



Demonstrations Exchange



This project has received funding from the European Union's Horizon 2020 rural renaissance programme | Project No: 862590 under call H2020-RUR-2019-15



Environmental Sustainability DEMO



Presented by Ms. Karen Goossens (ILVO)



Demonstration WP6



Topic 6.1: Strategies to reduce enteric emissions from beef cattle

Innovation: **The use of fat-rich feed ingredients such as linseed**

Participants in this demonstration:

Riet De Smet (Researcher at ILVO)

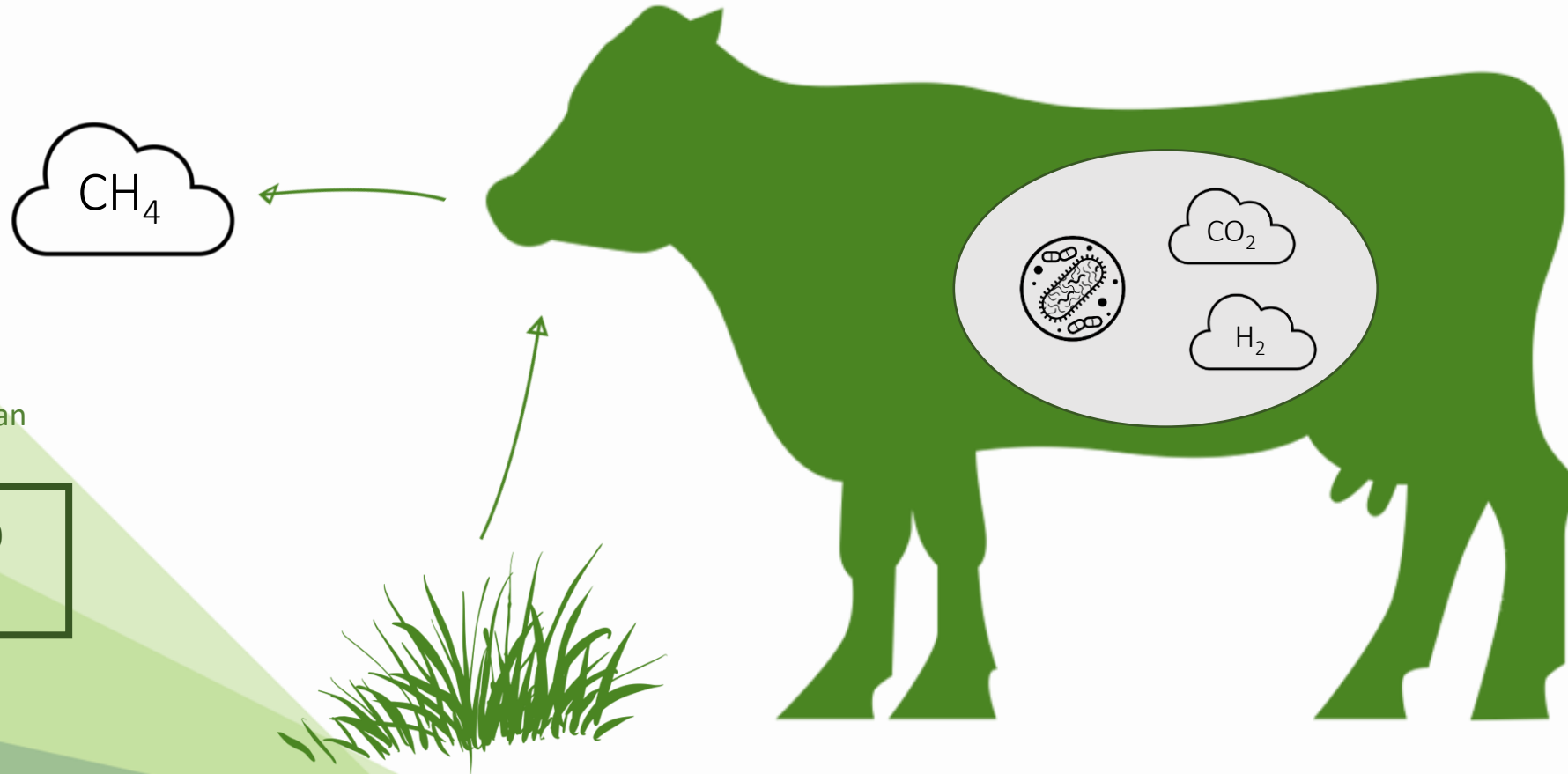
Elisabeth Vandekerckhove & Anne Vandelanoote (nutritionists at Arvesta)

Ines Theunis (Beef cattle farmer – Fines farm)



Demonstration Enteric emissions

The use of Linseed



Average for an
adult cow

200-500
g/day

Demonstration Enteric emissions

The use of Linseed



Feed management

ADDITIVES

- Tannins
- Chemical additives (nitrate)
- Synthetic additives (3-NOP)
- Essential oils
- Plant extracts

FEED INGREDIENTS

- Seaweed
- **Fat-rich feed ingredients**
- Whole plants rich in ...



Feed characteristics:

- Rich in fats: extruded linseed
- GMO-free
- European ingredients
- Rich in omega-3



Een voedergamma voor rundvee, met 100% Europese grondstoffen, rijk aan omega 3 - en zonder GGO

— Denk mee aan onze volgende generaties

Als diervoederspecialist heeft Dumoulin EUROCLIM ontwikkeld, een duurzaam voedergamma met het oog op het verminderen van de milieuoetadruk van de rundveehouderij. Onder verbruikers, coöperaties en distributieketens is er een groeiende vraag naar voedingsproducten met een zo gering mogelijke milieuafdruk.

Dankzij de grondstofsaaninstelling, voor 100% uit Europese bodem, draagt EUROCLIM op drie manieren bij aan de milieubescherming:

- Vermindering van de methaanuitstoot
- Vermindering van de koolstofuitstoot
- Vermindering van de concurrentie voor voedselbronnen

Het EUROCLIM voedergamma is duurzaam en van hoge kwaliteit: rijk aan omega 3 met een uitstekende voederconversie — EN ZONDER EXTRA KOSTEN VOOR DE VEEHOUDER.

Bijdrage aan de gezondheid van de verbruiker

Lijnzaad is een uitstekende bron van omega 3 essentiële vetzuren. Het voeren van EUROCLIM aan rundvee draagt zo bij aan het scheppen van melk- en vleesproducten die rijk zijn aan omega 3, met een omega 6 : omega 3 verhouding van minder dan 3:1.



Demonstration Enteric emissions

The use of Linseed



Suckler cow farm with about 200 Belgian Blue suckler cows
Bulls slaughtered at 8m (veal) or 18 m (beef)
Cows slaughtered after 3 calvings
Sales to local butchers and farm shops

CO²

Environmental
Sustainability



BOVINE

Demonstration for BovINE, in collaboration
with Aveve

Filmed at Fines, Glabbeek Belgium

**Hoe kunnen vetten enterische
emissies verlagen?**

**How can fats reduce enteric
emissions?**

BovINE

BEEF INNOVATION NETWORK EUROPE



EUROPE



**Special thanks to Arvesta – Dumoulin
Ines Theunis – Fines farm**

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Socio-Economic Resilience DEMO



Presented by Ms. Magda Aguiar Fontes (ULisboa)



2nd BovINE Transnational Meeting

SER DEMO: Future and Forward Contracts

2 December 2021

Magda Aguiar Fontes¹, Tomás Machado¹ and Pedro Rino Vieira²

²FMV- ULisboa | Portugal

²ISEG- ULisboa

CONTENTS

- 1. SER DEMO: Future and Forward Contracts**
- 2. Details and organization**
- 3. Main features**
- 4. Pros&Cons**



ID BovINE	DEMO	DATE	FORMAT	LOCAL
RI_T41_VS_FLI_200923	Calf vitality of newborn calves	25 th March	Presencial	JMPC
RI CODE: YR1 PT 4.1-13	Madigan-Squeeze technique	25 th March	Presencial	JMPC
RI CODE: YR1 PT 5.1-03	Precision feeding	21 st May	Presencial	ACBM Currais
T5.1 RI-05 Health monitoring	Health monitoring	11 th June	Presencial	AgriAngus
BovINE_SER5_FMV	Future and Forward Contracts	16th July	Zoom	Online
RI_6.1.1_Farm_management_YS	Young Stock	27 th July	Zoom	Online

Two Presentations:

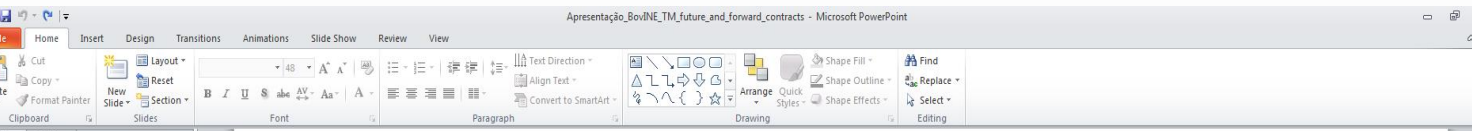
1. What if I knew the future?

Pedro Rino Vieira | ISEG-ULisboa

2. Future and Forward Contracts: practical examples

Tomás Machado | FMV-ULisboa





Contratos forward e contratos futuros:

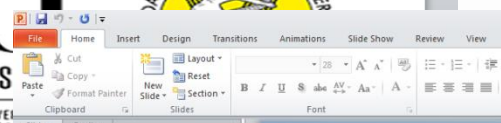
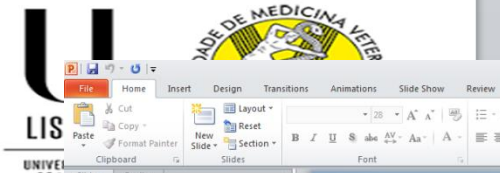
Exemplos práticos de utilização

Tomás da Cruz Machado

16 de Julho de 2021

AGENDA

- 1. Exemplos práticos de utilização
- 2. Principais fatores determinantes dos preços nos mercados
- 3. E se eu pudesse gerir o futuro?
- 4. Brasil
- 5. Estados Unidos da América



Slides Outline

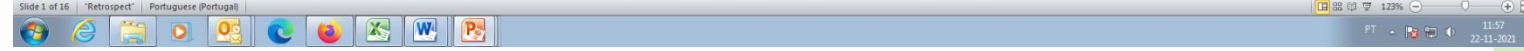
1. Default Section
2. E se eu conhecesse o futuro?
3. E se eu conhecesse o futuro?
4. É possível conhecer e progredir em momentos futuros?
5. É possível conhecer e progredir em momentos futuros?
6. Gestão de Risco



E se eu conhecesse o futuro?

Doctoral Program

Pedro Rino Vieira



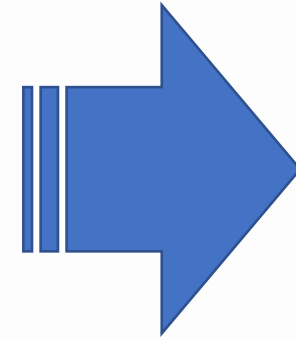
BovINE | 5th DEMO in Portugal | 16th July 2021

SER DEMO | Future and Forward Contracts

Participantes | ± 38 attendees

Objective | make farmers aware a risk management tool

Result | Fruitful discussion. Positive reaction from participants.

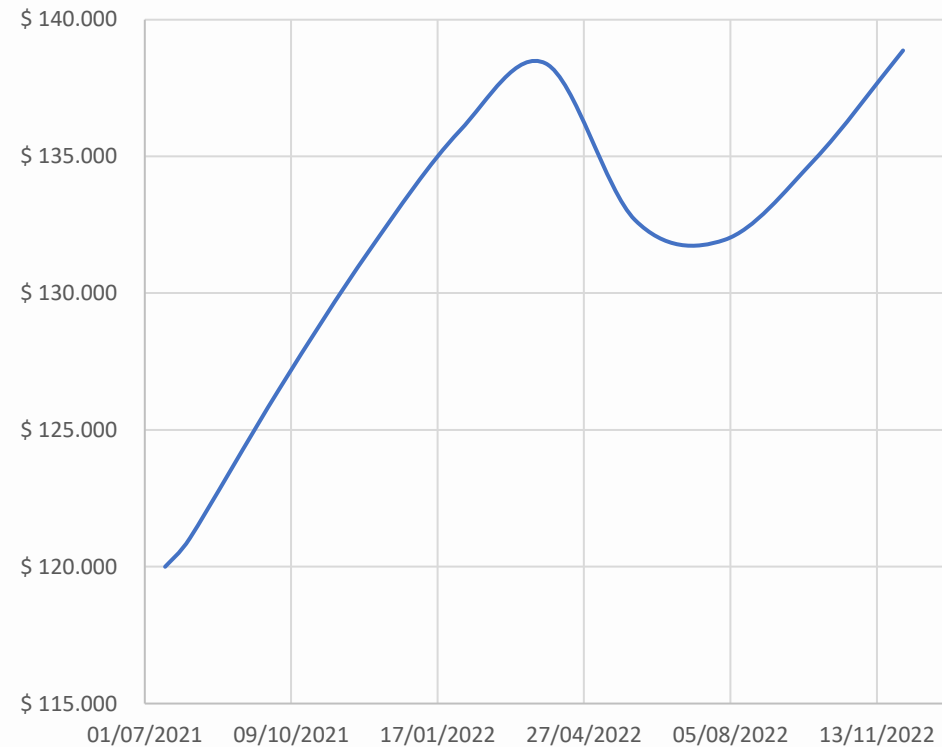


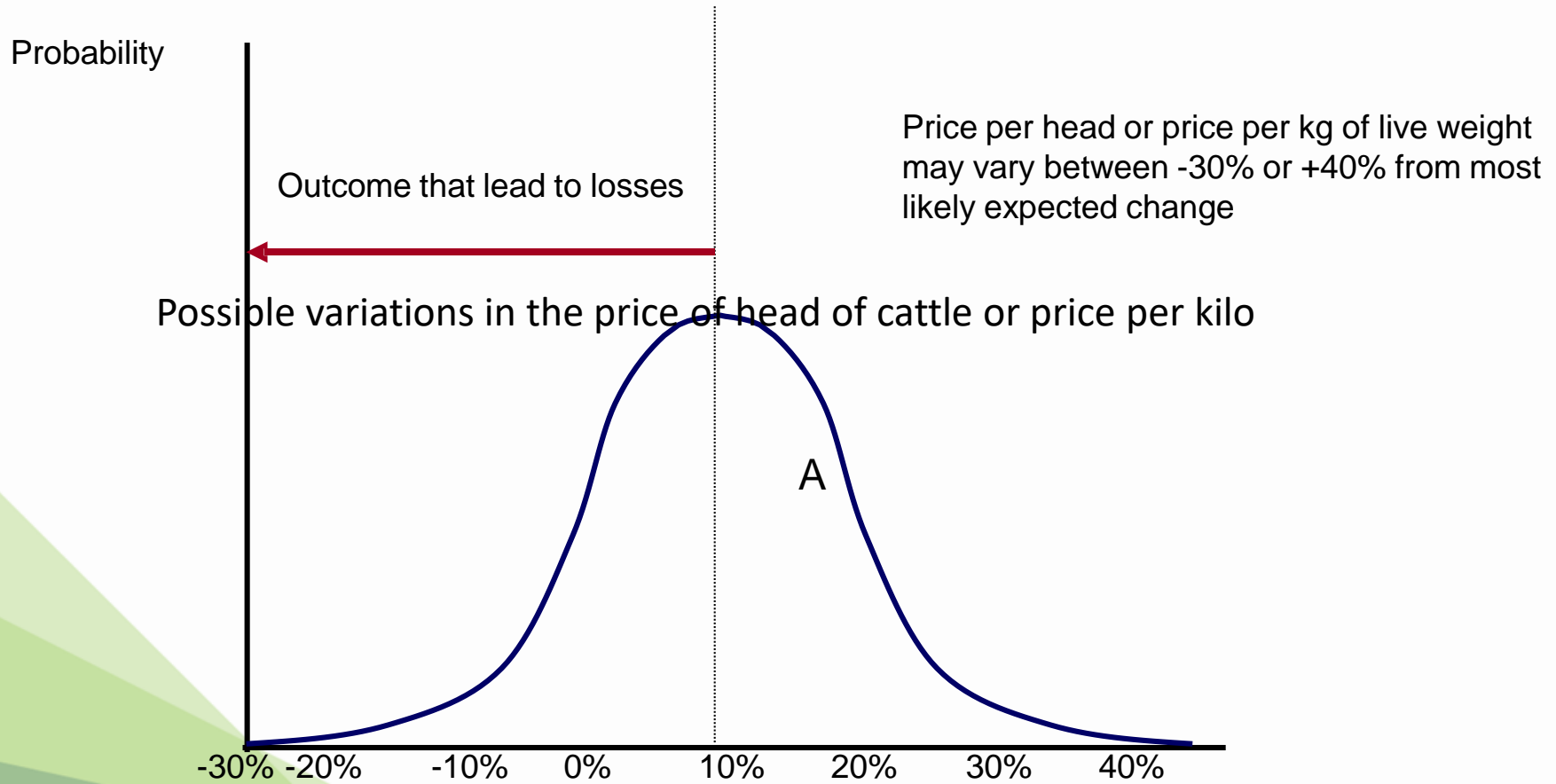
**Online
Covid restrictions**



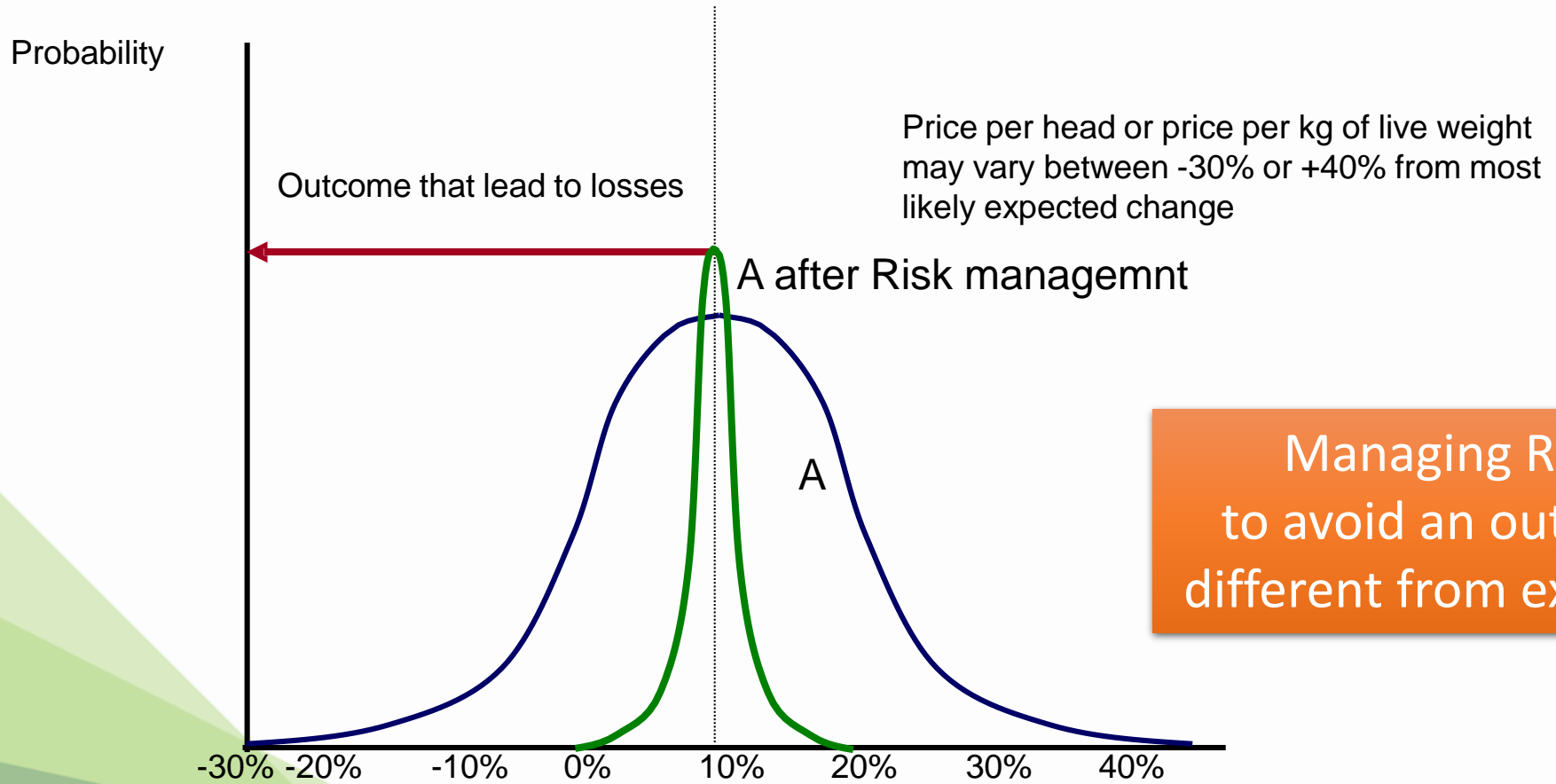
	Price	Type of Market
Today	\$120,000	Commodity Market
ago/21	\$121,050	Future Market
out/21	\$126,500	
dez/21	\$131,525	
fev/22	\$135,925	
abr/22	\$138,400	
jun/22	\$132,675	
ago/22	\$131,950	
out/22	\$134,850	
dez/22	\$138,875	

Spot Price and Future Prices for Live Cattle





Possible variations in price per head or price per live weight kg



Managing Risk:
to avoid an outcome
different from expected

Possible variations in price per head or price per live weight kg



Forward Contracts

- These are contracts where two parties, at a given moment in time, agree to do something at a future moment.

Parties establish

The identity and quantity of the item

What to do when the contract reaches the end

The price at which the transaction will occur at a future moment

Futures

- A futures contract is a standardized contract created and traded on a stock market in which two parties agree that one party (buyer) will buy the underlying asset at a later date at a price predetermined by both parties.
- The daily recognition of gains and losses and the existence of a clearing house make this product very safe in terms of default risk.

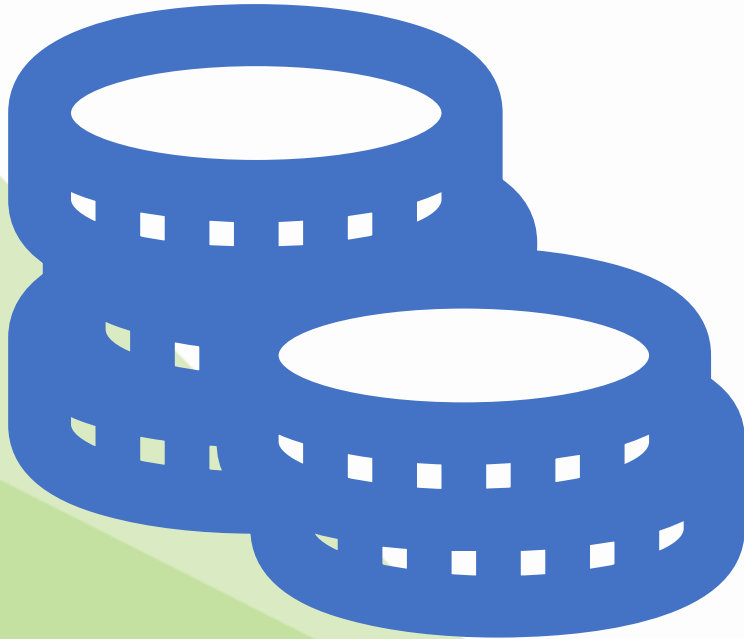
Highly regulated markets

Specified features for underlying asset: contract size, delivery date, allowable locations

Futures Exchange offers physical and/or electronic trading conditions, as well as the necessary liquidity through market makers.

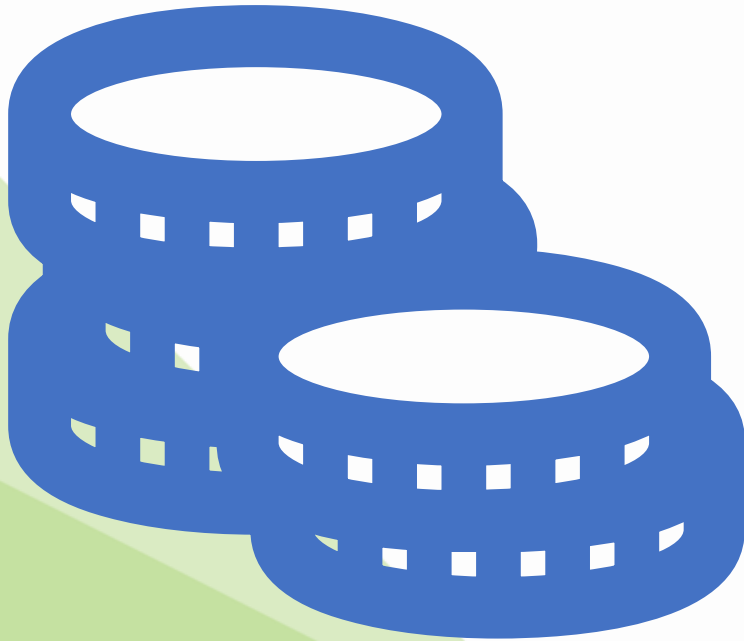
Clearinghouses update daily gains or losses

Example



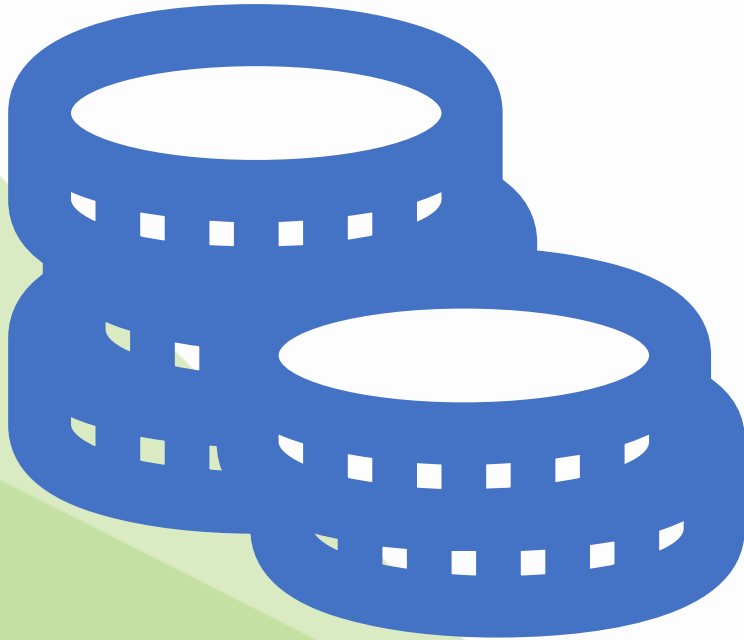
- An investor gets in as a buyer in a contract to buy 20 heads of cattle in February 2022 at a price of 126,5\$
 - Contract dimension: 20 heads
 - Future price: 126,5\$
 - Total cost = $20 \times 126,5 = 2530\$$

Example: Forward



- Spot price in October: 130\$
- On the day of transaction
 - Buys 20 heads at 130\$ in a total of 2600\$
 - Receives from the counterpart $20 \times (130 - 126,5) = 70$$
 - Total cost = 2600 - 70$ = 2530$$

Example: Futures



- Spot Price in October: 130\$
 - On the day of transaction
 - Buy 20 heads at 130\$ in a total of 2600\$
 - 70\$ being transferred on a daily basis
 - Initial margin of 50% of the contract value, that is, 1300\$
 - Maintenance Margin of 40% of the contract value, that is, 1040\$
- But in the end
- Total Cost = 2600\$ – 70\$ = 2530\$

Day	Future Price (\$)	Spot Price (\$)	Daily settlement (\$)	Accumulated gain (\$)	Net Margin (\$)	Margin call (\$)
1	126,5				1300	
1		125	-30	-30	1270	
2		120	-100	-100	1170	
.....		
6		110	-200	-200	970	330
7		115	100	100	1400	
8		120	100	100	1500	
.....		
16		130	200	200	1700	

At the contract expiring date the trader can calculate the total value of the contract. It was required by the broker an **initial net margin of 1300\$** and a **margin call of 330\$**, a total of $1300 + 330 = 1630$$. But, at the expiring date, the total net margin amounts to **1700\$**, hence a profit of **70 \$** → **less risk** because of daily basis transfers.

Benefits



- Protect production from risks associated with market price volatility
- Reallocation of risk associated with production
- Improvement in production planning based on the behaviour of the futures markets
- Arbitrary negotiation of contract terms (associated to forward contracts)
- The possibility of managing economic losses with greater criteria in critical times

Obstacles



- Find a partner/financial institution that mediates this type of contracts
- Lack of resources and means to follow the futures markets (lack of time)
- Difficulty in understanding charts or accessing information describing the reality of the markets
- Not enough production scale to justify the application of future contracts



- Use of forward contracts is a reality among producers;
- There is potential for the use of futures contracts.
- Having a financial institution to mediate futures markets is a necessary condition for such contracts.
- Investing in the futures markets requires a calculating mindset capable of perceiving the dynamics influencing on a daily basis the spot markets;

Contracting futures can be like insuring a car: If we have an accident the insurance covers the cost, but if we do not have an accident, we don't consider the insurance prize as wasted money



Aspects of the RI seen as beneficial to beef farmers?

1. Strong regulation and organization of the market, making the risk of default by the counterpart negligible
2. A type of contract very effective and safe in risk management

Main obstacles predicted in implementing this RI in Portugal?

1. Need to find an experienced financial intermediary to help operationalize this type of hedging instrument
2. Provide training to farmers so that they understand the specificities of this type of contracts and know how to access information about these products and markets

Additional costs/savings predicted by attendees if implementing this RI?

1. This is a risk management tool that will fix a given price. Hence when compared with the spot price, at the date of the deal, farmers may pay/receive less or more than the current market price
2. Cost of managing these contracts

Recommended by attendees?

1. Positive reaction of most participants.
2. Willingness to recommend risk management tool
3. Some concern shown related to the mediation of these contracts by financial institutions

MUITO OBRIGADA!

magdaaguiar@fmv.ulisboa.pt

Animal Health & Welfare DEMO



Presented by Mr. Frank-Dieter Zerbe (FLI)



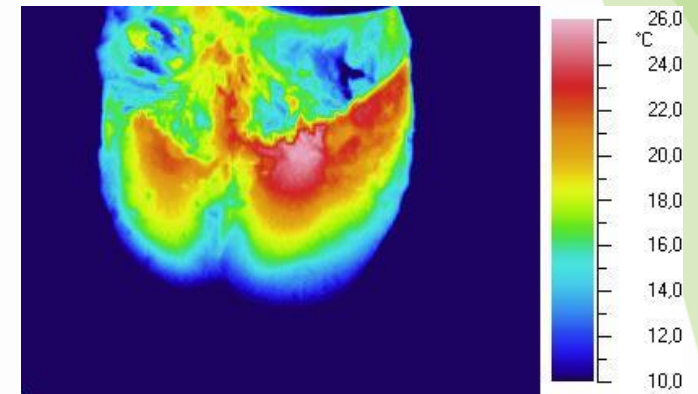
Demonstration: Infrared thermography for diagnosis of lameness

Demonstration of WP 4 – TWG Animal Health and Welfare

Topic 4.2: Lameness in beef cattle

Introduction

- Lameness is a significant problem that affects the overall productivity and profitability of cattle operations.
- Several studies have suggested that increased foot temperature, detected using infrared thermography, is a potentially useful technique for identifying lameness.
 - It is a non invasive indicator / a non-contact detecting technology obtaining reliable data without avoiding undue stress reactions
 - it may even be used to detect subclinical pathological signs and inflammation before the disease becomes evident
- So far mainly used in dairy – useful for fattening cattle, too?



DTW 2008 (15)

Other projects on this topic

- **KLAUWGEZONDHEID**

- www.koesensor.be/klauwgezondheid/
- Looking for innovative tools that will help during hoof care to detect claw lesions at an early stage
 - One of these tools is the use of a thermal camera
 - an algorithm is being developed to interpret the images / temperatures seen.

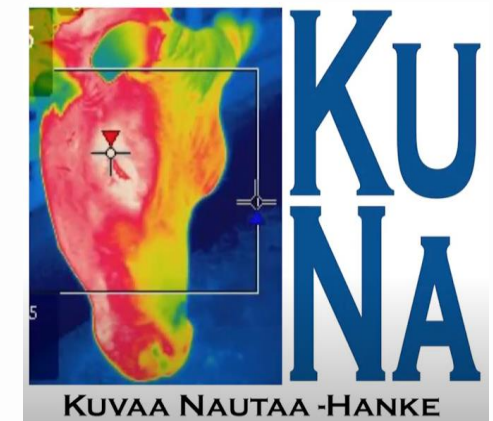
Belgium



- **Kuvaa Nautaa**

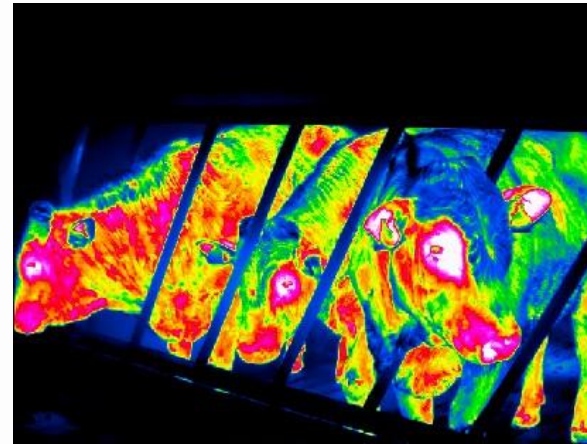
- www.kuna.savonia.fi/in-english
- Objective was to develop a comprehensive information package on the use of thermography in cattle health care.
 - designed for farmers, veterinarians, hoof trimmers and agricultural experts
 - **RESULT:** developed short instructions for using thermal imaging for monitoring hoof health and detecting milk fever

Finland



Demonstration on commercial beef farms in Germany

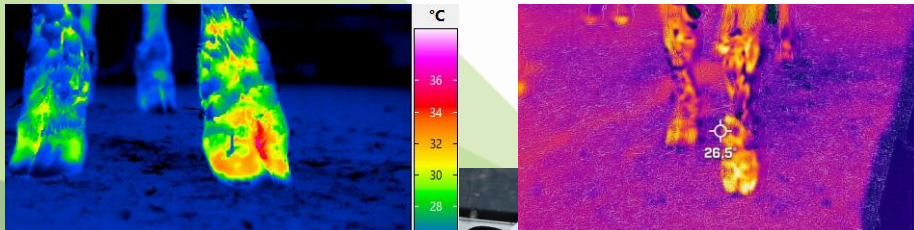
Taking IR images of lame bulls (separated)



Taking IR images of bulls in the stable



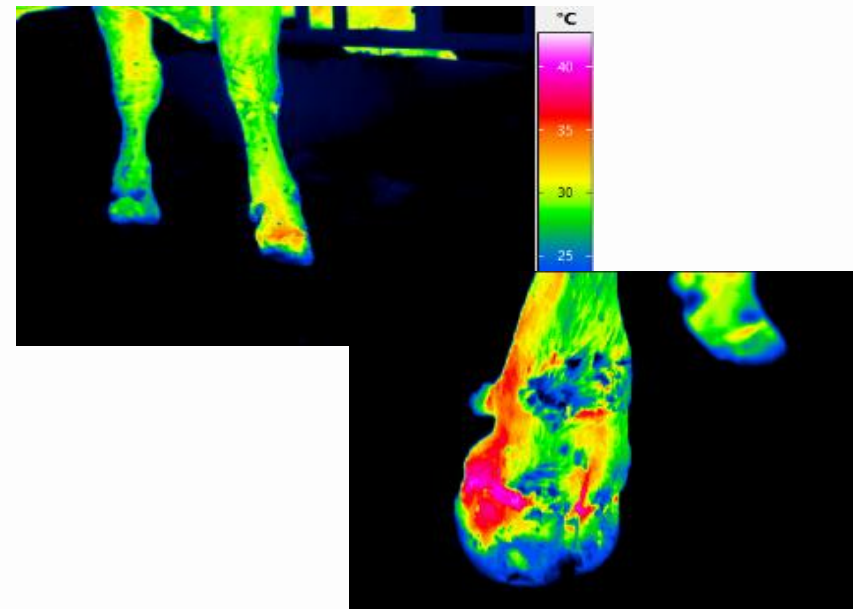
Comparing different camera systems



Filming young bulls during driving

Results

- With infrared thermography it is possible
 - to diagnose lameness early
 - to clarify suspicions
- Problem
 - short distance to the animal
- Best conditions
 - Animal on flat floor (not on straw)
 - max. 2 m distance to the animal
 - free field of view
 - Fixation of the animal might be necessary
 - Use second leg as comparative object



Belgium: a video demonstration together with claw care project



On a farm with beef and dairy



Information about general claw care



Information about the claw care project



Thermal imaging

- for detection of problems at an early stage
- For the decision to cut deeper during claw care



An app is being developed



Thermal camera – a universally applicable tool on the farm

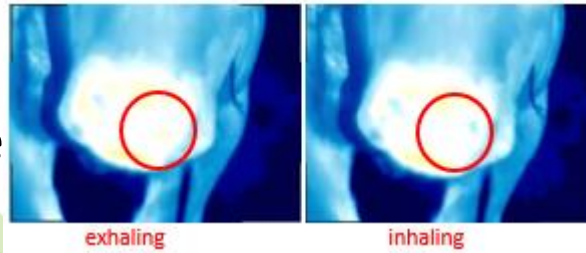
Hint from farmer in Germany:

- Use Smartphone version to
 - check post-heating of silage
 - check filling level of biogas plant



From literature:

- Use for respiration rate of calves



Factsheets from Kuvaa Nautaa project:

- Use for early detection of milk fever
- Use for monitoring hoof health



Production Efficiency & Meat Quality DEMO



Presented by José Pais (ACBM / Promert) & Marcin Adamczyk (PBA)



Automated individual data for feed efficiency improvement in beef cattle



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Automated individual data for feed efficiency improvement in beef cattle



- **Mertolenga Performance Testing Center**
- **Currais e Simalhas farm, Évora, Portugal**
- **21th of May 2021**

BovINE channel

<https://www.youtube.com/watch?v=qBAzjupwJLI>



Automated individual data for feed efficiency improvement in beef cattle



- 9 Individual trough (RIC Hokofarm)– 3 cattle pens
- Each trough has a scale
- Total daily feed intake per animal
- Mertolenga, Aberdeen-Angus and Limousine



Automated individual data for feed efficiency improvement in beef cattle



- Troughs are filled daily
- EID with collar
- Animals weight every three weeks
- Use of data to calculate RFI
- RFI identifies more efficient animals



VR201109.DAT - Bloco de notas

Ficheiro Editar Formatar Ver Ajuda

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Automated individual data for feed efficiency improvement in beef cattle



What does residual Feed Intake (RFI) mean?

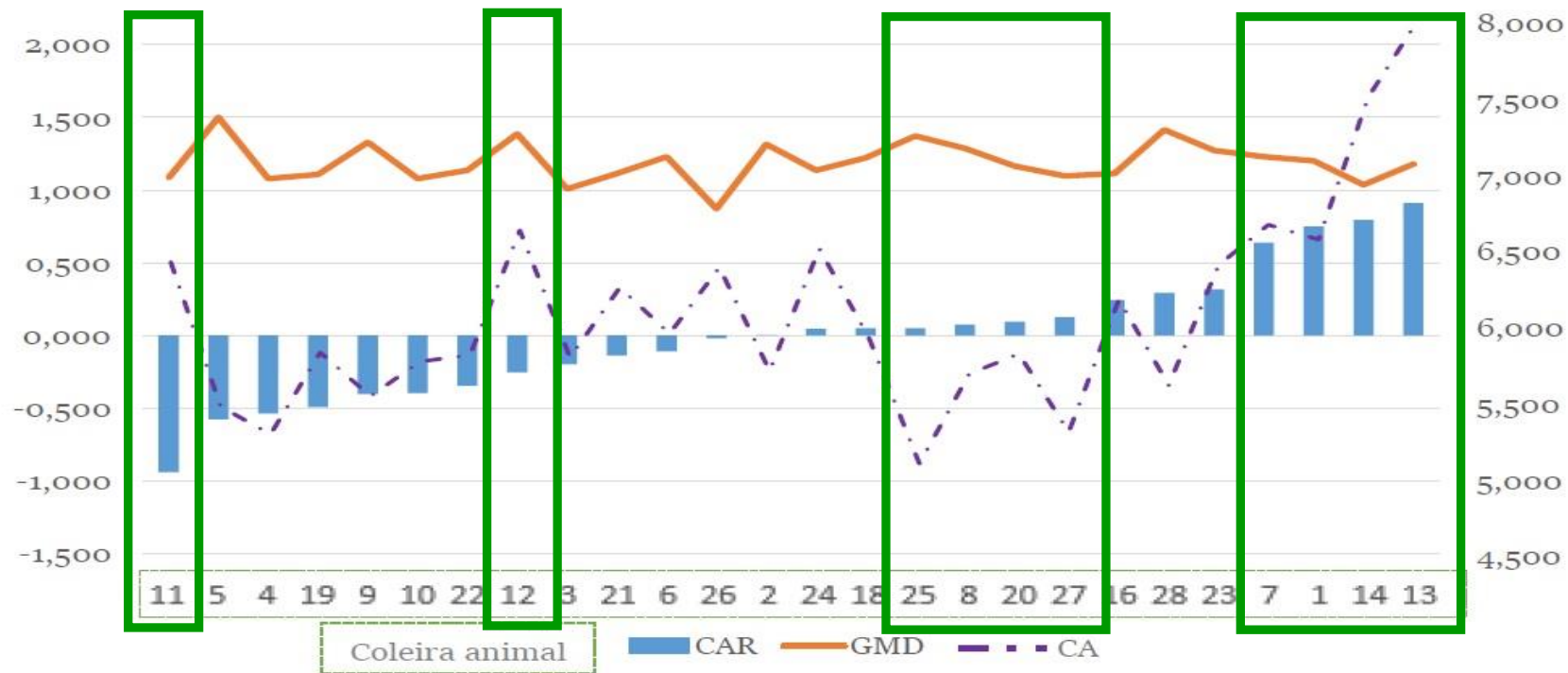
- Two similar animals (same ADG and weight)
- Different RFI
- Most efficient has lower feed intake (negative value)
- High economic results and lower emissions



Automated individual data for feed efficiency improvement in beef cattle



Gráfico 2 - Distribuição do consumo alimentar residual (CAR) de cada novilho em teste distribuídos do mais eficiente ao menos eficiente e os respetivos ganhos médio diário em peso (GMD) e a conversão alimentar (CA).



Automated individual data for feed efficiency improvement in beef cattle



THREE LESSONS

- The differences in feed intake values between animals can be greater than it was expected.
- A young bull with good ADG may not be the most efficient.
- The differences in RFI individual values can be one important factor in production costs and environmental impact.

<http://www.bovine-eu.net/>

<https://hub.bovine-eu.net/login>



Automated individual data for feed efficiency improvement in beef cattle in Poland



- **Fattening bulls farm in Mogowo**
- **Prof. Marcin Gołębiewski (SGGW)**
- **27th of May 2021**



Automated individual data for feed efficiency improvement in beef cattle in Poland



Observed benefits

- Less need of buying or using self-produced fodder for animal because of precision feeding according to feeding plan
- Reduction of environmental impact by less production of manure
- Reduction of feeding costs

Observed obstacle

- Too expensive to implement in Polish beef farms



Automated individual data for feed efficiency improvement in beef cattle in Poland



FARMER FEEDBACK

I recommend this solution. Precision feeding system with individual feeding plan gives really good results in daily weight gain per animal. Additionally this solution gives good results in reducing impact on environment by reducing manure production.

<http://www.bovine-eu.net/>

<https://hub.bovine-eu.net/login>



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