

University of Wisconsin Dairy Management

Comparando Sistemáticamente el Ingreso Sobre los Costos de Alimentación en la Empresa Lechera

Victor E. Cabrera

Extension Dairy Specialist and Assistant Professor
Department of Dairy Science

Introducción

- Qué es Comparación Sistemática?
- Proceso continuo y sistemático de comparar variables importantes
 - Industria u otras fincas
 - Misma finca



Introducción

→ Por qué Comparación Sistemática?

→ Aprender fortalezas y debilidades

→ Propia finca

→ Otras fincas



Introducción

→ Por qué Comparación Sistemática?

→ Construir planes de mejora operacionales

→ Lograr mejor desempeño siguiendo mejores prácticas



PDCA (Modified Deming) Cycle

Introducción

→ Por qué Ingreso Sobre Costos de Alimentos?



→ Gran mayoría de ingresos (>90%) y costos (>40%) contenidos en los Ingresos Sobre Costos de Alimentos

Introducción

→ Por qué Ingreso sobre costos de alimentos?



Dairy Farm
Management

→ Evalúa indirectamente salud, reproducción, descarte, etc. de los animales productivos

Introducción

→ Por qué Ingreso sobre costos de alimentos?



→ Decisiones de manejo afectan directamente y rápidamente al Ingreso Sobre los Costos de Alimentos

Introducción

→ Por qué Ingreso sobre costos de alimentos?



→ Responde grandemente a los cambios en condiciones de mercado (precios)

Introducción

→ Características de los Ingresos Sobre los Costos de Alimentos

→ Método probado para evaluar rentabilidad de una lechería

→ Rentable

→ No rentable

→ Necesita mejoras

→ Tiene oportunidades de mejora



Introducción

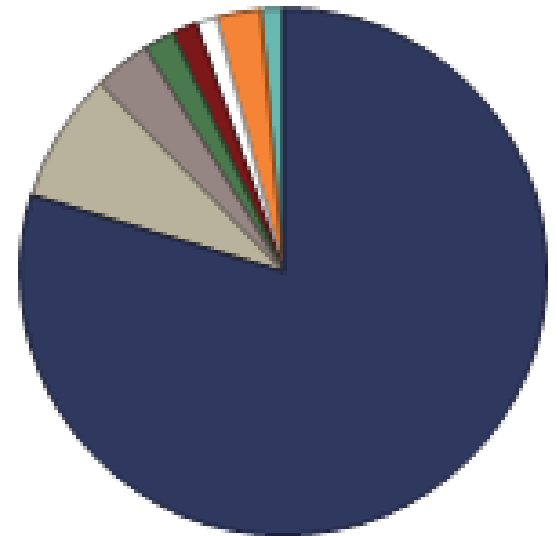
- Características de los Ingresos Sobre los Costos de Alimentos
- Decisiones INFORMADAS de
 - Compra de alimentos
 - Ajuste de raciones
 - Manejo de riesgo de precios
 - Uso de aditivos «mágicos»
 - ...



Introducción

→ Otros ingresos y gastos

→ Menos variables y pueden ser asumidos fijos



Introducción

→ Operar al menos al «punto de equilibrio» logrado con un Ingreso Sobre Costos de Alimentación mínimo



Introducción

Ingreso Sobre los Costos de Alimentos,
ISCA = Valor Leche – Costo Alimentos

(Concepto muy simple)

Pero...quien sabe su ISCA realmente?

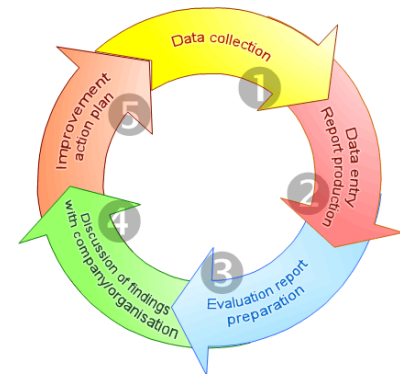
Por grupos de vacas?

Por estaciones del año?

H
OW
DOY
USH
AREKN
OWLEDG
E ? E F P T O

Introducción

- Quién mantiene un enfoque sistemático de coleccionar y comparar Ingresos Sobre Costos de Alimentación?
- Quién realiza comparaciones de Ingresos Sobre Costos de Alimentación permanentemente y consistentemente?



Comparación Sistemática



Sistemática Comparación

→ Crea una cuenta!

DAIRY EXTENSION FEED COST EVALUATOR

UWEX-DAIRY MANAGEMENT

Farms | Ingredients | Rations | Summary | Analysis

DAIRY EXTENSION FEED COST EVALUATOR

UWEX-Dairy Management

Username

Password

Login

Create New Account

[Change Password](#)

[Forgot Password](#)

©Dairy Management

IOFC

Income Over Feed Supplement Cost Database is a novel Application to allow agents/farm owners to enter farm details and perform analysis on individual as well as multiple farms depending on herd size, month and year

UWEX

DairyMGT Home

Comparación Sistemática

→ Define lecherías!

FARMS
View & Edit Farms

Farm Name

| |
|--------|
| Farm1 |
| Farm2 |
| Farm3 |
| Farm4 |
| Farm5 |
| Farm6 |
| Farm7 |
| Farm8 |
| Farm9 |
| Farm10 |

Farm Name

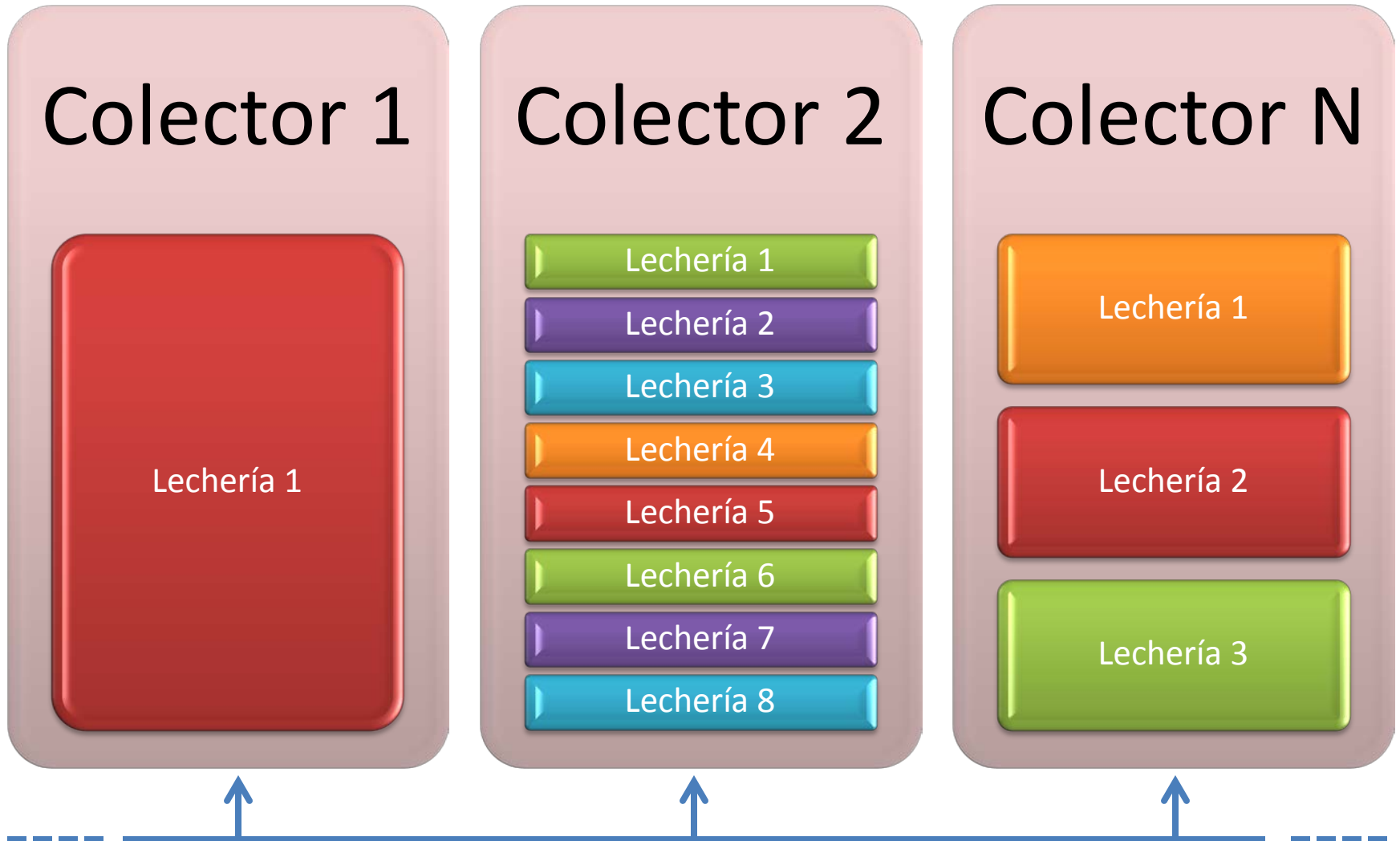
FARMS
(View existing farms, add new farms, and delete farms)

IOFC DATABASE

Welcome to IOFC Database. These are the suggested steps for using the system.

1. In this page, you can add or delete farms. To add a farm enter a farm name and select the county where the farm is located and click "Add Farms". To delete a farm, delete the farm name and click save.
2. Once the farms are defined, you can start defining the "Ingredients" on the ingredients page, their DM composition, and prices used on each particular farm.
3. Once the ingredients are entered, you can define the rations for different group of cows in the "Ration" page.
4. Once you have defined all ingredients and rations, you can see the IOFC summary at the

Comparación Sistemática



Comparación Sistemática

→ Define ingredientes!

INGREDIENTS

Add/Edit Ingredients in the Farm

Farm Name
Farm10

Month
June 2011

Pricing Resources

- Corn Silage Pricing: UW-Forage Resources [Download](#)
- Corn & Soybean Meal: Understanding Dairy Markets [Futures](#)
- By-products: Missouri Extension [Link](#)
- General prices: Feedstuffs [Link](#)

Forrajes

| Forage | %DM | Price As Fed \$/ton | Price DM \$/ton |
|------------------|-----|---------------------|-----------------|
| Corn Silage-Cosi | 30 | 35 | |
| Hay Forage | 85 | 145 | |
| Hay Forage- | 90 | 145 | |
| | | | |
| | | | |

Comparación Sistemática

→ Define ingredientes!

INGREDIENTS
Add/Edit Ingredients in the Farm

Farm Name: Month:

| Energy Protein Supplements | %DM | Price As Fed \$/ton | Price As Fed \$/ton | Price DM \$/ton |
|----------------------------|------|---------------------|---------------------|-----------------|
| Corn-CGG | 85 | 144 | | 169.41 |
| SoybeanMeal SBM | | | | |
| Dry corn | 85 | 207 | 207 | |
| Prefresh conc | 90.2 | 145.8 | 145.8 | |
| Lactating Protein | 90.9 | 260 | 260 | |
| TMR Weighback | 50 | 35 | 35 | |
| Energy Booster | 98 | 1450 | 1450 | |
| Bran Syrup | 60 | 41.6 | 41.6 | |

Concentrados

**Contenido
Materia
Seca**

**Precio de
Alimento**

**Minerales,
Vitaminas,
Subproductos**

| Min-Vit Supplement & ByProduct | %DM | \$/cwt |
|--------------------------------|------|--------|
| Calcium Carbonate | | |
| Urea | 99 | 28 |
| DC Mineral | 98 | 58.2 |
| Lactating Mineral | 95.5 | 41.5 |

Comparación Sistemática

→ Define las raciones!

Farm Name: Superior Farm 2 Month: June 2011

| Ration Group Information | Name | Number | Milking |
|--------------------------|-------------|--------|-------------------------------------|
| Ration Group 1 | Lactation 1 | 459 | <input checked="" type="checkbox"/> |
| Ration Group 2 | Lactation 2 | 715 | <input checked="" type="checkbox"/> |
| Ration Group 3 | Postfresh | 112 | <input checked="" type="checkbox"/> |
| Ration Group 4 | Dry | 156 | <input type="checkbox"/> |
| Ration Group 5 | Prefresh | 91 | <input type="checkbox"/> |
| Ration Group 6 | Ration 6 | 0 | <input type="checkbox"/> |
| Ration Group 7 | Ration 7 | 0 | <input type="checkbox"/> |
| Ration Group 8 | Ration 8 | 0 | <input type="checkbox"/> |
| Ration Group 9 | Ration 9 | 0 | <input type="checkbox"/> |

**Grupos de
Animales
Alimentados
Diferentemente**

Load Records from the Previous Month

Comparación Sistemática

→ Define las raciones!

Cantidades de alimentos
Como usados o en base de
Materia Seca

Alimentos fueron
Definidos anteriormente

Usuario distingue
Alimentos comprados y
Alimentos producidos

Farm3 Month
June 2011

Forage → Ration Group (lb/cow/d) As Fed

| | P | Ration1 | Ration2 | Ration3 | Ration4 | Ration5 | Ration6 | Ration7 | Ration8 | Ration9 |
|-------------------|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Hay | <input type="checkbox"/> | | 4 | 4.259 | 1.6 | 1.48 | 1.48 | | | |
| Wheat Straw | <input type="checkbox"/> | 3.7 | 1 | 0.48 | 0.41 | 0.37 | 0.37 | | | |
| Wheat Straw Purch | <input checked="" type="checkbox"/> | 3.7 | 1 | 0.48 | 0.41 | 0.37 | 0.37 | | | |
| Hay Forage | <input type="checkbox"/> | 15.76 | 4.89 | 6.522 | 18.36 | 17.6 | 17.6 | | | |
| Corn Silage-Cosi | <input type="checkbox"/> | 30.33 | 30.33 | 30.33 | 57.2 | 48.42 | 48.42 | | | |

Energy/Protein Supplements Ration Group (lb/cow/d) As Fed

| | P | Ration1 | Ration2 | Ration3 | Ration4 | Ration5 | Ration6 | Ration7 | Ration8 | Ration9 |
|-----------------|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Corn-CGG | <input type="checkbox"/> | | | | 6.33 | 5.84 | 5.84 | | | |
| Wet Gluten | <input checked="" type="checkbox"/> | 2.94 | | 6.38 | 10.82 | 9.99 | 9.99 | | | |
| Protein | <input checked="" type="checkbox"/> | | | | 13.68 | 12.6 | 12.6 | | | |
| Permeate | <input checked="" type="checkbox"/> | | | 4 | 9 | 7.75 | 7.75 | | | |
| Post Supplement | <input checked="" type="checkbox"/> | | | 15.6 | | | | | | |
| Closeup mix | <input checked="" type="checkbox"/> | | 7.3 | | | | | | | |
| SoybeanMeal SBM | <input type="checkbox"/> | | | | | | | | | |

Min-Vit & Additive Supplements Ration Group (lb/cow/d)

| | Ration1 | Ration2 | Ration3 | Ration4 | Ration5 | Ration6 | Ration7 | Ration8 | Ration9 |
|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Calcium Carbonate | | | | | | | | | |
| Dry cow Mineral | 0.6 | | | | | | | | |
| lactating mineral | | | 0.75 | 0.69 | 0.69 | | | | |

Comparación Sistemática

→ Define el valor de la leche!

Month

June 2011

Farm Information

| | |
|--|--------------------|
| Farm Name | Farm10 |
| Person Reporting | |
| Farm Owner/UserName | Cabrera |
| Last Updated | 2011-06-01 |
| Number of Cows | 126 <i>Milking</i> |
| | 12 <i>Dry</i> |
| Milk Bulk Tank Production(lb/cow/day) | 68 |
| Milk ButterFat(%) | 3.6 |
| Milk Protein(%) | 3.1 |
| Milk Price(\$/cwt) | 14.3 |
| Milk Revenue (\$/cow/day) | 9.72 |

Update

Notes

Comparación Sistemática

→ Estudia los resultados por grupo!

Ingesta de materia seca
Y
Costo de alimentos por
Grupo de animal
Grupo de ingredientes
Procedencia

| | | Farm3 | | | | Month | | | | June 2011 | | | |
|-------------------------------|--|-----------|------|------------|------|-----------|------|------------|------|-----------|------|------------|------|
| | | Dry | | Dry | | CU | | Dry | | Fresh | | Lact | |
| | | Purchased | | Home-Grown | | Purchased | | Home-Grown | | Purchased | | Home-Grown | |
| | | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost |
| Forage | | 3.29 | 0.19 | 21.46 | 1.28 | 0.89 | 0.05 | 17.46 | 1.05 | 0.43 | 0.02 | 17.97 | 1.08 |
| Energy/Protein Supplement | | 1.59 | 0.05 | 0 | 0 | 6.64 | 1.2 | 0 | 0 | 18.13 | 2.04 | 0 | 0 |
| Min-Vit & Additive Supplement | | 0.6 | 0.16 | - | - | 0 | 0 | - | - | 0 | 0 | - | - |
| Total Feed | | 5.48 | 0.4 | 21.46 | 1.28 | 7.53 | 1.25 | 17.46 | 1.05 | 18.56 | 2.06 | 17.97 | 1.08 |
| DMI (lb/cow/d) | | 26.94 | | | | 24.99 | | | | 36.53 | | | |
| Feed Costs (\$/cow/d) | | 1.69 | | | | 2.3 | | | | 3.14 | | | |
| Number of Cows (#) | | 60 | | | | 60 | | | | 33 | | | |
| | | main | | Lact | | 2 year | | Lact | | hospital | | Lact | |
| | | Purchased | | Home-Grown | | Purchased | | Home-Grown | | Purchased | | Home-Grown | |
| | | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost | DMI | Cost |
| Forage | | 0.36 | 0.02 | 30.76 | 1.77 | 0.33 | 0.02 | 27.11 | 1.57 | 0.33 | 0.02 | 27.11 | 1.57 |
| Energy/Protein Supplement | | 20.44 | 2.1 | 4.81 | 0.41 | 18.71 | 1.93 | 4.44 | 0.38 | 18.71 | 1.93 | 4.44 | 0.38 |
| Min-Vit & Additive Supplement | | 0.75 | 0.38 | - | - | 0.69 | 0.35 | - | - | 0.69 | 0.35 | - | - |
| Total Feed | | 21.55 | 2.5 | 35.57 | 2.17 | 19.73 | 2.3 | 31.55 | 1.95 | 19.73 | 2.3 | 31.55 | 1.95 |
| DMI (lb/cow/d) | | 57.13 | | | | 51.28 | | | | 51.28 | | | |
| Feed Costs (\$/cow/d) | | 4.68 | | | | 4.25 | | | | 4.25 | | | |
| Number of Cows (#) | | 477 | | | | 259 | | | | 18 | | | |

Comparación Sistemática

→ Estudia los resultados generales!

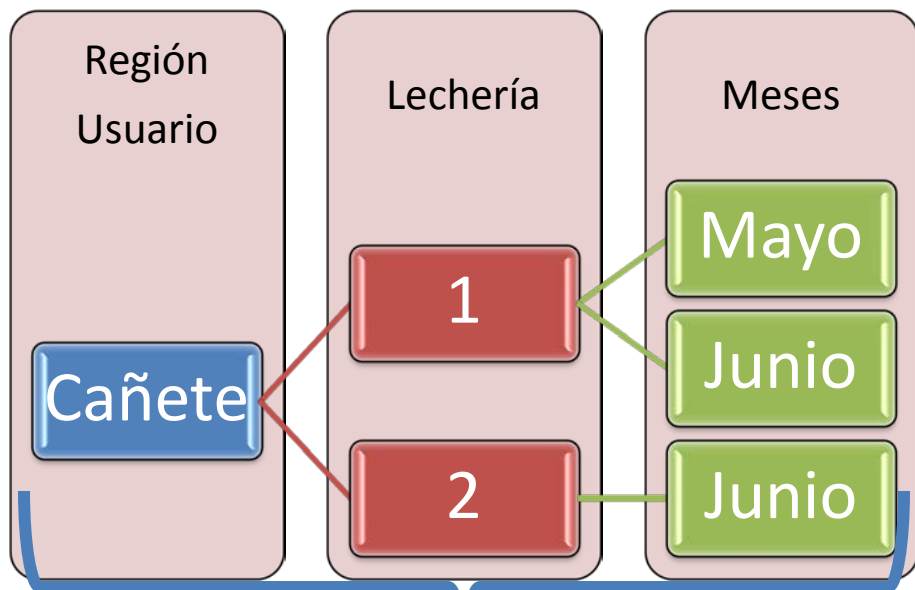
Farm3 Month
June 2011

| Summary | Milking | Dry |
|--|---------|-------|
| DMI (lb/cow/day) | 54.2 | 25.97 |
| MILK/DMI | 1.75 | |
| FCM/DMI | 1.64 | |
| ECM/DMI | 1.74 | |
| PURCHASED FEED COST (\$/cow/day) | 2.41 | 0.83 |
| HOME GROWN FEED COST (\$/cow/day) | 2.05 | 1.17 |
| SUPPLEMENT FEED COST (\$/cow/day) | 0.01 | |
| TOTAL FEED COSTS (\$/cow/d) | 4.46 | 1.99 |
| INCOME OVER PURCHASED SUPPLEMENT COST (IOPSC) (\$/cow/day) | 15.21 | |
| INCOME OVER PURCHASED FEED COSTS (IOPFC) (\$/cow/day) | 12.81 | |
| INCOME OVER FEED COSTS (IOFC) (\$/cow/day) | 10.76 | |

Ingesta de materia seca
Eficiencia de alimentación
Total costo de alimentos comprados
Total costo de alimentos producidos
ISCA – suplementos
ISCA – comprados
ISCA

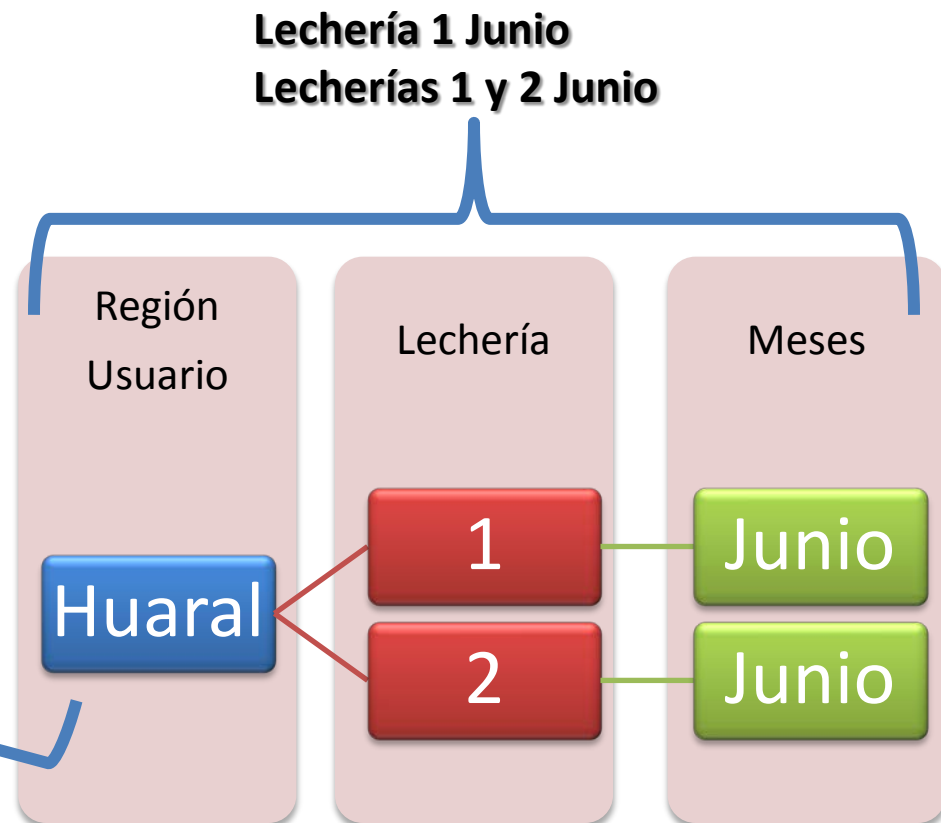
Comparación Sistemática

→ ANALIZA los resultados!



Lechería 1 Mayo y Junio
Lecherías 1 y 2 Junio

Cañete y Huaral en Junio!



Lechería 1 Junio
Lecherías 1 y 2 Junio

Comparación Sistemática

→ ANALIZA los resultados!

Selecciones o Filtros

ANALYSIS
(Perform Analysis on Multiple Farms)

Farm **Milking Cows** **Month** **Compare all your farms with all farms from**

| | | | |
|---|--|--|---------------------------------|
| Farm1 Farm2 Farm3 Farm4 Farm5 | Less than 100 100 to 350 350-500 Greater than 500 | June 2011 May 2011 April 2011 March 2011 February 2011 | Dyk Booher Upah Bolton |
|---|--|--|---------------------------------|

Opciones de Precios Estándares

(Ctrl + Click to Make Multiple Selection)

Standardized Farm/Mailbox

Analyze

Clear Selections

| Include in Analysis | Ingredient | %DM | Effective Price as Fed (\$/ton) | Price as Fed (\$/ton) | Price DM (\$/ton) |
|--------------------------|------------------|-----|---------------------------------|-----------------------|-------------------|
| <input type="checkbox"/> | Corn Silage Cofi | | 0 | | |
| <input type="checkbox"/> | Hay Forage | | 0 | | |
| <input type="checkbox"/> | Corn CGG | | 0 | | |
| <input type="checkbox"/> | SoybeanMeal SBM | | 0 | | |
| | Skout | | | | |
| <input type="checkbox"/> | Milk Price | | | | 15 |

Analyze

Clear Selections

Comparación Sistemática

→ ANALIZA los resultados!

Farm Statistics

| Farm Parameters | Min | 25%Tile | Mean | 75%Tile | Max |
|----------------------------|------|---------|-------|---------|-------|
| Milk Bulk Tank(lb/cow/day) | 55 | 60 | 68.9 | 75 | 85 |
| Milk Butterfat(%) | 3.4 | 3.5 | 3.53 | 3.6 | 3.6 |
| Milk Protein(%) | 3 | 3.1 | 3.16 | 3.2 | 3.3 |
| Milk Price(\$/cwt) | 13.8 | 13.8 | 14.37 | 14.8 | 15.2 |
| Milk Revenue(\$/cow/day) | 7.59 | 8.88 | 9.92 | 11.33 | 12.92 |

[Download Summary](#)

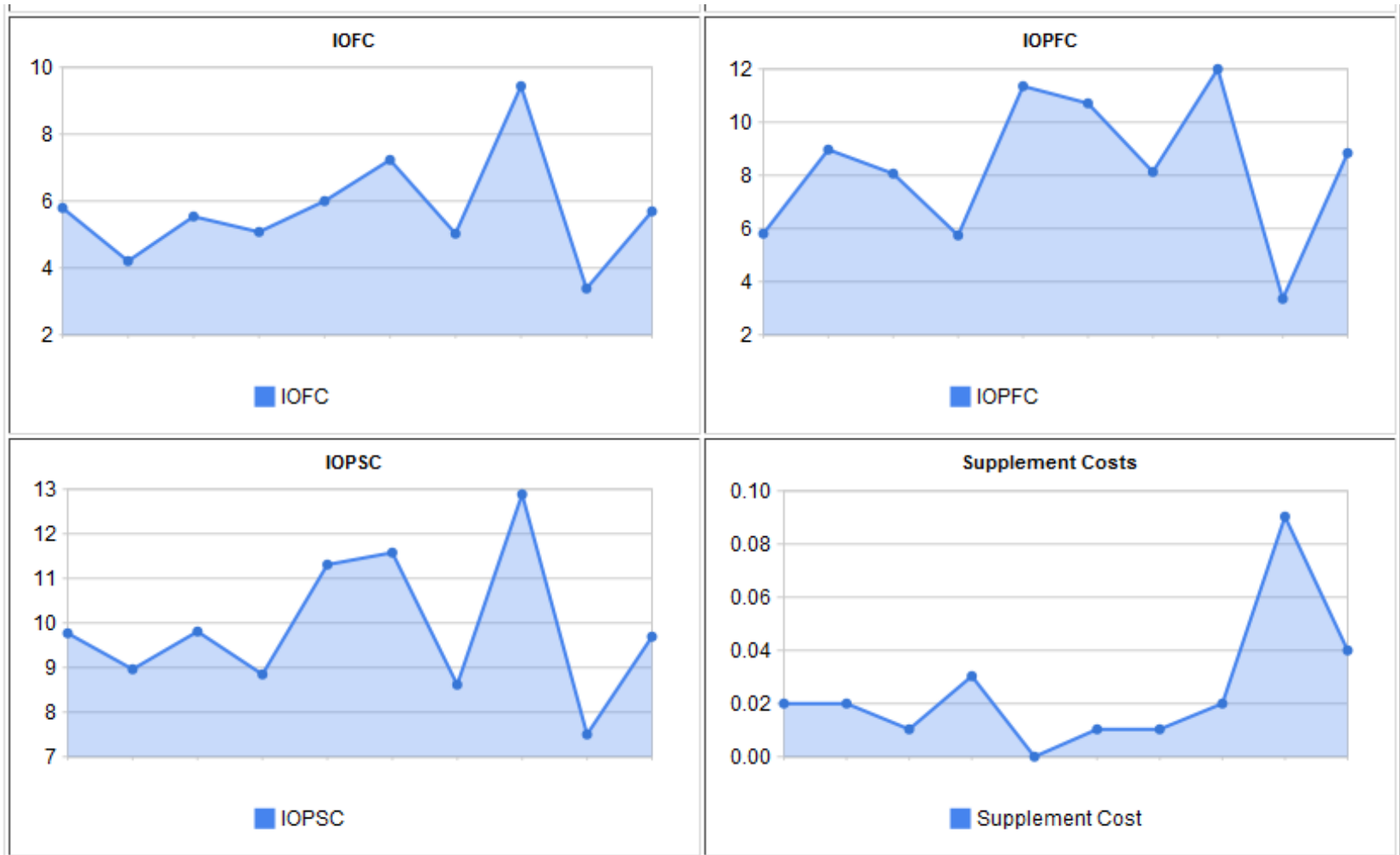
Net Summary

Farms Analyzed **10**

| Summary | Milking | | | | | Dry | | | | |
|---|---------|---------|------|---------|-------|------|---------|-------|---------|------|
| | Min | 25%Tile | Mean | 75%Tile | Max | Min | 25%Tile | Mean | 75%Tile | Max |
| DMI (lb/cow/day) | 41 | 49 | 51.2 | 56 | 59 | 25 | | 33.25 | | 39 |
| MILK/DMI | 1.09 | 1.31 | 1.35 | 1.43 | 1.45 | | | | | |
| FCM/DMI | 1.01 | 1.01 | 1.25 | 1.33 | 1.35 | | | | | |
| ECM/DMI | 1.08 | 1.32 | 1.35 | 1.45 | 1.46 | | | | | |
| FORAGE COSTS (\$/cow/day) | 1.81 | 2.32 | 2.62 | 2.99 | 3.53 | 0 | 0 | 2.39 | 2.35 | 2.79 |
| ENERGY COSTS (\$/cow/day) | 1.26 | 1.44 | 1.56 | 1.67 | 1.79 | 0 | 0 | 0.05 | 0 | 0.19 |
| MINERAL COSTS (\$/cow/day) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PURCHASED FEED COST (\$/cow/day) | 0 | 0.51 | 1.62 | 3.13 | 4.22 | 0.85 | | 1.51 | | 2.35 |
| HOME GROWN FEED COST (\$/cow/day) | 0 | 0.69 | 2.55 | 3.5 | 5.32 | 0 | | 0.93 | | 1.44 |
| SUPPLEMENT COSTS (\$/cow/day) | 0 | 0.01 | 0.03 | | 0.09 | | | | | |
| TOTAL FEED COSTS (\$/cow/d) | 3.48 | 3.84 | 4.2 | 4.35 | 5.32 | 1.95 | | 2.43 | | 2.98 |
| INCOME OVER PURCHASED SUPPLEMENT COSTS (IOPSC) (\$/cow/day) | 7.5 | 5.79 | 9.9 | 11.32 | 12.9 | | | | | |
| INCOME OVER PURCHASED FEED COSTS (IOPFC) (\$/cow/day) | 3.37 | 5.79 | 8.3 | 10.74 | 11.99 | | | | | |
| INCOME OVER FEED COSTS (IOFC) (\$/cow/day) | 3.37 | 5.03 | 5.74 | 6 | 9.46 | | | | | |
| INCOME OVER FEED COSTS per CWT (IOFC/cwt) (\$/cwt) | 6.13 | 8.38 | 8.34 | 8 | 12.61 | | | | | |

Comparación Sistemática

→ ANALIZA los resultados!



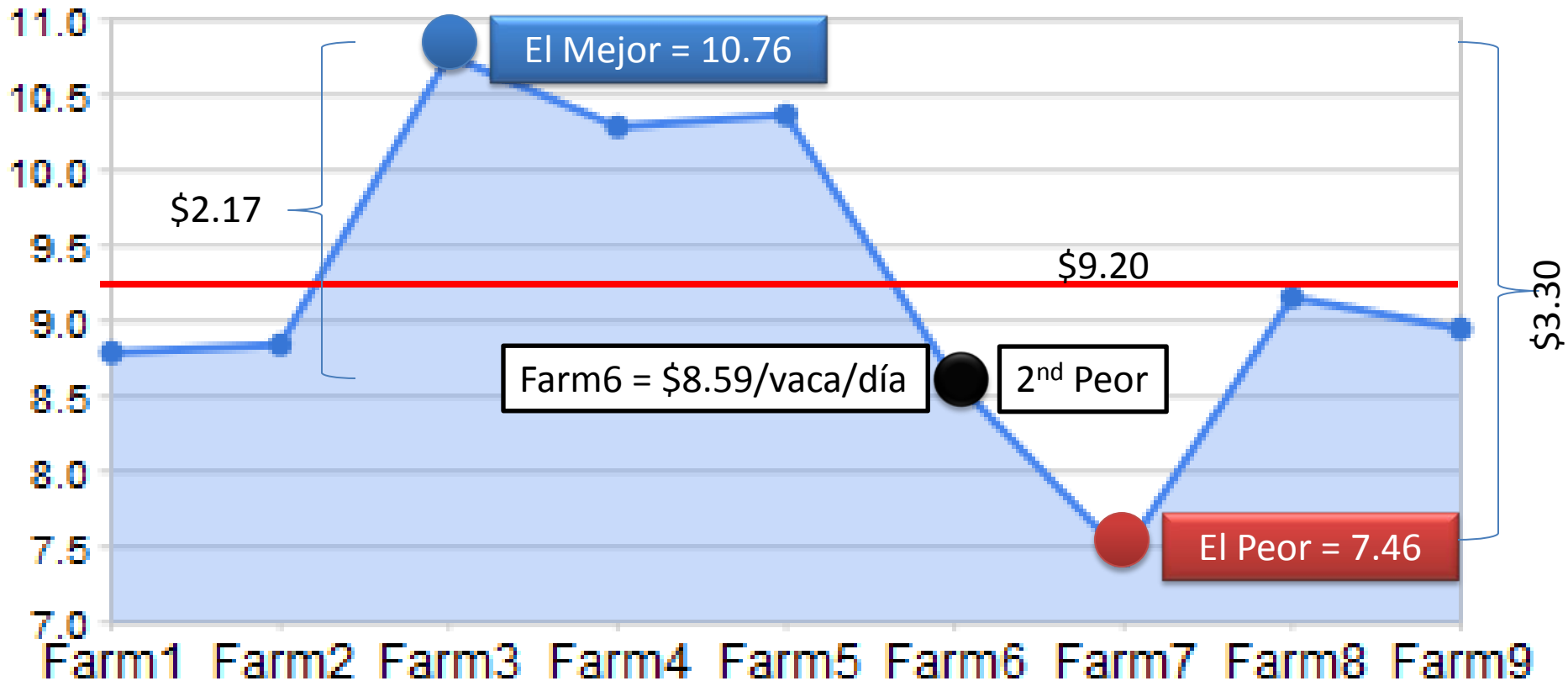
Estudio de Caso

- 9 Lecherías SIMILARES en Wisconsin
 - ~12,000 vacas
- Abril 2010
- Misma área geográfica
 - Condado de Fond Du Lac, WI
 - Paul Dyk



Estudio de Caso

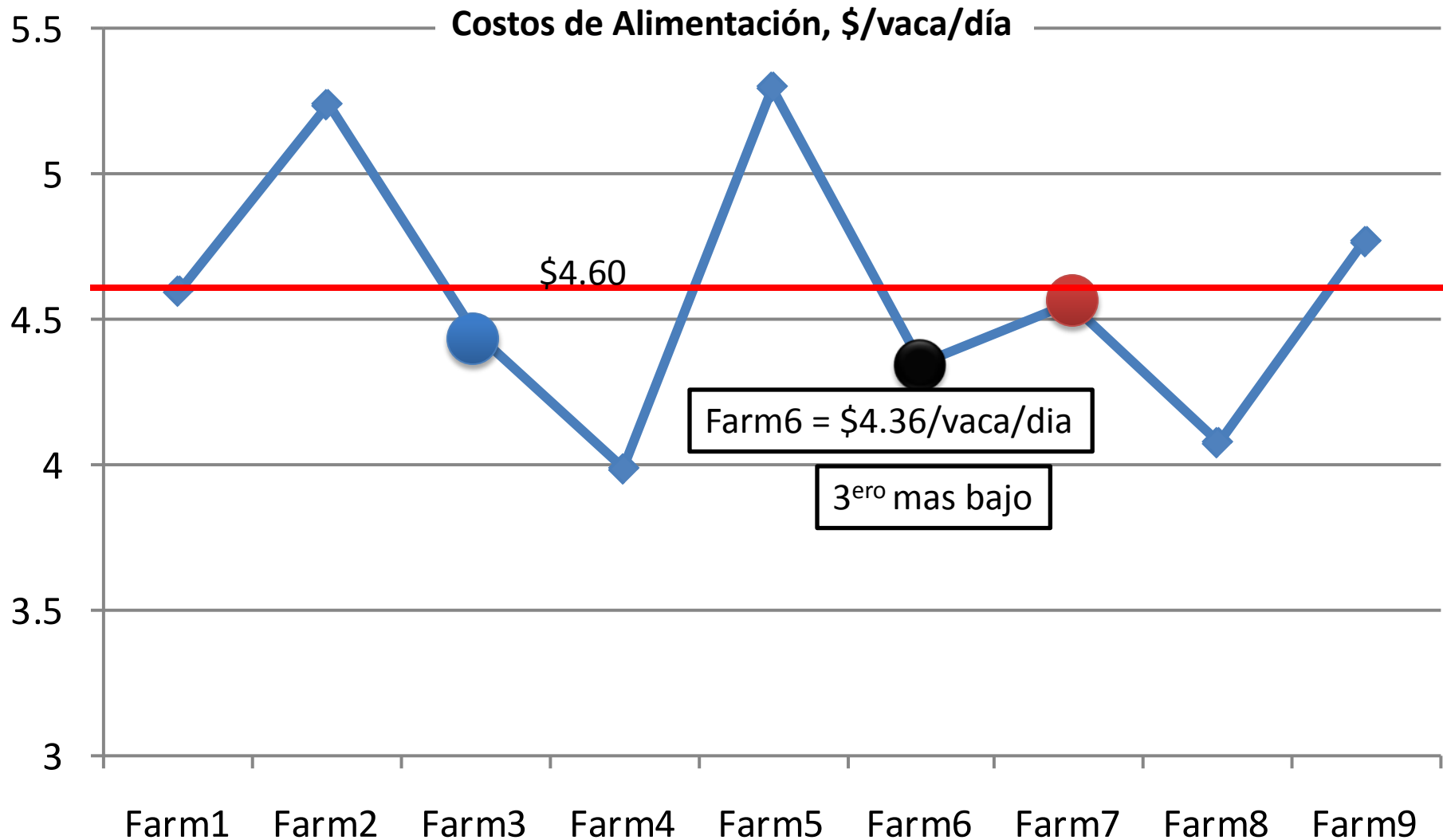
ISCA, Ingreso Sobre los Costos de Alimentación



■ ISCA

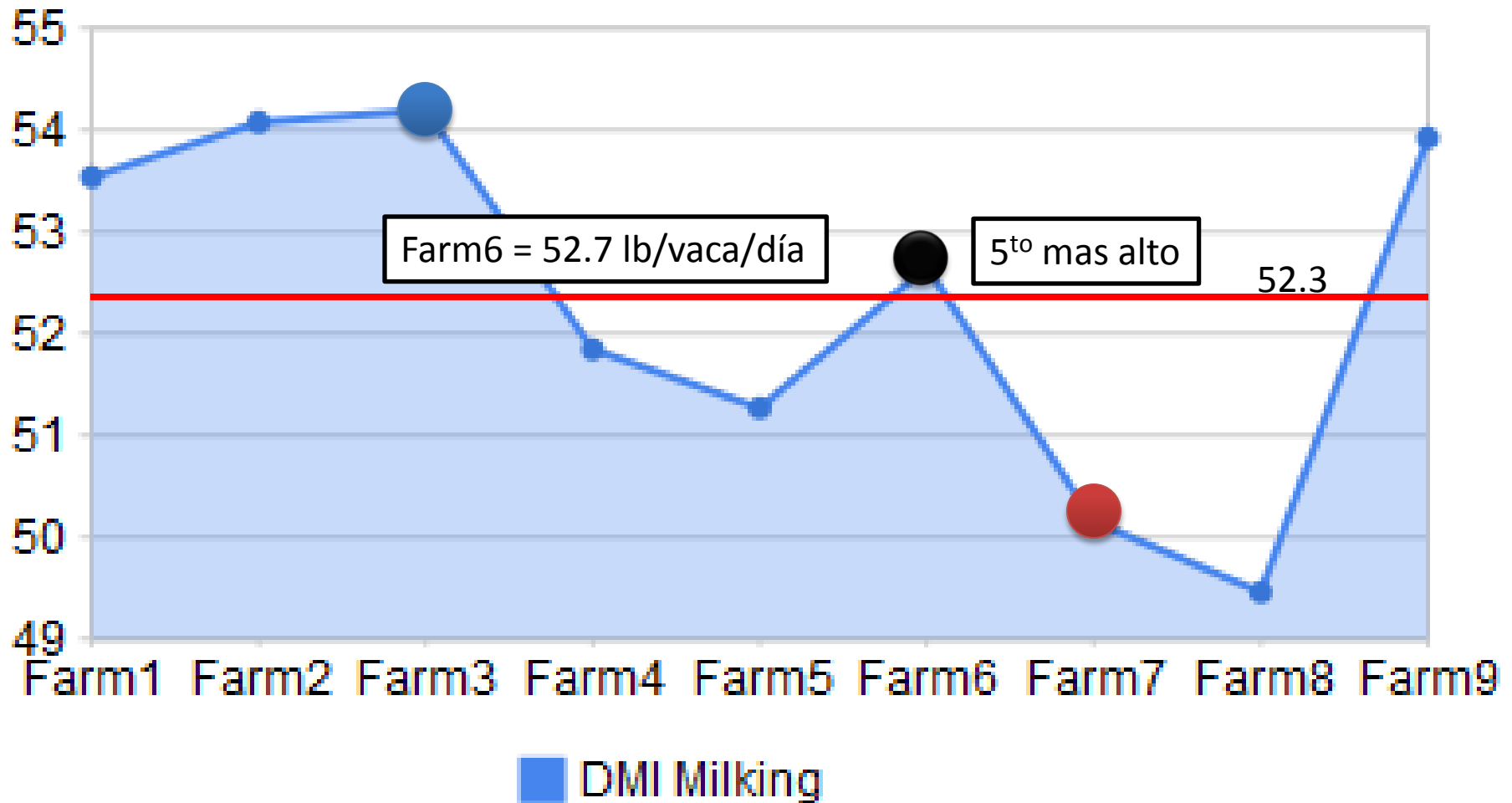
Por qué estas grandes diferencias?

Estudio de Caso

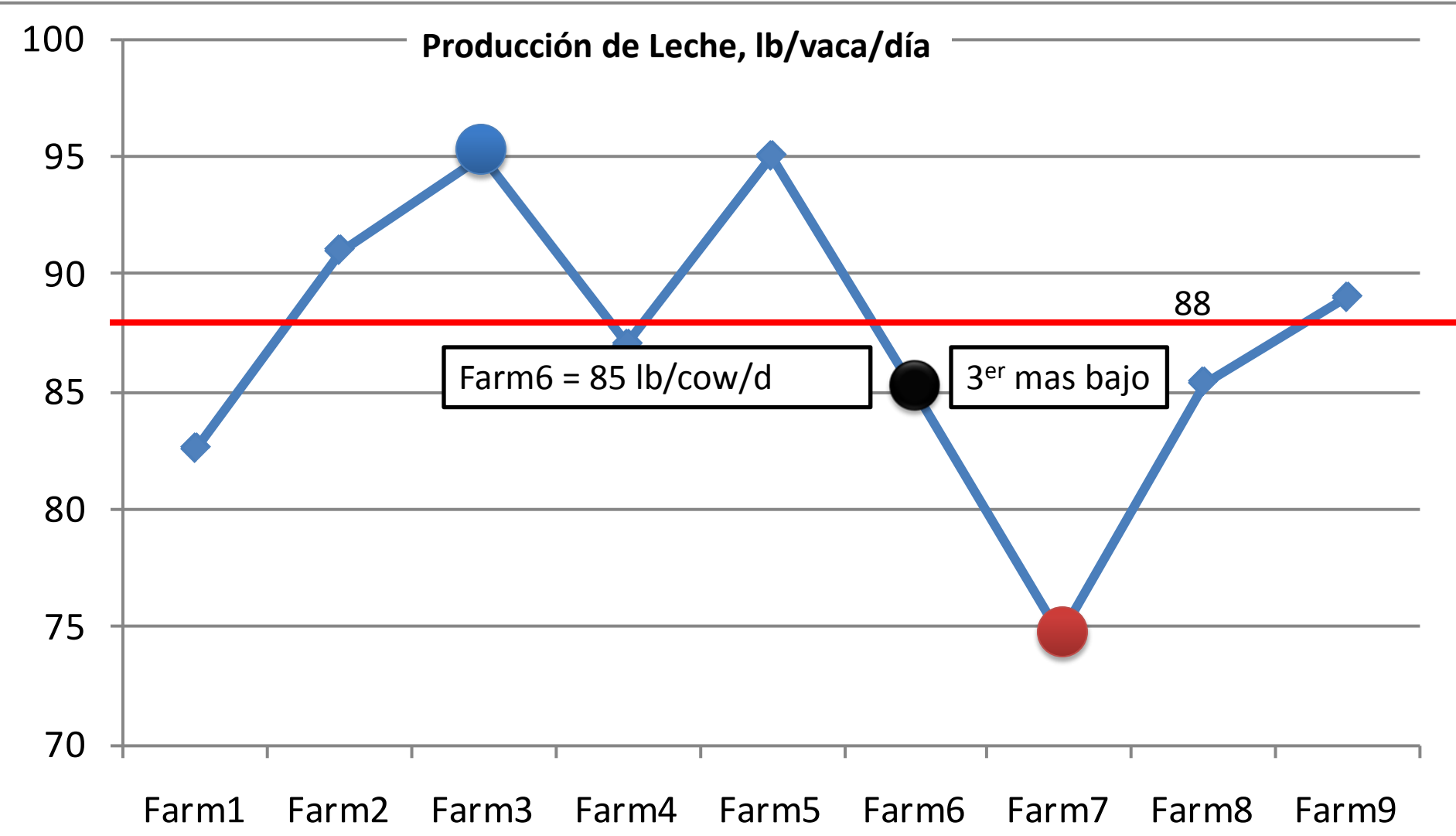


Estudio de Caso

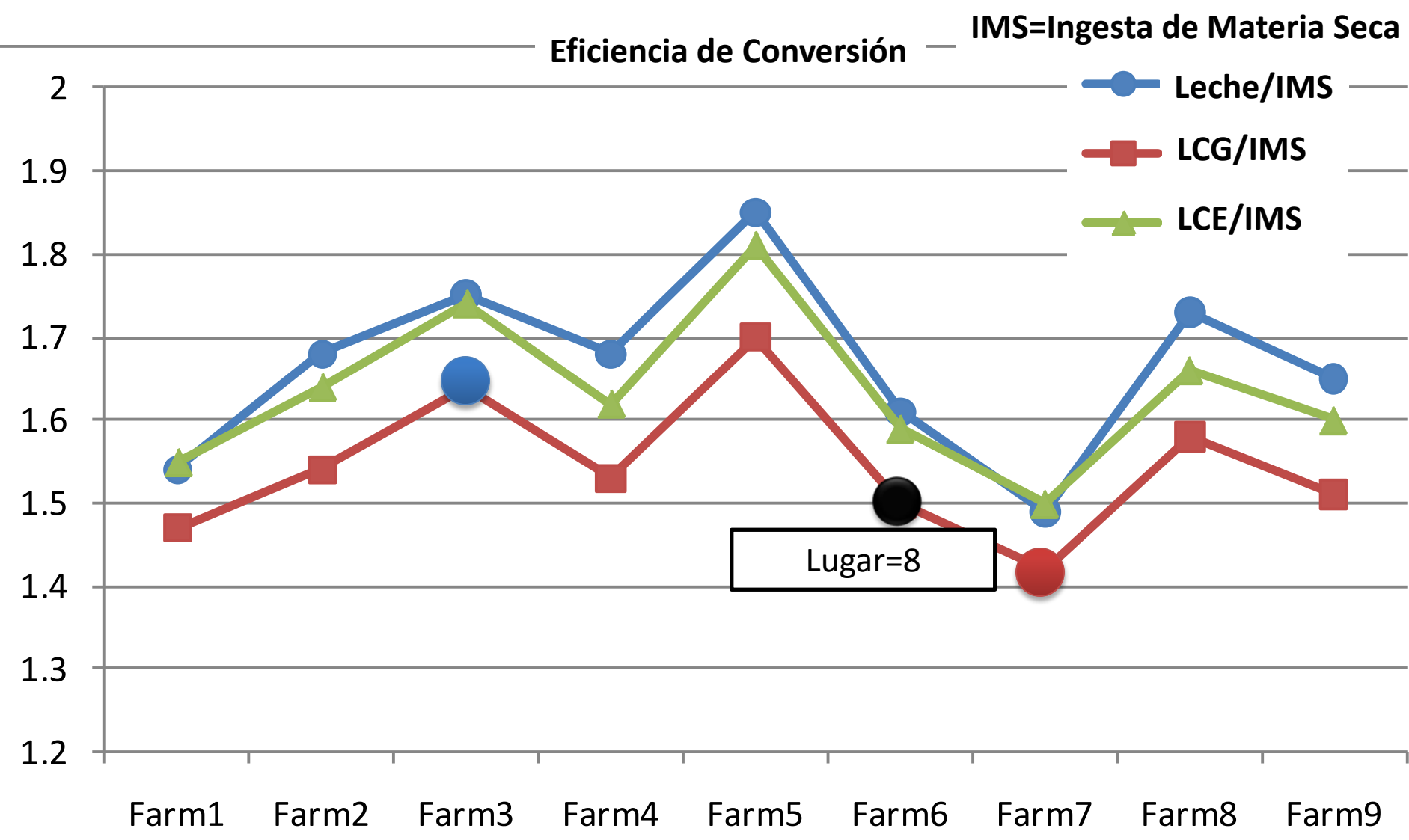
Ingesta de Materia Seca, IMS, lb/vaca/día



Estudio de Caso

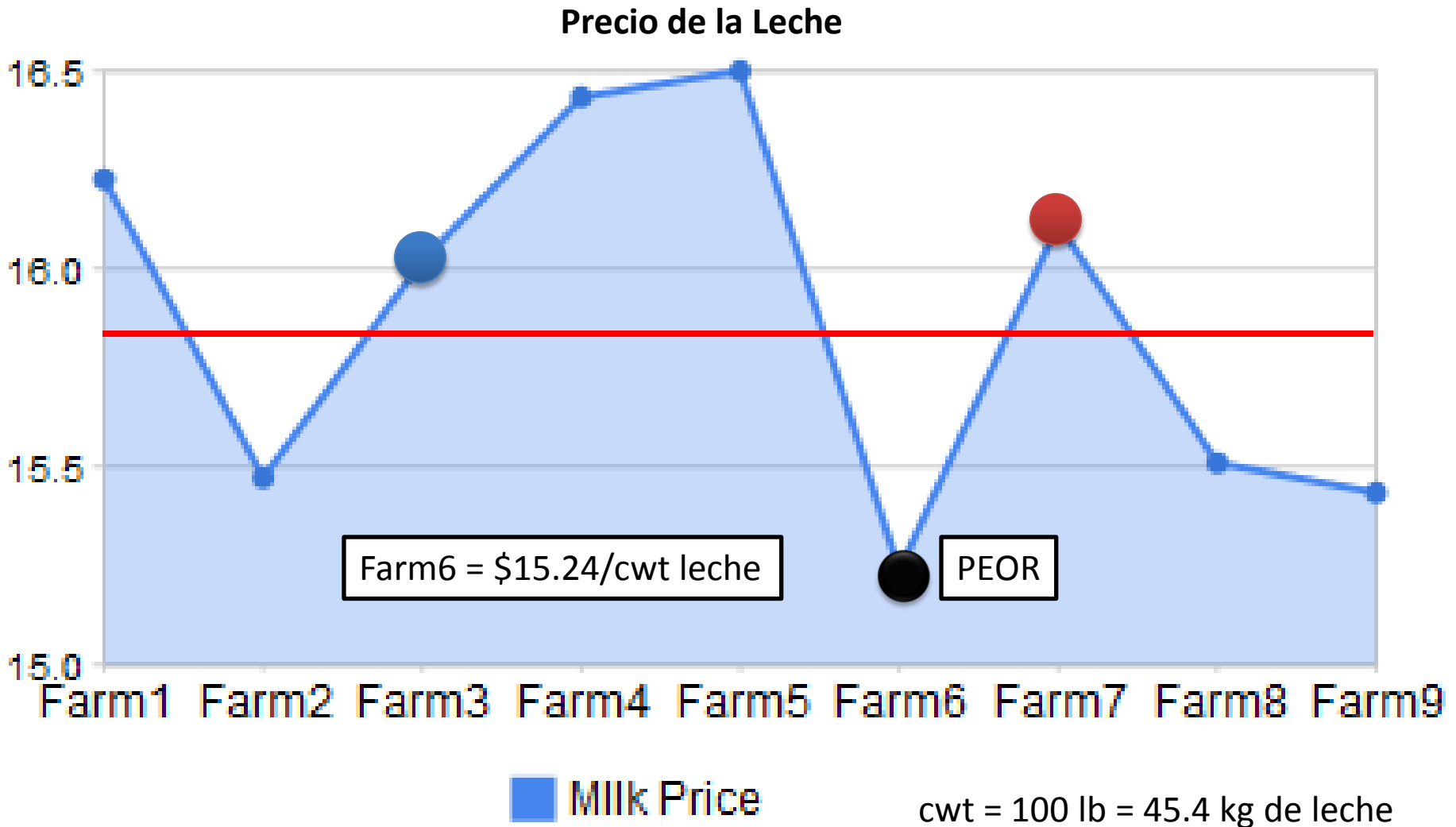


Estudio de Caso



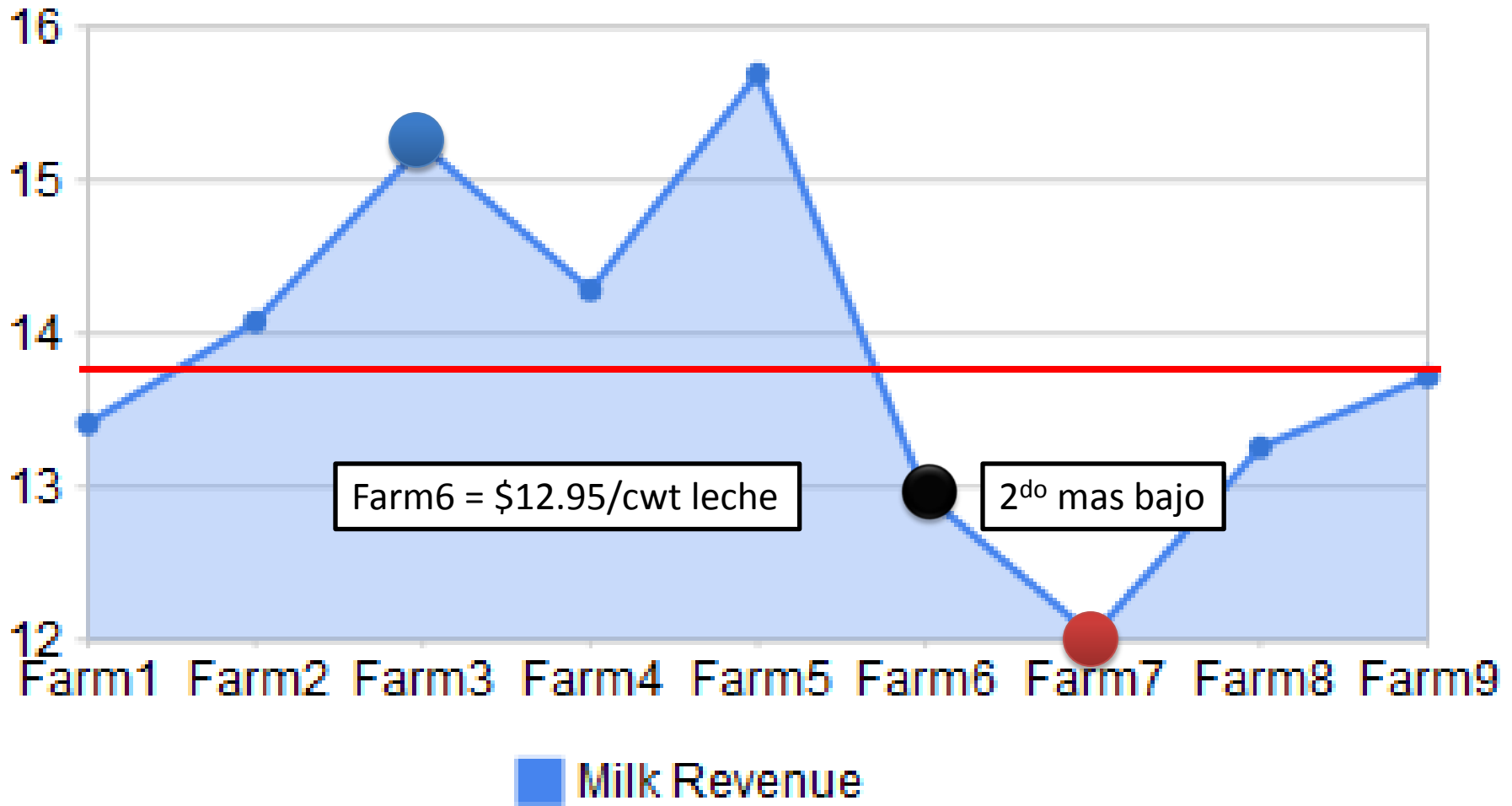
Lugar=8

Estudio de Caso



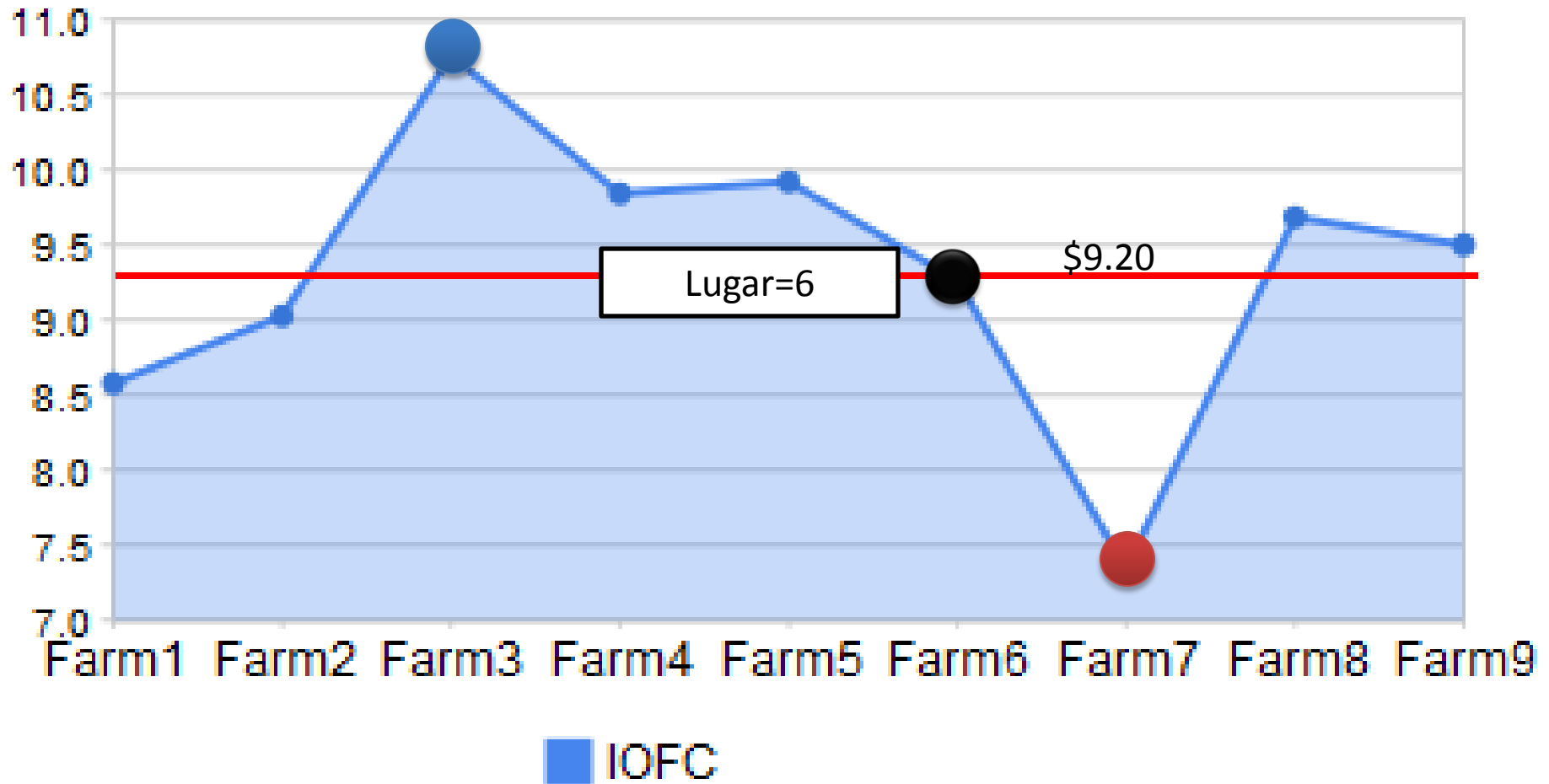
Estudio de Caso

Valor de la Leche, \$/vaca/día



Estudio de Caso

Que sucede si tendría el precio de leche y los costos de alimentos mas favorables?



Estudio de Caso

- Mejorar eficiencia de alimentación!
- Aumentar producción al nivel de Ingesta de Materia Seca
- Mantener producción reduciendo la Ingesta de Materia Seca
- Monitorear intensamente calidad de alimentos



Estudio de Caso

→ Mejorar el precio de la leche!

- Por qué tiene el peor precio de leche?
- Mejorar componentes?
 - Grasa, proteína, sólidos, ...
- Mejorar sanidad de la leche
 - Conteo de células somáticas



Estudio de Caso

→ Reducir costos de los alimentos!

- Investigar los costos de los alimentos producidos en la lechería
- Profundizar en el análisis de precios de ingredientes comparado a otras lecherías



Haz tus Propios Análisis

DairyMGT.info

Dairy Management UW-Extension
University of Wisconsin-Madison

Home | Tools | Projects | Publications | Presentations | LGM-Dairy | Links
About | Contact | Comments | News | People | Opportunities | Gallery

Dairy Management

Dairy Management site is designed to support dairy farming decision-making focusing on model-based scientific research. The ultimate goal is to provide user-friendly computerized decision support systems to help dairy farms improve their economic performance. Dr. Victor Cabrera focuses on model-based decision support in dairy cattle and in dairy farm production systems. Dr. Cabrera's primary interest is to improve cost-efficiency and profitability along with environmental stewardship in dairy farms by using simulation techniques, artificial intelligence, and expert systems. Dr. Cabrera's research and Extension programs involve interdisciplinary and participatory approaches towards the creation of user-friendly decision support systems. As an Extension Specialist, Dr. Cabrera works in close relationships with county-based Extension faculty, dairy producers, consultants, and related industry.

- Latest Projects**
 - Dairy Cow Fertility
 - Strategies of Pasture Supplementation
 - Success for Small Dairy Farmers
 - LGM-Dairy
 - Dairy Economic Decision Support System
- UW**
 - University of Wisconsin - Madison
 - UW - Cooperative Extension
 - UW - Dairy Science
 - Understanding Dairy Markets
- Dairy News**
 - UW-Extension Dairy News

Contact
Victor E. Cabrera, PhD
Assistant Professor
Extension Specialist
Dairy Management
279 Animal Sciences
1675 Observatory Dr
Madison, WI 53706
(608) 265-4900
vca@wisc.edu
Professional Page

TOOLS
Dairy Management Tools
Click to find out more about tools provided by DairyMGT.
[READ MORE](#)

Home | Tools | Projects | Presentations | Publications | LGM-Dairy | Links
©2009 Dairy Management-UW Extension

Dairy Management UW-Extension
University of Wisconsin-Madison

Home | Tools | Projects | Publications | Presentations | LGM-Dairy | Links
Feeding | Heifers | Reproduction | Production | Replacement | Financial | Environment | Price Risk

Management Tools

A collection of state-of-the-art dairy management tools that are: user-friendly, interactive, robust, visually attractive, and self contained. All these tools have clear or self-explanatory instructions and technical support available.

Click on the Tool title to learn more.

Feeding

- Optigen Feed Calculator
- Income Over Feed Supplement Cost
- 4-State Dairy Extension Dairy Feed Cost Evaluator

Benchmarks feed costs and income over feed cost (IOFC) for a group of participating herds
Excel Spreadsheet (Open)
Documentation (Open)
Web-based Database System (Open)
Demo (Click to View the Video)

- Corn Feeding Strategies
- Dairy Ration Feed Additive Break-Even Analysis

[Dairy Extension Feed Cost Evaluator](#)

La Herramienta

→ Disponible gratis para cualquier persona interesada en evaluar los ISCA!

→ Contribuye a la base de datos y recibe a cambio datos de otros en el sistema!



