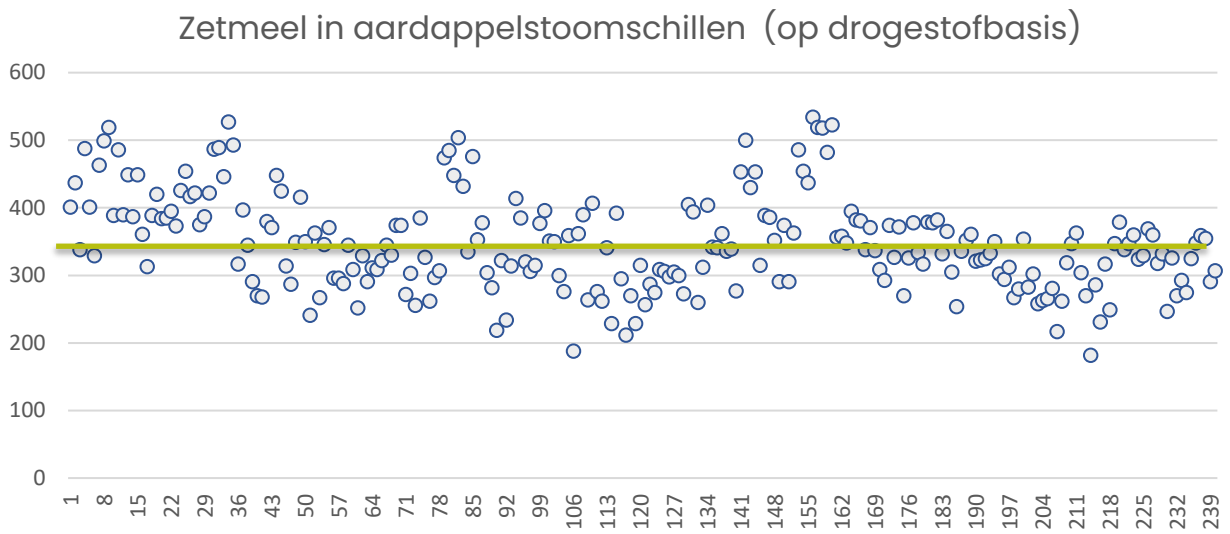
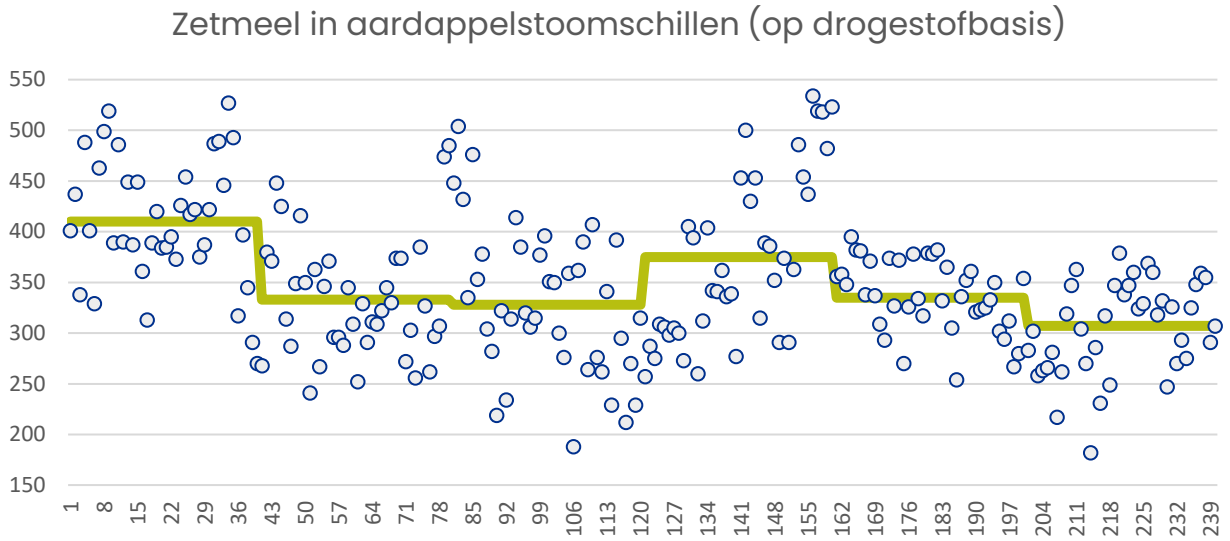
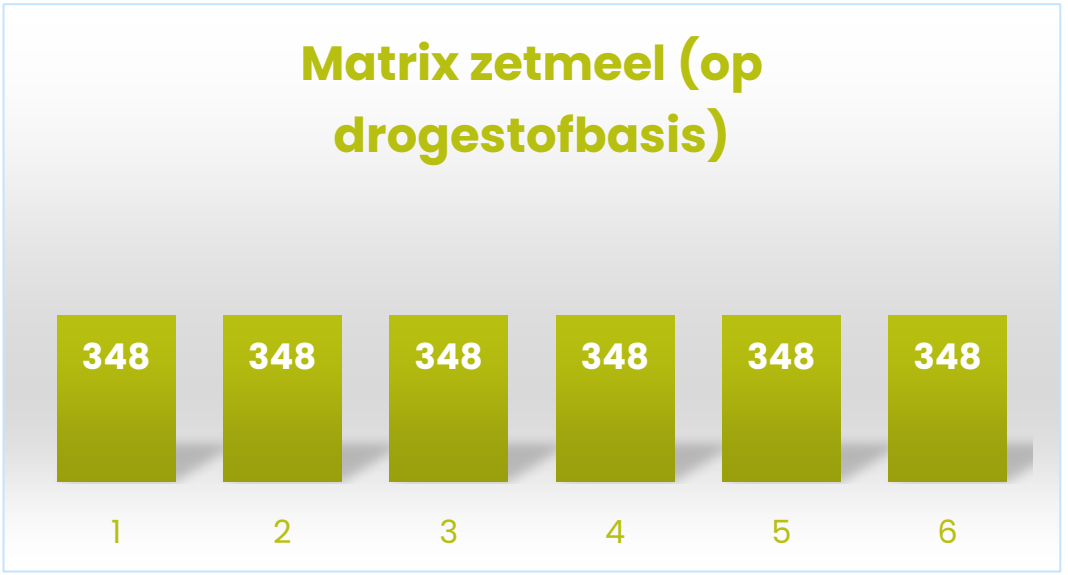
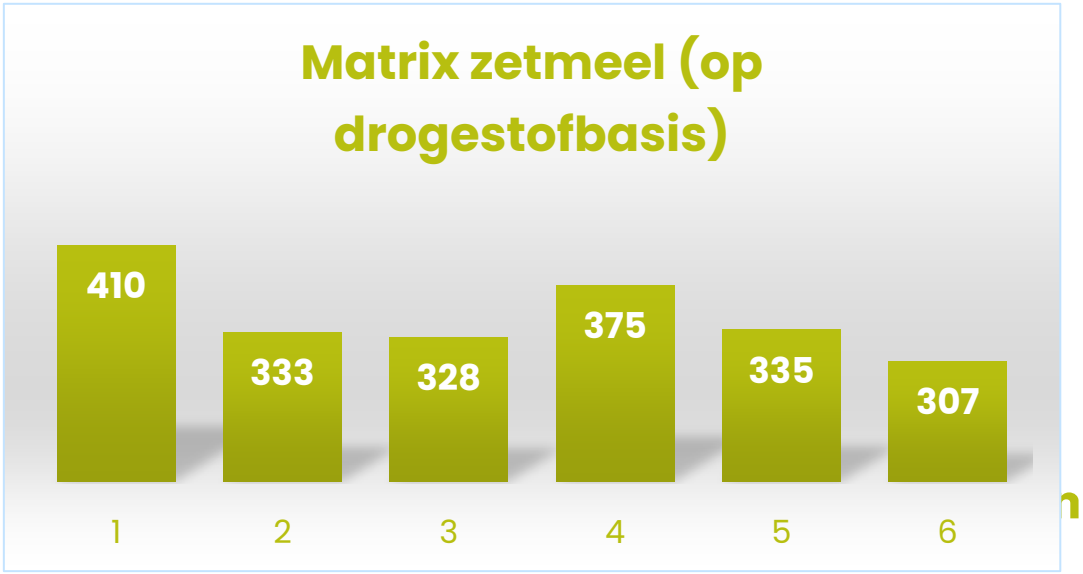
Nauwkeuriger voeren door sneller ingrijpen









nutriopt

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Precisievoeren: starten met meten! Wat voegt deeltjesgrootte toe?

Wim Lannoy

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Deeltjesgrootte meten via NIRS

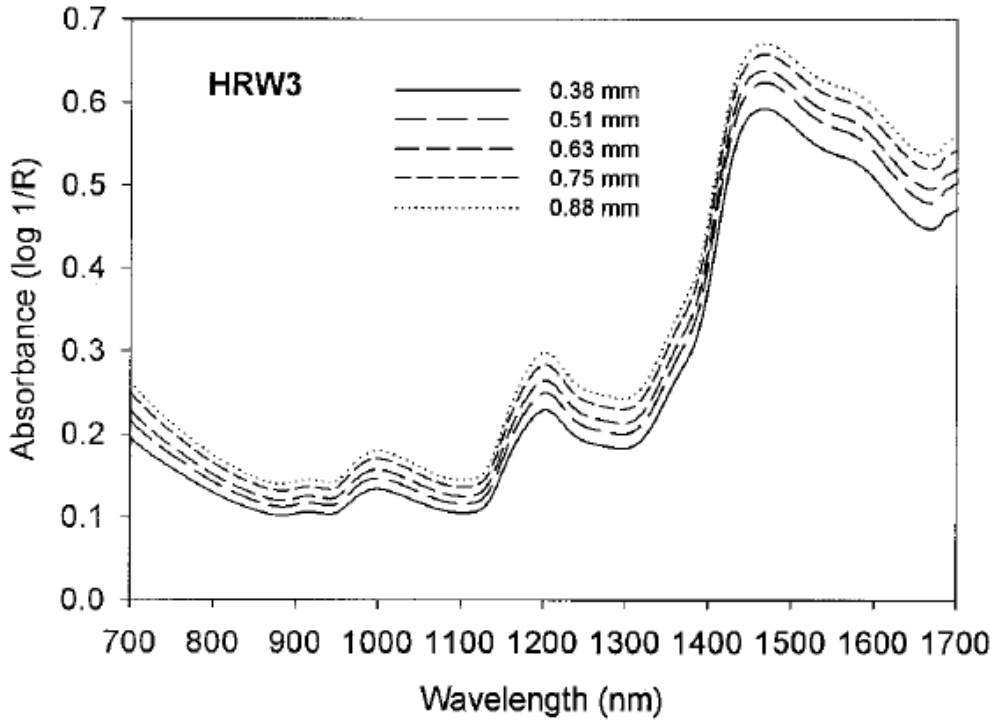

Fig. 2. Absorbance spectra of hard red winter (HRW3) wheat cultivar Rampart ground at various roll gaps (0.38–0.88 mm).

Pasikatan *et al.* (2002)

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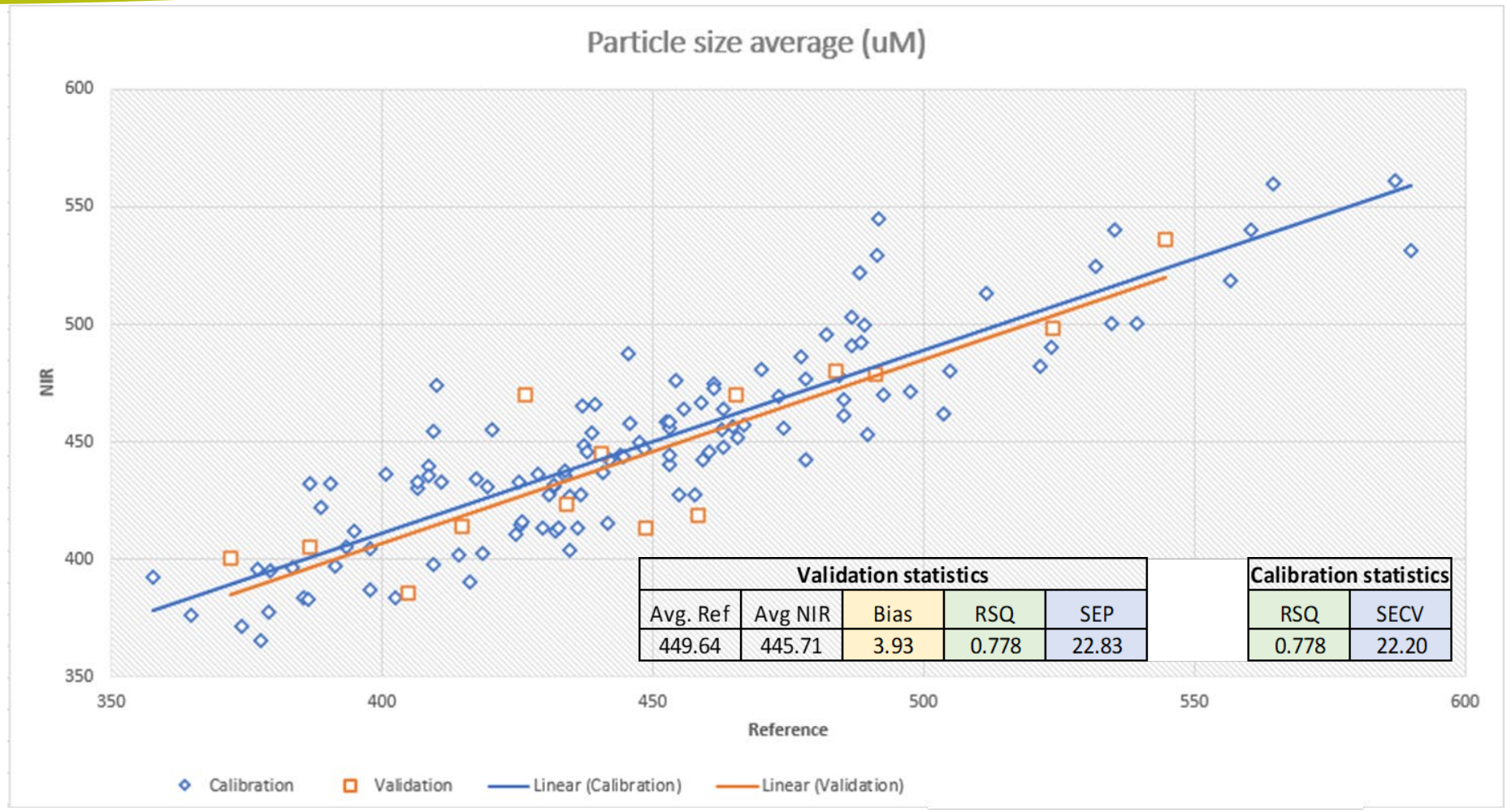
Ontwikkeling van NIRS-ijklijn voor meelvoer



Validation statistics				
Avg. Ref	Avg NIR	Bias	RSQ	SEP
449.64	445.71	3.93	0.778	22.83

Calibration statistics	
RSQ	SECV
0.778	22.20

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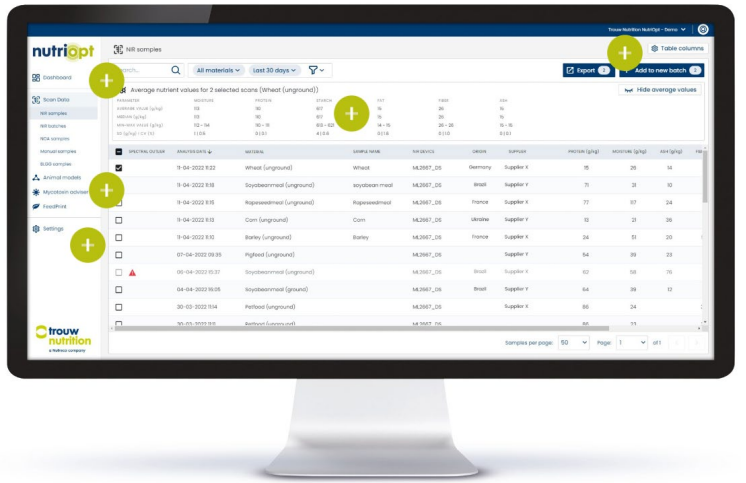
Vereenvoudiging via ParticleCheck

Zeeftoren

FOSS-NIR



nutriopt-portaal

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ParticleCheck in het NutriOpt-portaal

Nutritional data | Particle size data

BATCH NUMBER		DATE
C23001734		12/02/2023
Particle size dgw (µm)	599	Range
Standard deviation Sgw (µm)	2,42	Bound
Fractie < 250 µm (%)	16	Bound
Fractie > 1500 µm (%)	17	Bound

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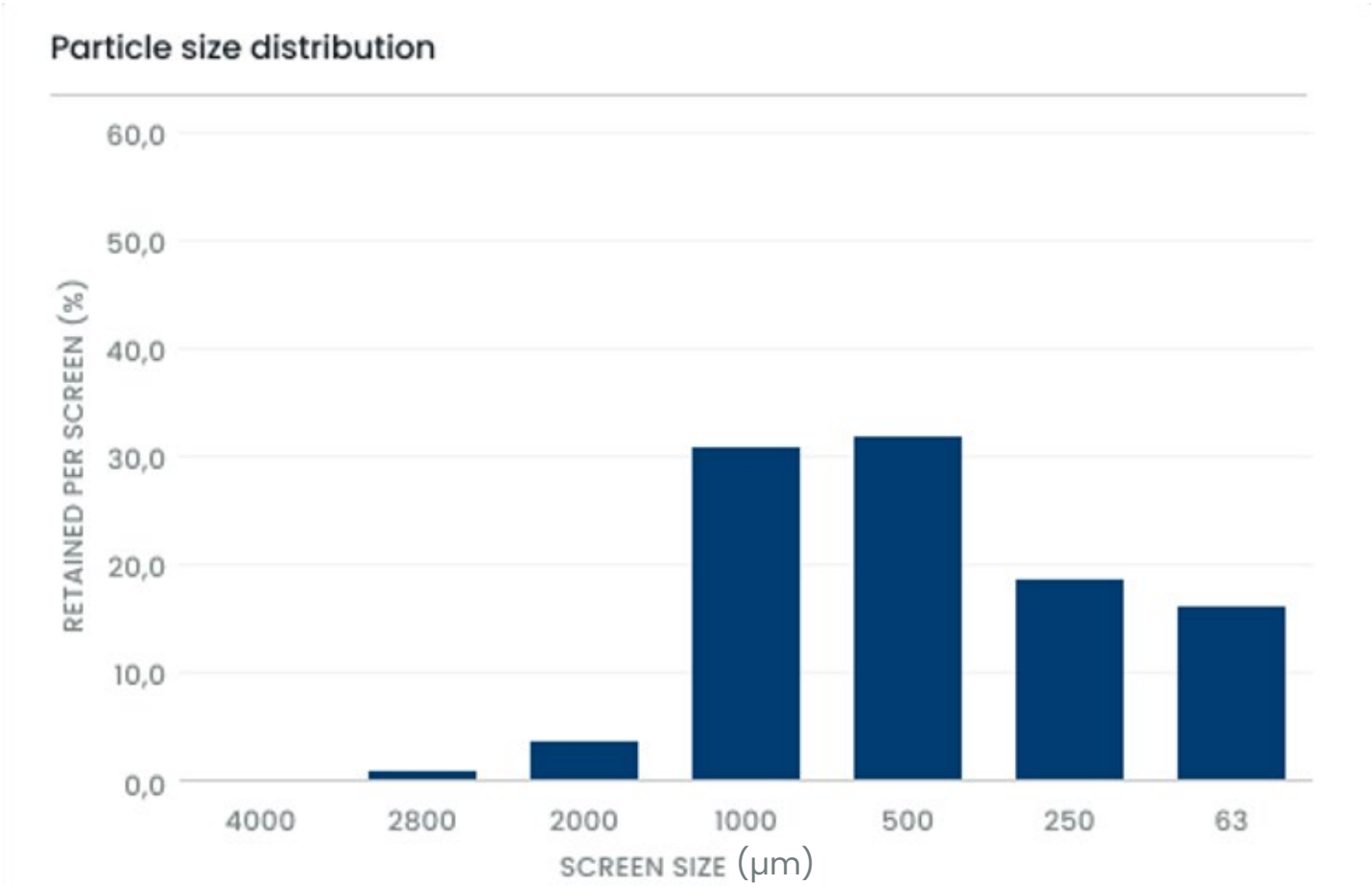
ParticleCheck in het NutriOpt-portaal



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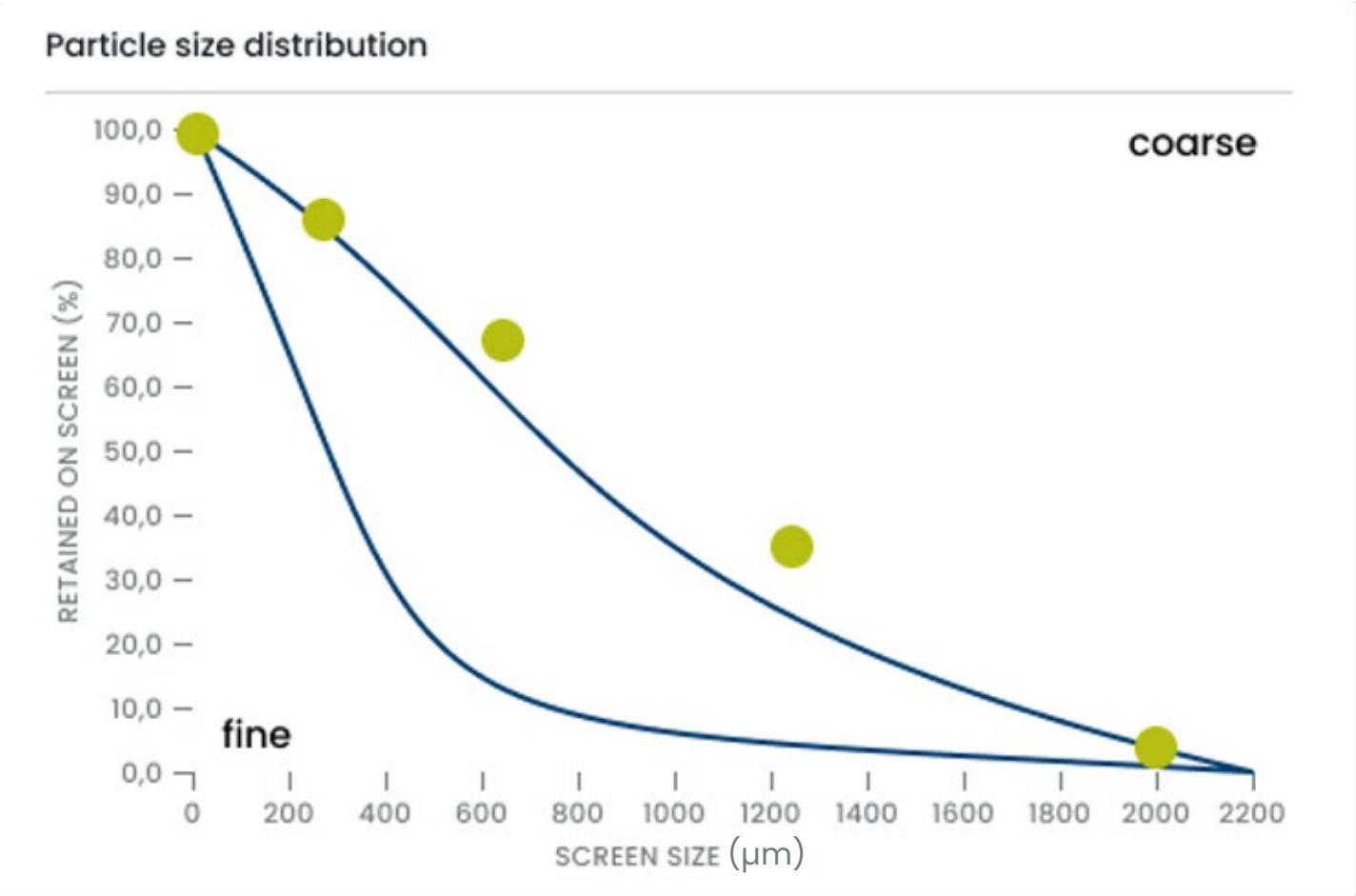
ParticleCheck in het NutriOpt-portaal



- Babybiggen <20 kg
  - *5-9 kg / 9-12 kg / 12-20 kg*
- Biggen 20-40 kg
- Vleesvarkens >40 kg
  - *40-70 kg / 70-90 kg / 90-120 kg / 120-150 kg*
- Zeugen
  - *Opfokzeugen 40-70 kg / Opfokzeugen 70-120 kg / Dracht / Transit / Lactatie*

nutriopt

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Belang van deeltjesgrootte

Fijn malen

Pro	Contra
Homogeniteit van het voeder	Slechtere loopeigenschappen
Betere voerconversie	Stofvorming
Betere korrelkwaliteit	Hogere vermalingskost
Betere verteerbaarheid	Hoger risico op maagzweren

Grover malen

Pro	Contra
Betere darmgezondheid	Slechtere korrelkwaliteit
Betere loopeigenschappen	Lagere verteerbaarheid
Lagere vermalingskost	Ontmenging
Minder kans op maagzweren	Slechtere voerconversie

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Deeltjesgrootte van grondstoffen

Grondstoffen	Zeefdiameter (mm)	TRT1 Granen grof Soja fijn	TRT2 Granen fijn Soja grof	TRT3 Granen grof Soja grof	TRT4 Granen fijn Soja fijn	TRT5 Granen normaal Soja normaal
Tarwe grof	4,0	35,4		35,4		
Gerst grof	4,0	20,0		20,0		
Tarwegries grof	12,0	6,2		6,2		
Sojaschroot grof	12,0		15,0	15,0		
Tarwe fijn	1,0		35,4		35,4	
Gerst fijn	1,0		20,0		20,0	
Tarwegries fijn	1,0		6,2		6,2	
Sojaschroot fijn	1,0	15,0			15,0	
Tarwe normaal	2,5					35,4
Gerst normaal	2,5					20,0
Tarwegries normaal	2,5					6,2
Sojaschroot normaal	2,5					15,0
Zinkoxide						0,3
Rest		23,4	23,4	23,4	23,4	23,1

Hypor x Maxter
48 biggen per behandeling
Infectie met E.coli op dag 7 na spenen
Geperste voeders
Behandeling tot dag 21 na spenen
Einde van de proef op 36 dagen na spenen

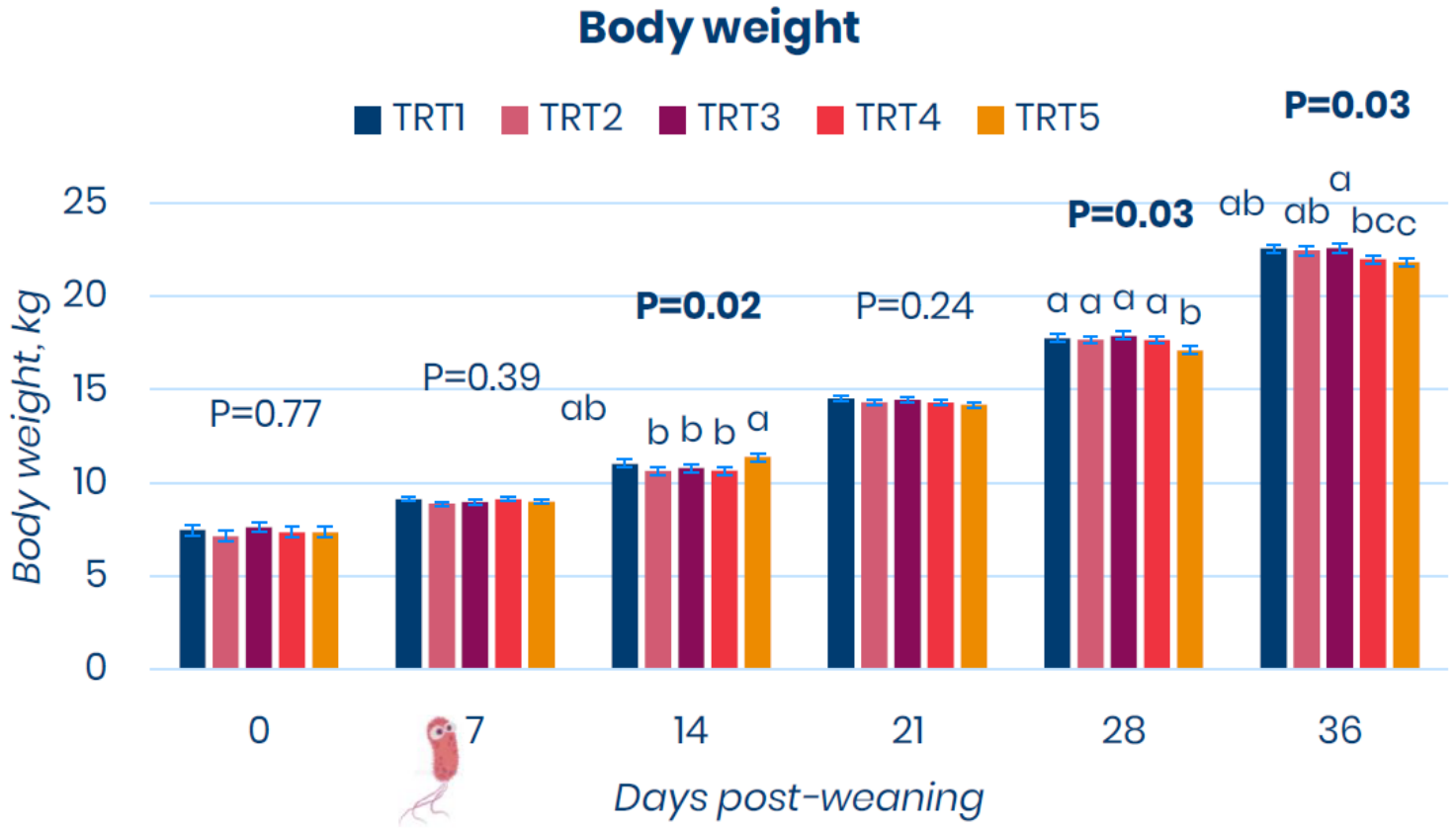
Trouw Nutrition R&D (2023)

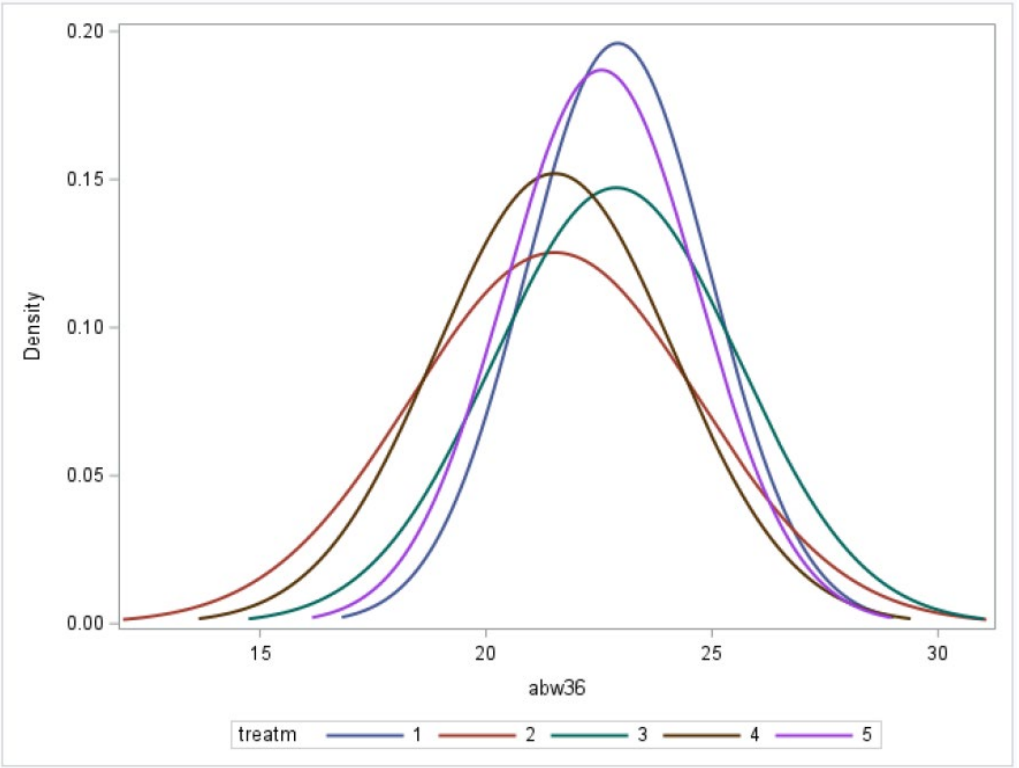
trouw nutrition
a Nutreco company

Deeltjesgrootte van grondstoffen

Geanalyseerde nutriënten	TRT1 Granen grof Soja fijn	TRT2 Granen fijn Soja grof	TRT3 Granen grof Soja grof	TRT4 Granen fijn Soja fijn	TRT5 Granen normaal Soja normaal
Vocht (g/kg)	115	110	110	109	121
Ruw eiwit (g/kg)	180	180	178	179	180
Ruw vet (g/kg)	78	76	75	79	78
Ruwe as (g/kg)	72	75	73	76	76
Ruwe celstof (g/kg)	26	27	28	26	26
Totale vezel (g/kg)	180	180	181	177	177
Zetmeel am (g/kg)	330	321	316	327	325
Zink (mg/kg)	127	133	142	146	2300
Hardheid	5,3	5,6	4,9	5,7	3,7
Slijtvastheid Pfost	89,2	93,4	89,0	94,2	83,4
GMD (µm)	270,1	155,7	290,5	137,9	328,6

Deeltjesgrootte en gewichtsevolutie



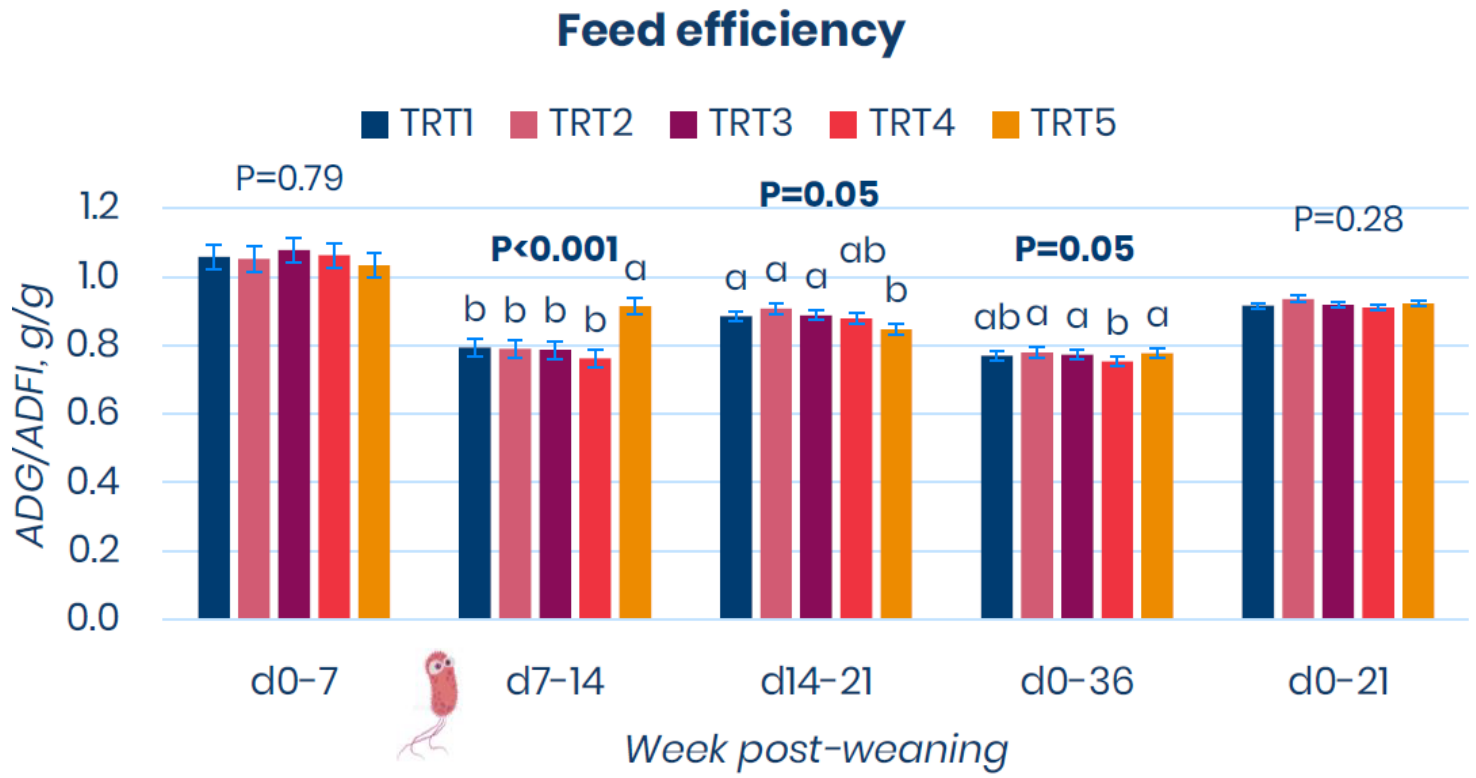


TRT1	SBM fine + cereals coarse
TRT2	SBM coarse + cereals fine
TRT3	SBM coarse + cereals coarse
TRT4	SBM fine + cereals fine
TRT5	High ZnO control

Trouw Nutrition R&D (2023)

trouw nutrition
a Nutreco company

Deeltjesgrootte en voorefficiëntie



TRT1	SBM fine + cereals coarse
TRT2	SBM coarse + cereals fine
TRT3	SBM coarse + cereals coarse
TRT4	SBM fine + cereals fine
TRT5	High ZnO control

Trouw Nutrition R&D (2023)

trouw nutrition
a Nutreco company

Deeltjesgrootte en eiwitverteerbaarheid

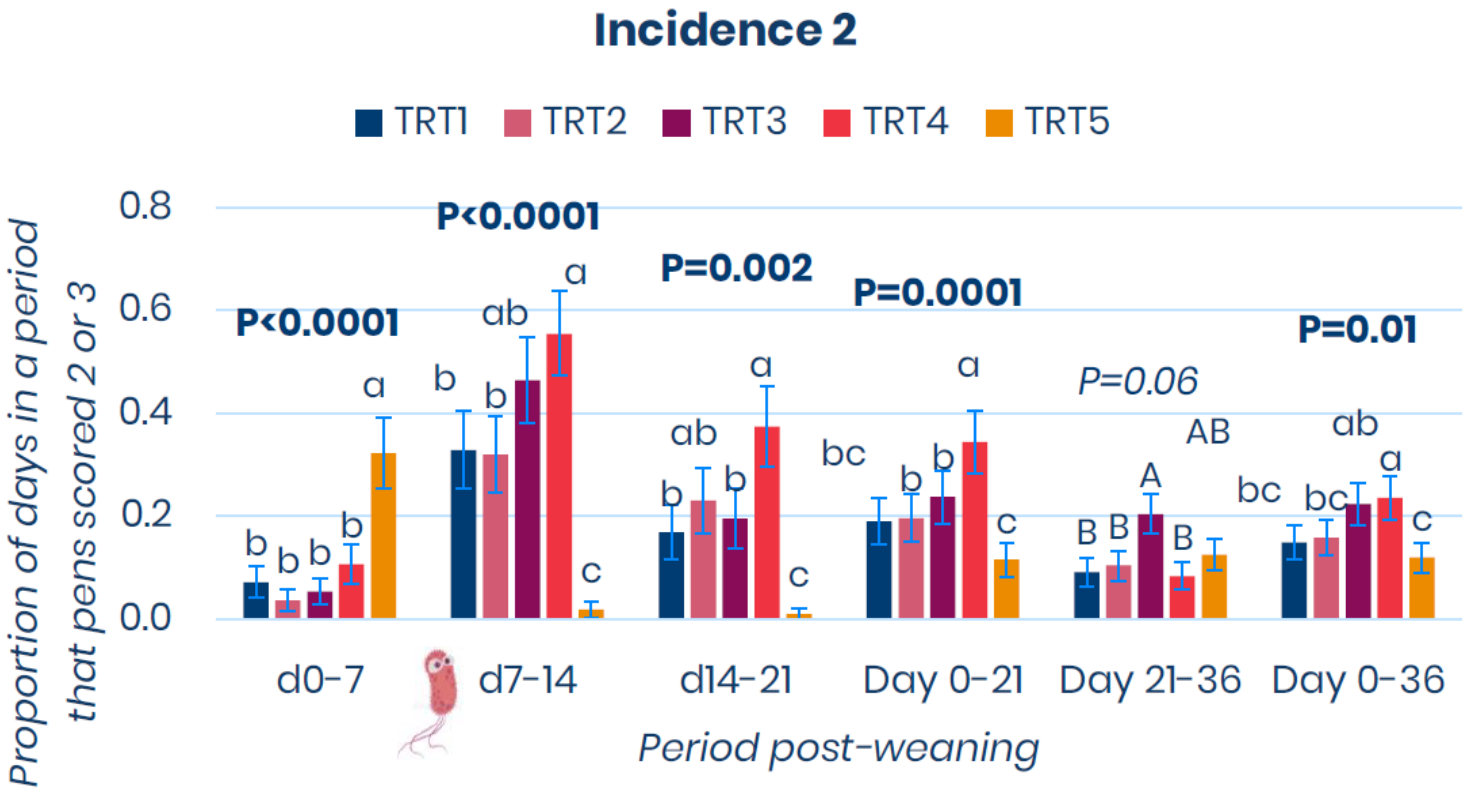
Eiwitverteerbaarheid (%)	TRT1 Granen grof Soja fijn	TRT2 Granen fijn Soja grof	TRT3 Granen grof Soja grof	TRT4 Granen fijn Soja fijn	TRT5 Granen normaal Soja normaal	SEM
Maag	48,2 AB	47,5 AB	36,1 B	62,7 A	52,4 AB	6,2
Dunne darm	62,5	64,8	59,7	67,4	74,7	5,1
Colon + Rectum	86,3 A	87,2 A	84,9 AB	85,4 AB	83,3 B	9,9

Trouw Nutrition R&D (2023)

Significantie A,B : $P<0.1$

trouw nutrition
a Nutreco company

Deeltjesgrootte en diarree-incidentie

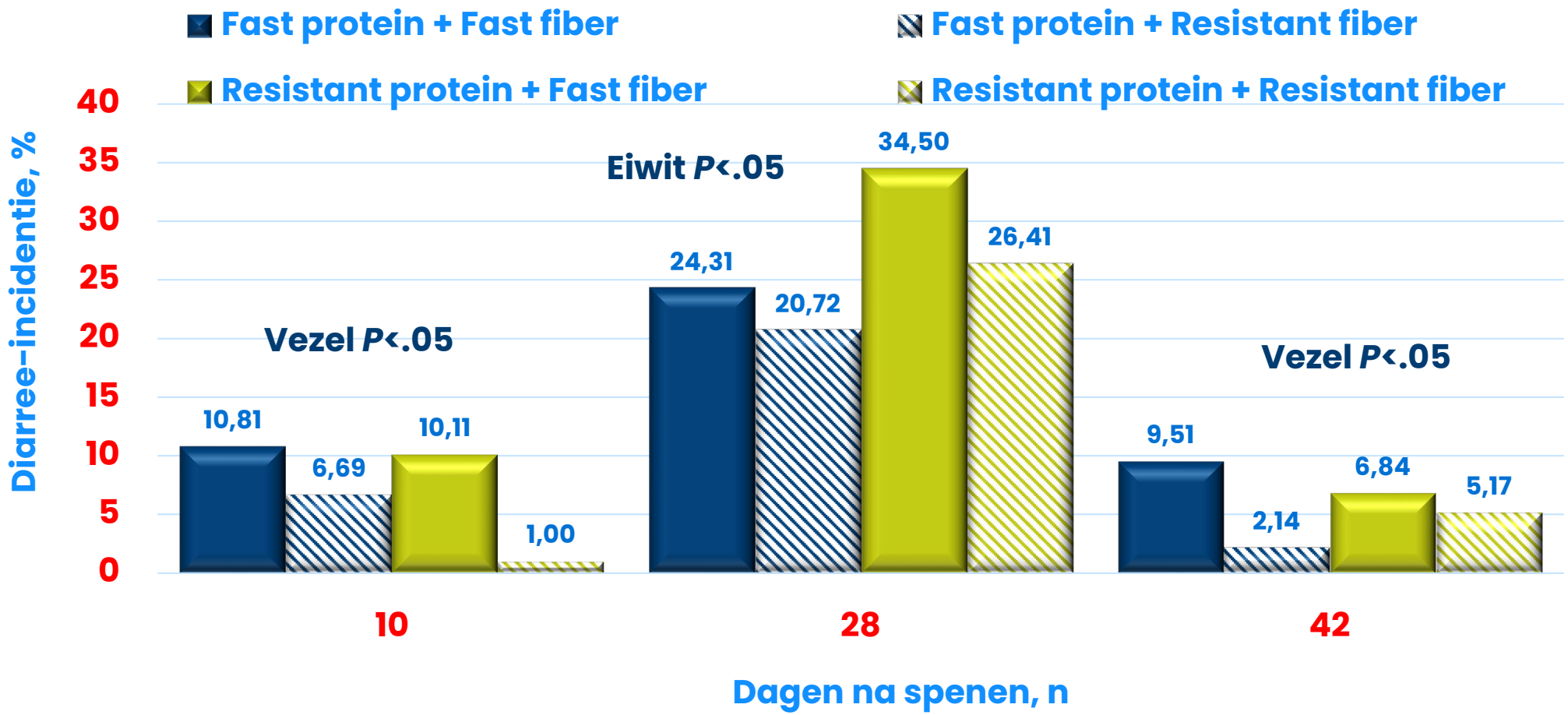


TRT1	SBM fine + cereals coarse
TRT2	SBM coarse + cereals fine
TRT3	SBM coarse + cereals coarse
TRT4	SBM fine + cereals fine
TRT5	High ZnO control

Trouw Nutrition R&D (2023)

trouw nutrition
a Nutreco company

Kinetio en diarree-incidentie

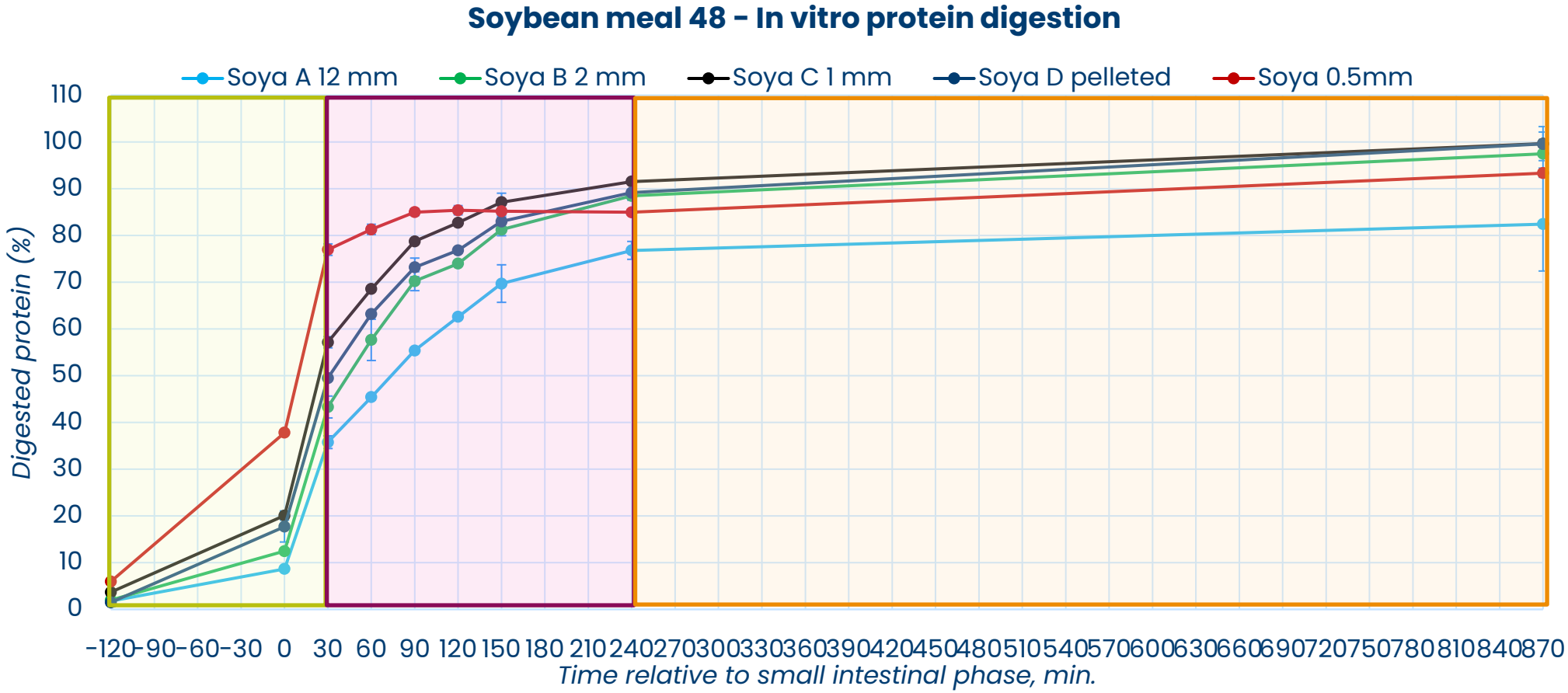


Trouw Nutrition R&D (2018)

Voeders met 19,0% ruw eiwit en 12,0 g/kg SID Lys

trouw nutrition
a Nutreco company

Deeltjesgrootte en Kinetio



Trouw Nutrition R&D (2022)

Sojaschroot D : geperst na vermaling op 2mm

Deeltjesgrootte, Kinetio en diarree-incidentie

Berekende nutriënten	TRT1 Granen grof Soja fijn	TRT2 Granen fijn Soja grof	TRT3 Granen grof Soja grof	TRT4 Granen fijn Soja fijn	TRT5 Granen normaal Soja normaal	Spido Granen fijn
Fast protein (g/kg)	105,8	111,4	91,2	115,6	98,2	119,0
Resistant protein (g/kg)	49,4	43,3	56,7	36,7	46,1	22,2
Fast fiber (g/kg)	29,7	37,7	35,7	38,7	31,6	29,4
Resistant fiber (g/kg)	53,1	50,5	51,5	49,2	52,1	57,5

Samenvattend

- De deeltjesgrootte van een voer wordt bepaald door de ingrediënten, hun vermaling en het eventuele persproces.
- De deeltjesgrootte van meelvoer kan bepaald én beoordeeld worden via NIRS-technologie en het NutriOpt-portaal.
- De combinatie van fijngemalen soja en grof gemalen granen resulteert in de laagste diarree-incidentie in de periode vanaf spenen en een betere homogeniteit op het einde van de batterijperiode.
- Het risico op diarree neemt toe naarmate voeders te fijn of te grof gemalen worden.
- De deeltjesgrootte van grondstoffen beïnvloedt hun afbraaksnelheid.
- Kennis over de afbraaksnelheid van grondstoffen kan tijdens de voerformulatie gebruikt worden om te sturen op deeltjesgrootte en de daarmee beoogde effecten.

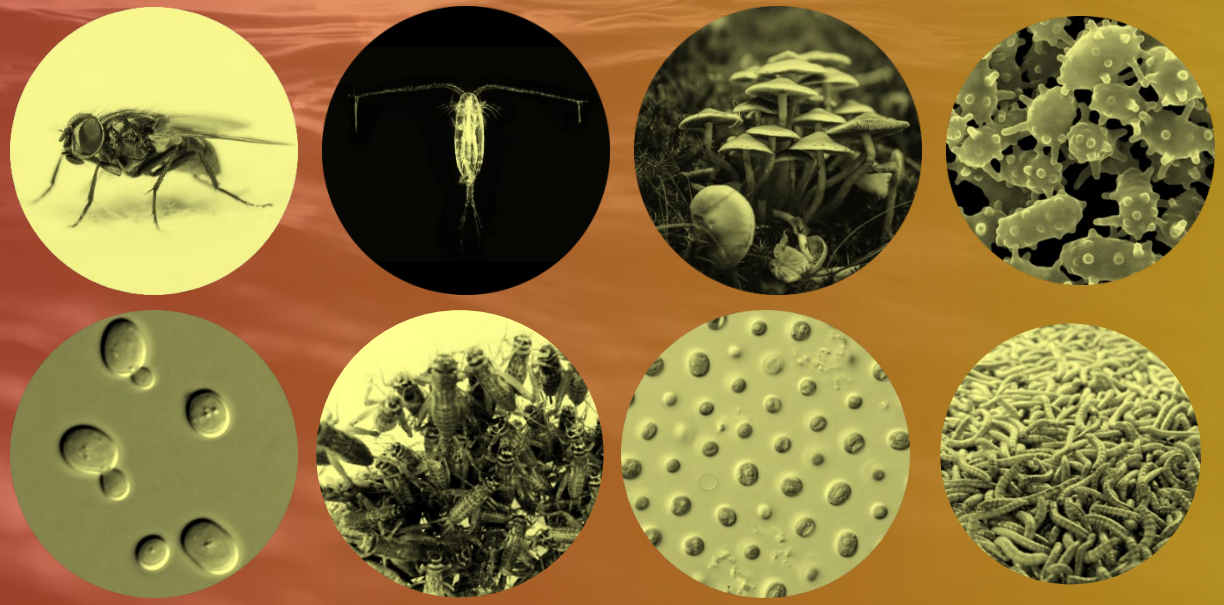

SAMEN
TO INFINITY
AND BEYOND...
PAUZE

SAMEN TO INFINITY AND BEYOND...

KLAAR OM HET VERSCHIL TE MAKEN?

Future proof grondstoffen: waar moeten we mee rekenen in 2030?

trouw nutrition
a Nutreco company



Novel Ingredients Governance in Nutreco

Mette Lütcherath – Nutreco Category Manager Novel Ingredients

Novel ingredient category

- **Established in 2017** in Skretting
- **Nutreco-wide** from 2022
- **Scope:** Macro ingredients
- **Mission:** Drive and support implementation of novel ingredients

Alternative Omega 3 Ingredients

Insect Ingredients

Single Cell Proteins

Food Industry By-Products

Vegetable and other novel ingredients

Drivers

External

- Volatile raw material markets
- Political instability
- Climate crisis

Internal

- De-risking
- Sustainability targets
- Flexibility in formulation
- Cost savings
- Own a good story

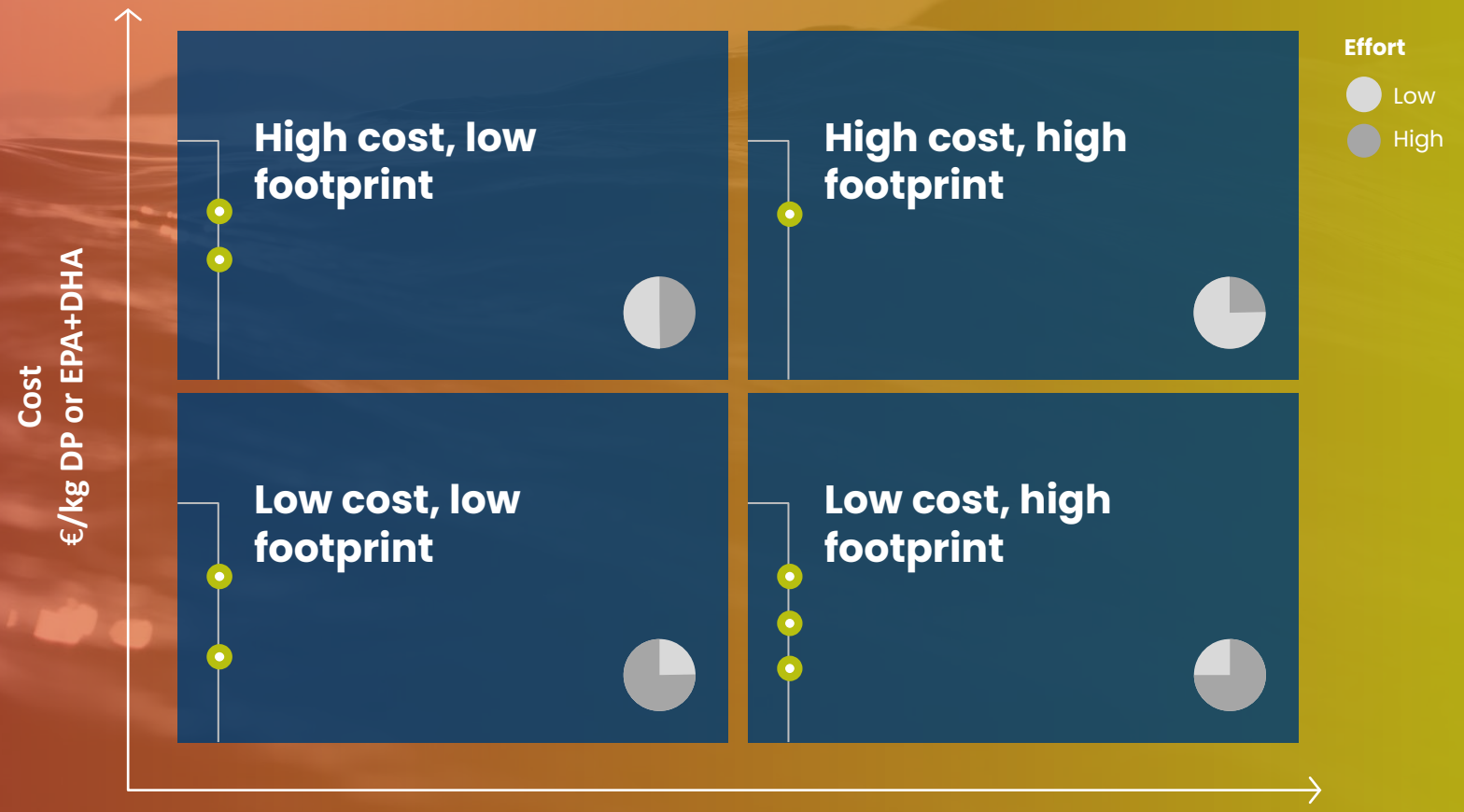
Challenges

- Unknown ingredients and processes
- Documentation
- Legislation
- Financing
- Confidentiality
- Life Cycle Analysis
- Too expensive
- Delays

Largest hurdle

From lab to scale

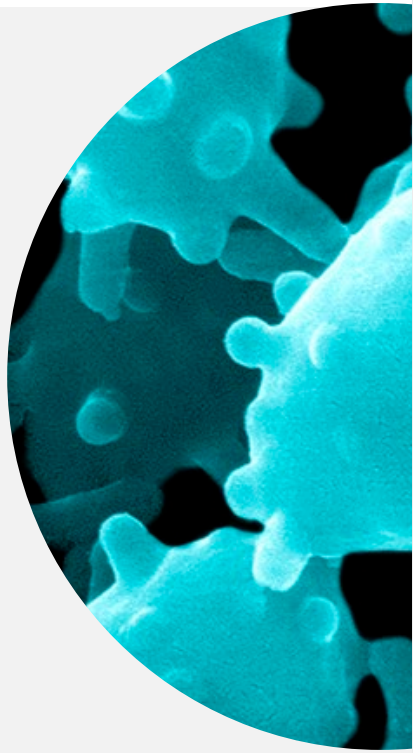
Prioritising based on cost and footprint leads to a focus on insect ingredients, omega-3 oils and single cell proteins



100,000 Tons
of
Soy Protein Concentrate

=

100,000 Tons
of
Bacteria Protein



650 km² Farmland

(= 91.000 football pitches)

Industrial plot

No arable land

Ingredient deepdive: Insects

Key opportunities:

- High protein
- Circularity
- Local sources
- Low footprint
- Tested and ready to be implemented

Key challenges

- Financing
- Scale up
- Substrate availability
- Substrate variety
- Regulations
- Price

EU	Australia	Americas	Asia
Ynsect	TERRA	Beta Hatch	PROTENGA MAKING INSECTS WORK FOR YOU
PROTIX	Bardee	ENVIROFLIGHT A Darling Ingredients Brand	Entobel
INNOVAFEED	FLYFARM	prezero	Flylab
Agronutris	Future Green Solutions	Sumitomo Corporation	
Volare			

Co-products | Sustainable feed, circular food

Trouw Nutrition | 21 november | Samen to Infinity and Beyond

Frank Waijers – Managing Director BeNeLux

Duynie Group

Part of arable farmer cooperative Royal Cosun

Cosun Facts 2022

- 8,417 members
- Founded in 1896
- 4,407 employees
- > € 2.2 bn turnover

Cosun

Unlock the full potential of plants

Cosun Beet COMPANY

AVIKO

Duynie Group

Sensus

Cosun PROTEIN

Cosun BIOBASED EXPERTS

Duynie Feed

Novidon Sustainable starch solutions

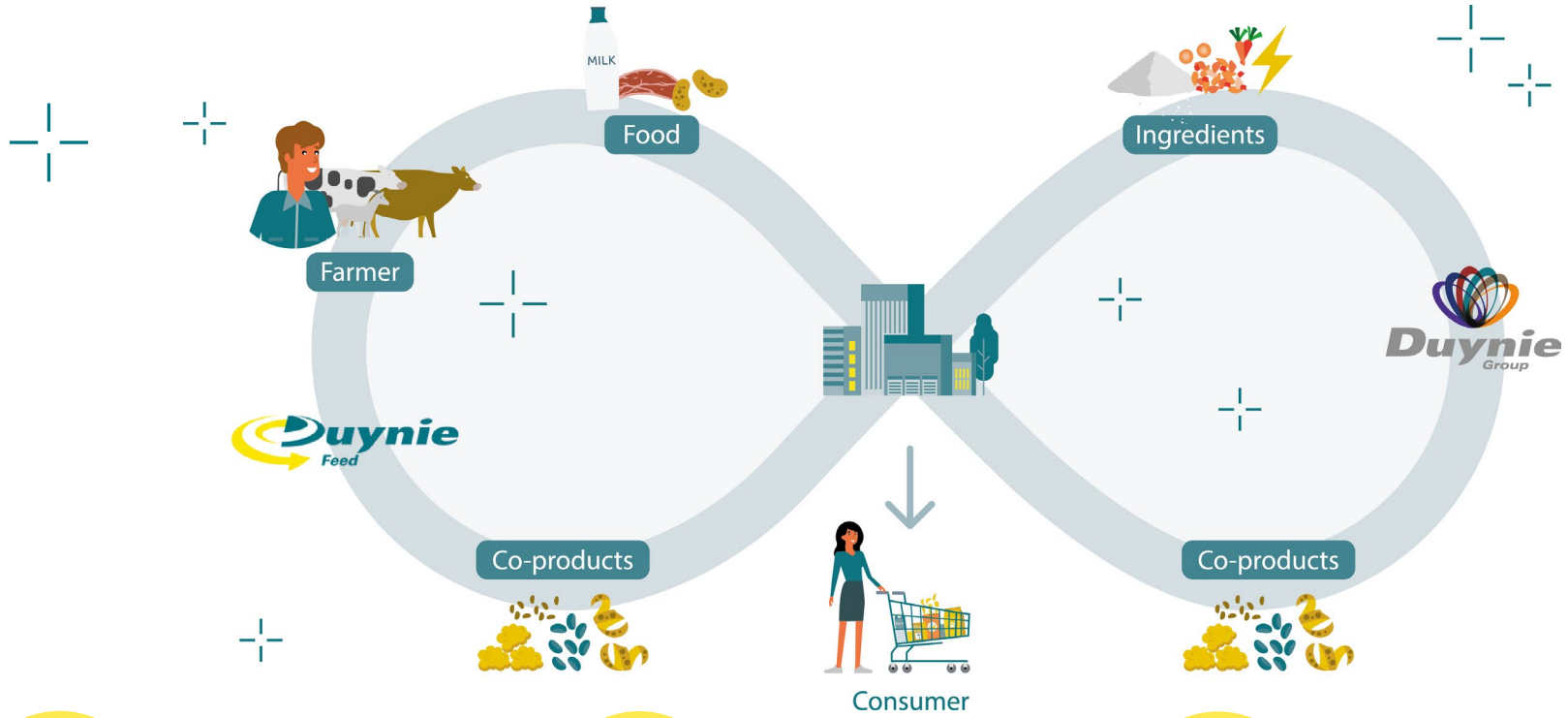
Duynie Ingredients

AgriBioSource

Creating new value | A circular business model

From co-products of food, beverage and biofuel industry

Sustainable feed, circular food



Closing loops

Lower carbon footprint

Sustainable land use

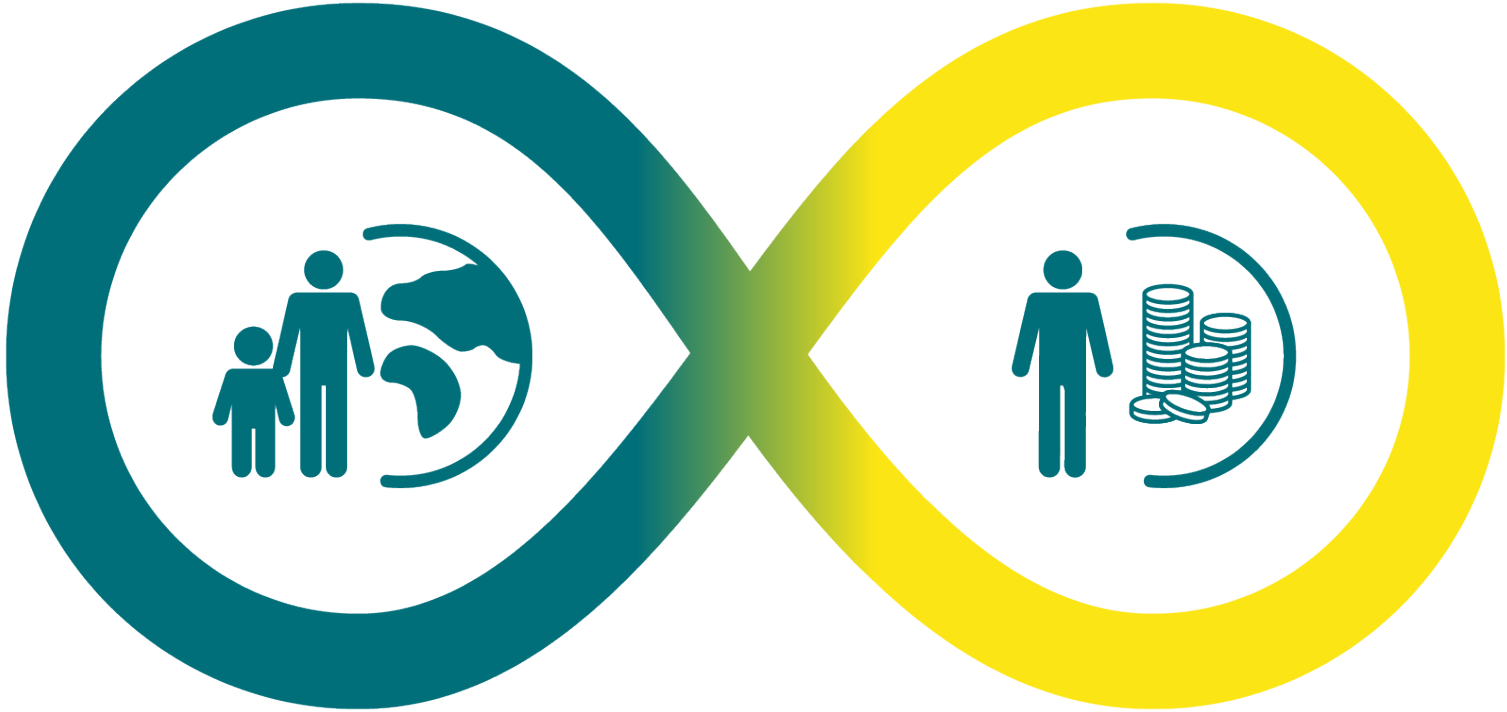
Short chains

A ROYAL COSUN COMPANY

The sustainable choice is the profitable choice

Co-products in rations can significantly reduce feed attributed CO2-eq/kg milk

29%



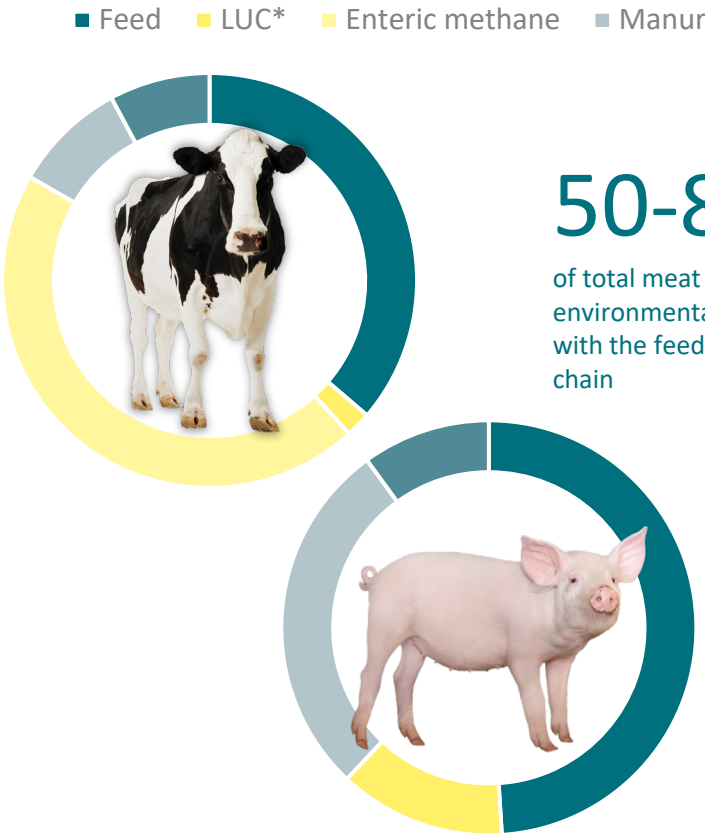
5%

Blonk *An extensive LCA analyses has been carried out by an external, independent company. Numbers are compared to nutritional comparable alternatives.

Duynie Group

Feed to livestock is single largest contributor to CFP impact Meat & Milk

Need to quantify sustainable feed



50-80%

of total meat and dairy protein environmental impact is associated with the feed side of the value chain

De plant is de held

Navigating the co-products landscape today and tomorrow

A fierce competition for biomass

Duynie Group

Co-products |
Sustainable feed, circular food

Trouw Nutrition | 21 november | Samen to Infinity and Beyond

Frank Waijers – Managing Director BeNeLux

f.waijers@duynie.nl

FEEDVALID
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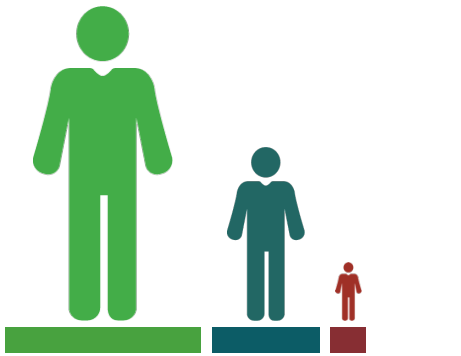
FeedValid

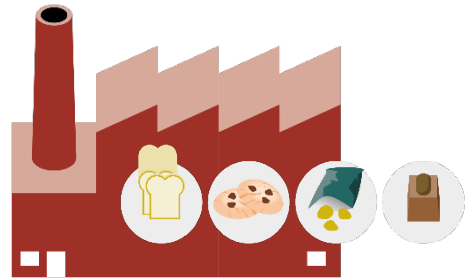
130
medewerkers



>500
klanten

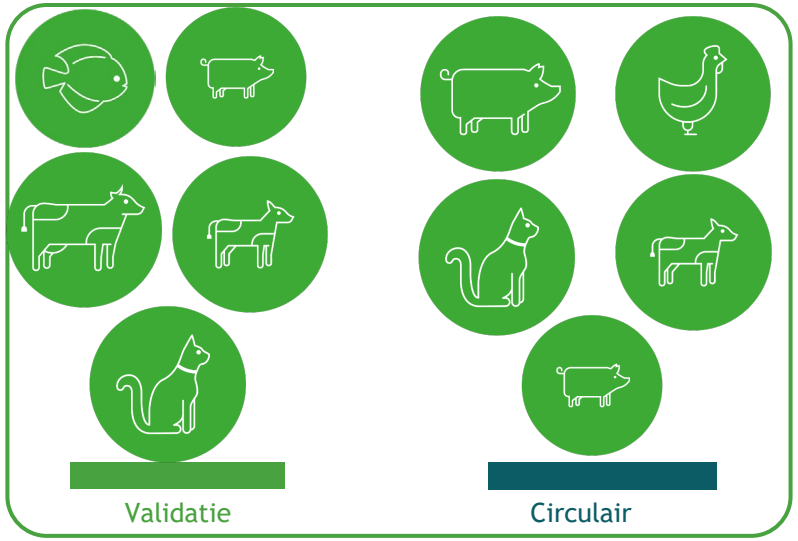
in **21** Countries

>400
leveranciers



Sales Per jaar

800 Miljoen kg

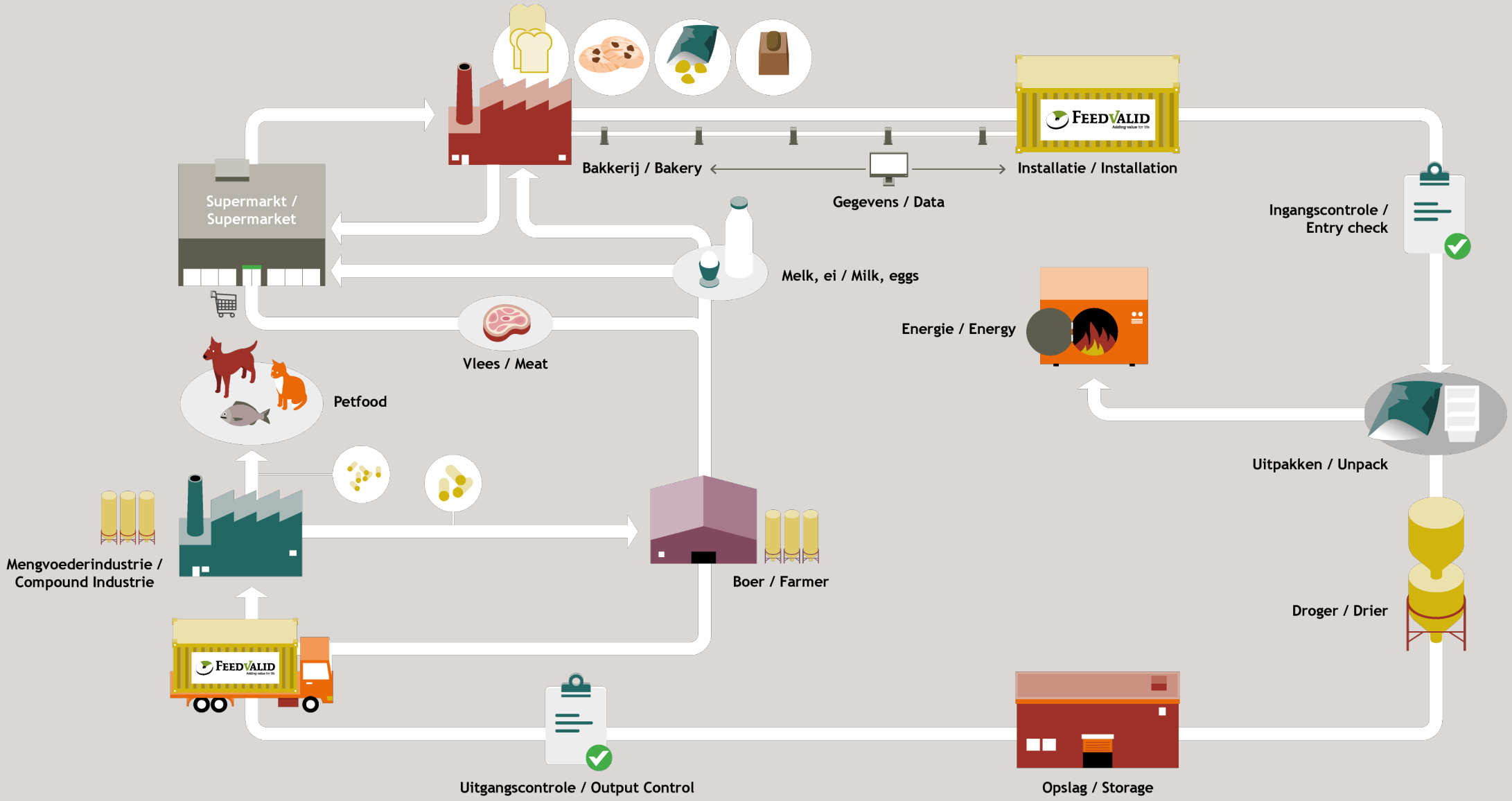


FeedValid

Sites FeedValid

- Own production sites
- External drying facilities
- External warehousing
- External dry processing

Circulair proces: rol van FeedValid in de keten



FEEDVALID
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5 PRIORITEITEN OP DUURZAAMHEID

DUURZAME GRONDSTOFFEN

Doel 2025

- Duurzaam inkopen.
- 85% van onze grondstoffen hebben een Europese herkomst.

CIRCULAIRE INGREDIËNTEN

Doel 2025

- Voortrekkersrol in de keten bij het verwaarden van reststromen.

DUURZAME OPERATIE

Doel 2025

- De eigen CO_2-voetafdruk in productie en logistiek met 20% verlagen.
- Safety first.

INNOVATIEVE VOEROPLOSSINGEN

Doel 2025

- Minimaal 3 nieuwe innovatieve voerconcepten die de CO_2-voetafdruk verminderen.

KETENBREDE SAMENWERKINGEN

Doel 2025

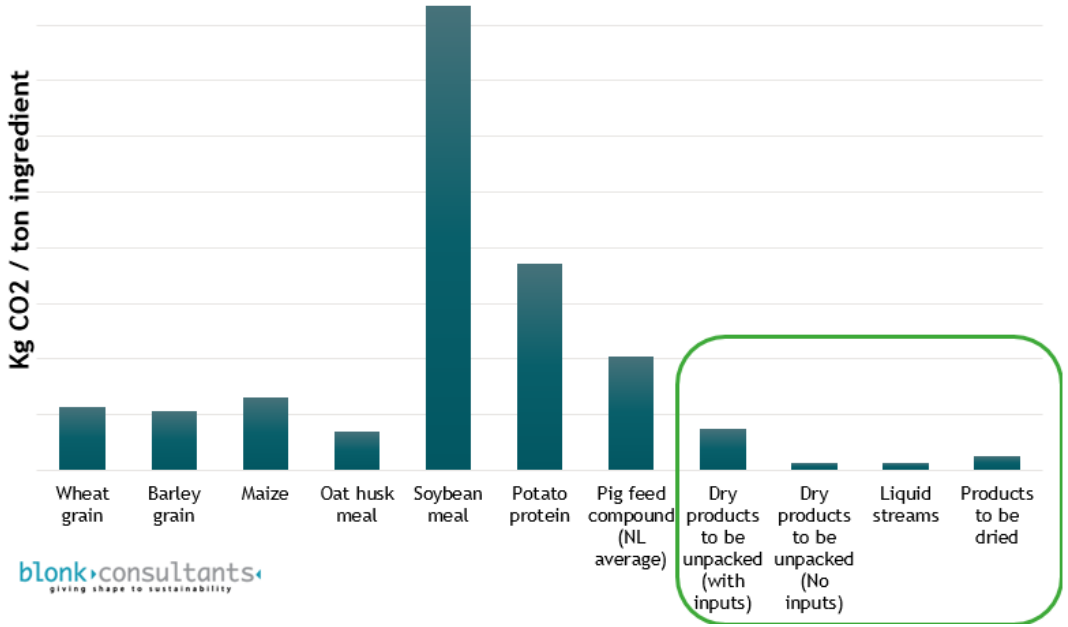
- Verdere verduurzaming van de keten door minimaal 3 nieuwe samenwerkings-verbanden met ketenpartners aan te gaan.

Duurzaamheid vandaag

Gevalideerde data

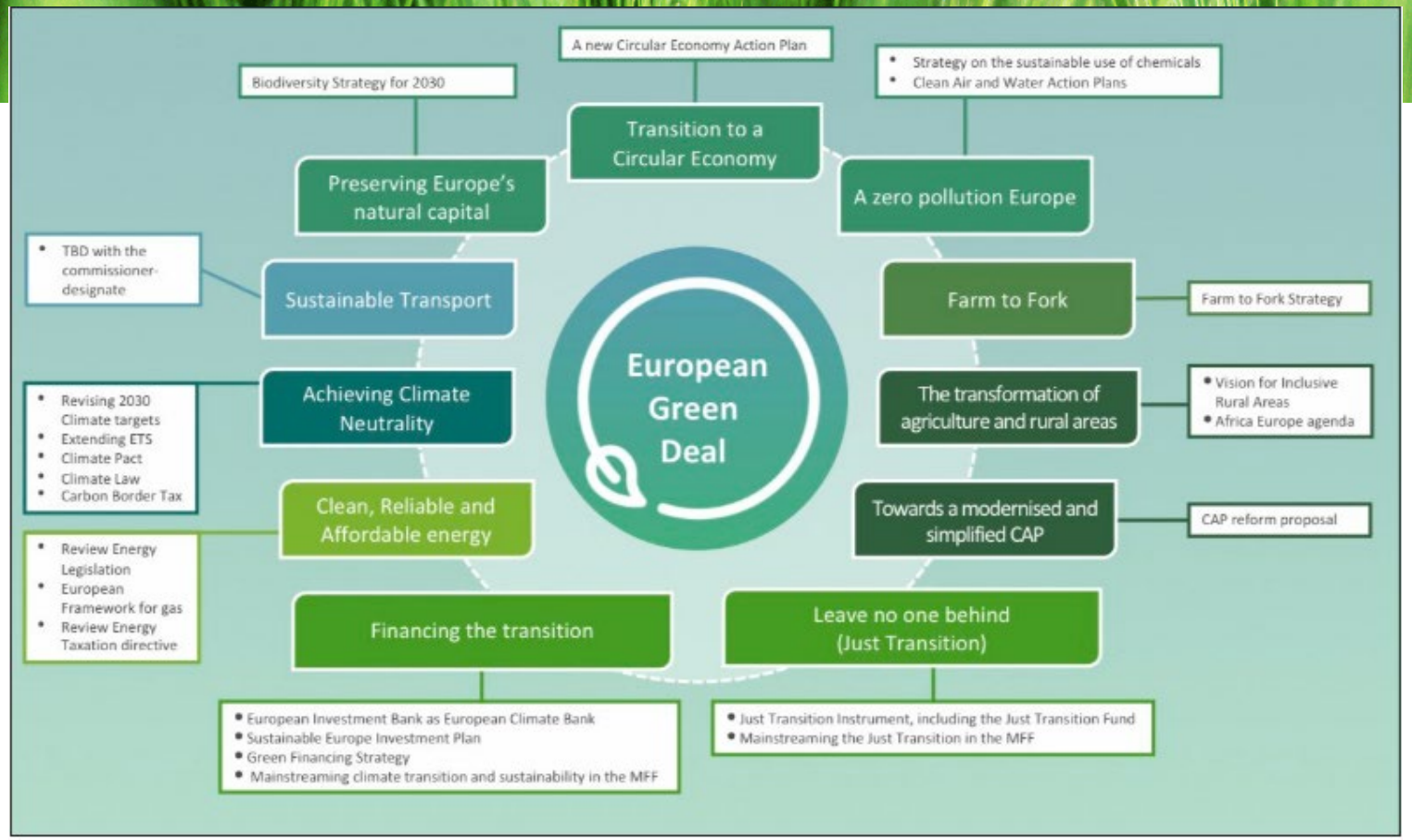
Sector data

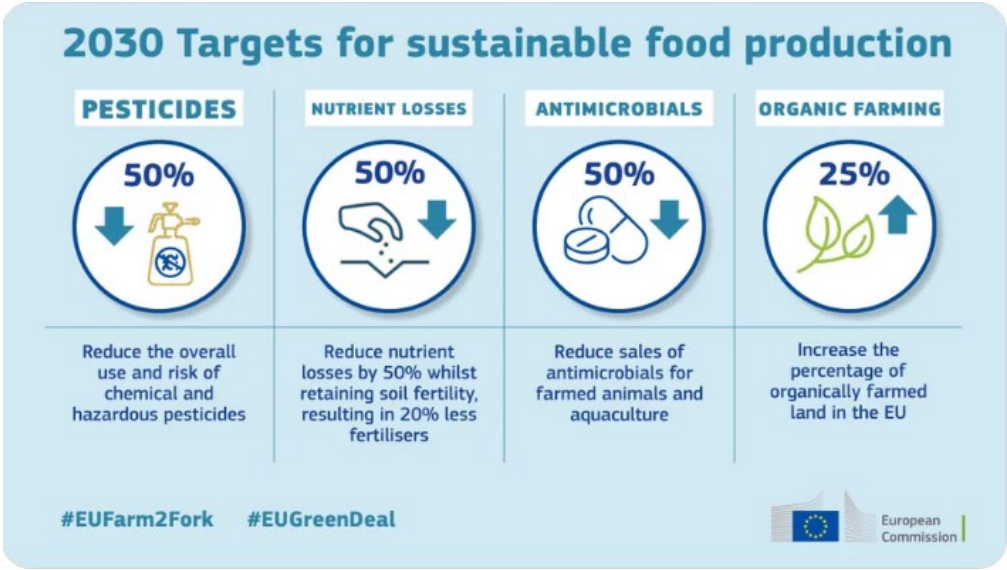
Gevalideerde bedrijfsdata alle eindproducten



Samenwerken in de keten

Duurzaamheid nabije toekomst





Ontwikkelingen op gebied van Europese wetgeving
Voorbeelden:

- 2024: EUDR (ontbossing/biodiversiteit): segregatie soja en palm producten
- 2024: CSRD reporting inclusief scope 3 (grondstoffen)

Duurzaamheid nabije toekomst

Scope 3

Albert Heijn start met het Beter voor Kip, Natuur & Boer-programma

Ook is het streven naar 100% bekende herkomst van alle voercomponenten en wordt er gewerkt aan verdere verduurzaming van eiwit in het kippenvoer. Daarnaast wordt een CO2-reductietraject gestart met als doel minimaal 15% reductie in 2030 ten opzichte van 2018. Door de overgang naar scharrelkip met 1 ster Beter Leven Keurmerk zullen bedrijven naar verwachting de uitstoot van fijnstof en ammoniak met zo'n 50% minder verminderen.

Ons doel is dat de varkensketen de komende 5 jaar 18,5% minder CO2 gaat uitstoten.

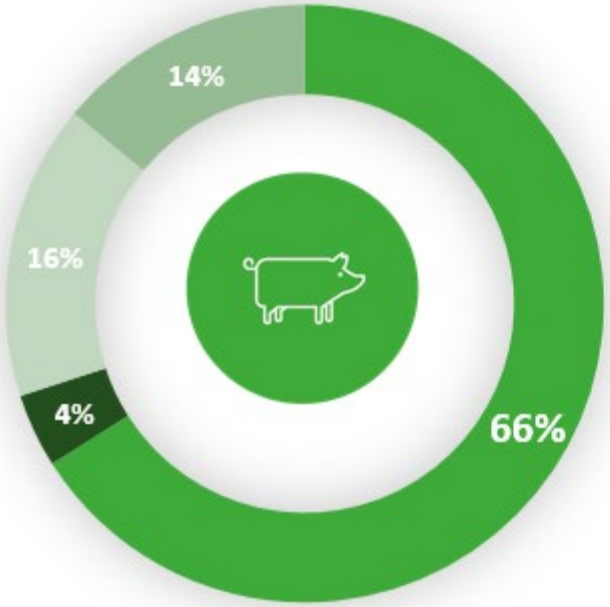
PLUS

varkensvoer. Wij hebben de intentie om de komende jaren concrete stappen te zetten in de beheersing van de CO_2 footprint van varkensvlees.

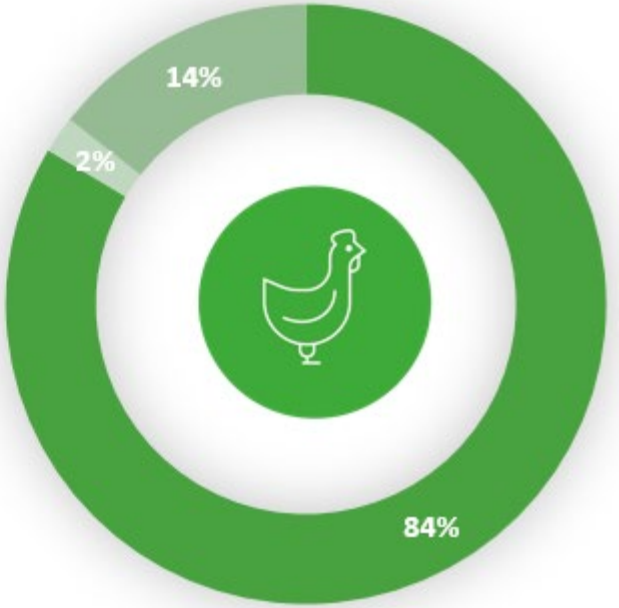
'Bis Ende 2030 wollen wir die absoluten Treibhausgasemissionen bei den vorgelagerten Lieferketten für Eigenmarken von REWE und PENNY in Deutschland im Vergleich zu 2019 um 15 Prozent senken.'

REWE

CO2 eq/kg meat



CO2 eq/kg egg



Duurzaamheid nabije toekomst

Vraag en aanbod

Vraag vanuit de markt

- Nevedi dashboard duurzaamheid; status 0- meting is uitgevoerd → KPI's
- Marktinitiatieven
- Vraag vanuit andere feed sectoren

Aanbod

- Momenteel (nog) import van circulaire producten uit omringende landen
- Leveranciers worden efficiënter, minder product
- Concurrentie vanuit energie: voorbeeld bijmengverplichting van biogas op gasnet

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Dank voor jullie aandacht

SAMEN TO INFINITY AND BEYOND...

KLAAR OM HET VERSCHIL TE MAKEN?