



University of Wisconsin Dairy Management

Cuánto mas dinero podría ganar mejorando la eficiencia reproductiva de vacas en lactancia?

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United States
Department of
Agriculture

National Institute
of Food and
Agriculture



Introducción

→ Productores no saben cual es el \$valor de mejorar reproducción!



- Command : BREDSUM\E

Date	Ht	Elig	Heat	Pct	Pg	Elig	Preg	Pct	Aborts
								14	1
								19	0
								17	3
								3	3
								2	0
								0	0
								2	0
								0	0
								0	0
								3	3
								1	1
								1	1
			32	49		65	12	18	3
			18	32		57	7	12	0
			40	58		68	6	9	2
			30	43		0	0	0	0
			44	68		0	0	0	0
Total			952	499		52	940	153	21

Introducción

→ Performance reproductiva es asociada con rentabilidad



Louca and Legates, 1968

Britt, 1985

Lima et al., 2010

Introducción

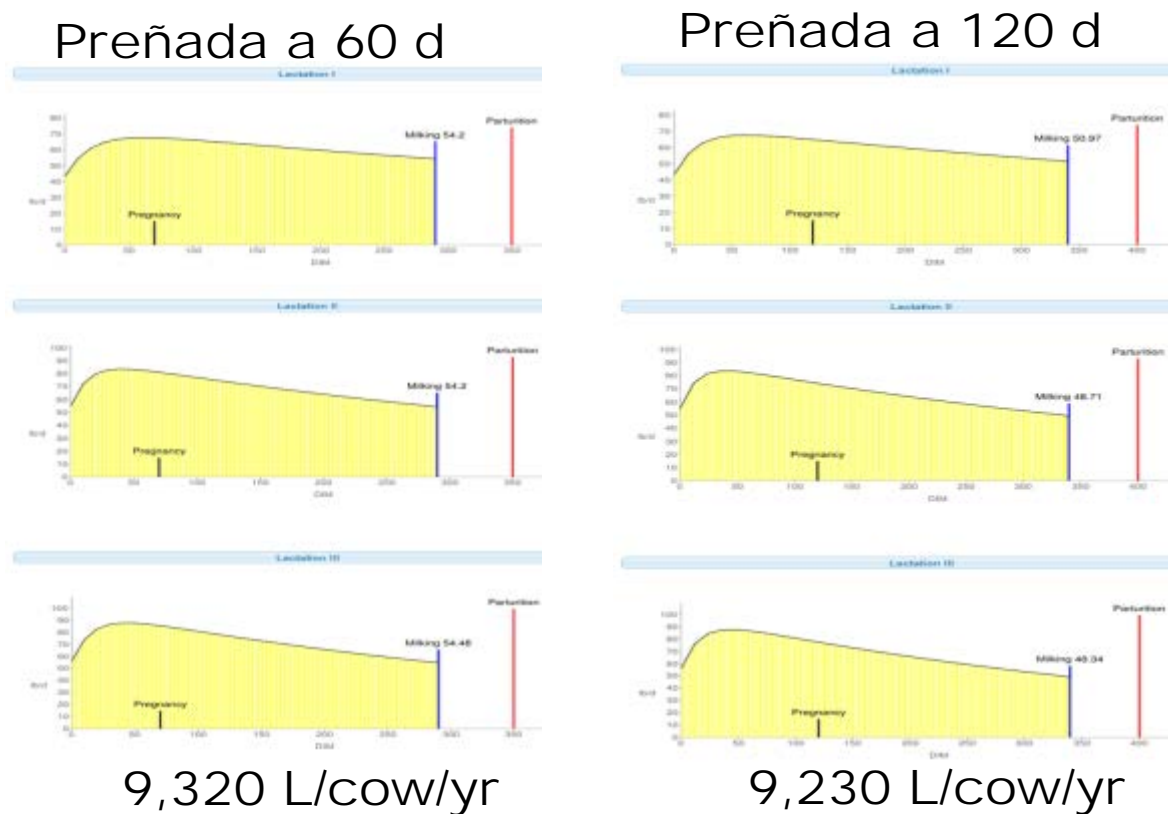
→ Cálculo es complejo!

REPOSICION DE COSTOS
DESCARTE
LECHE TERNEROS



Introducción

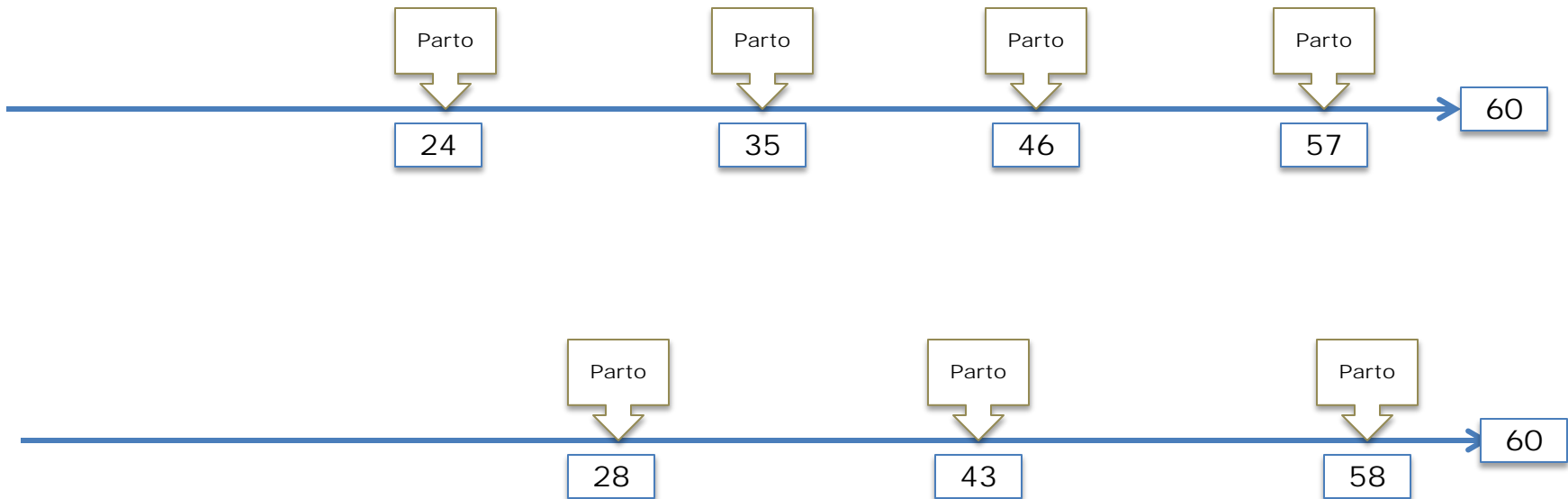
→ Producción/productividad



60 d menos =
↑ **90 L/cow/yr**

Introducción

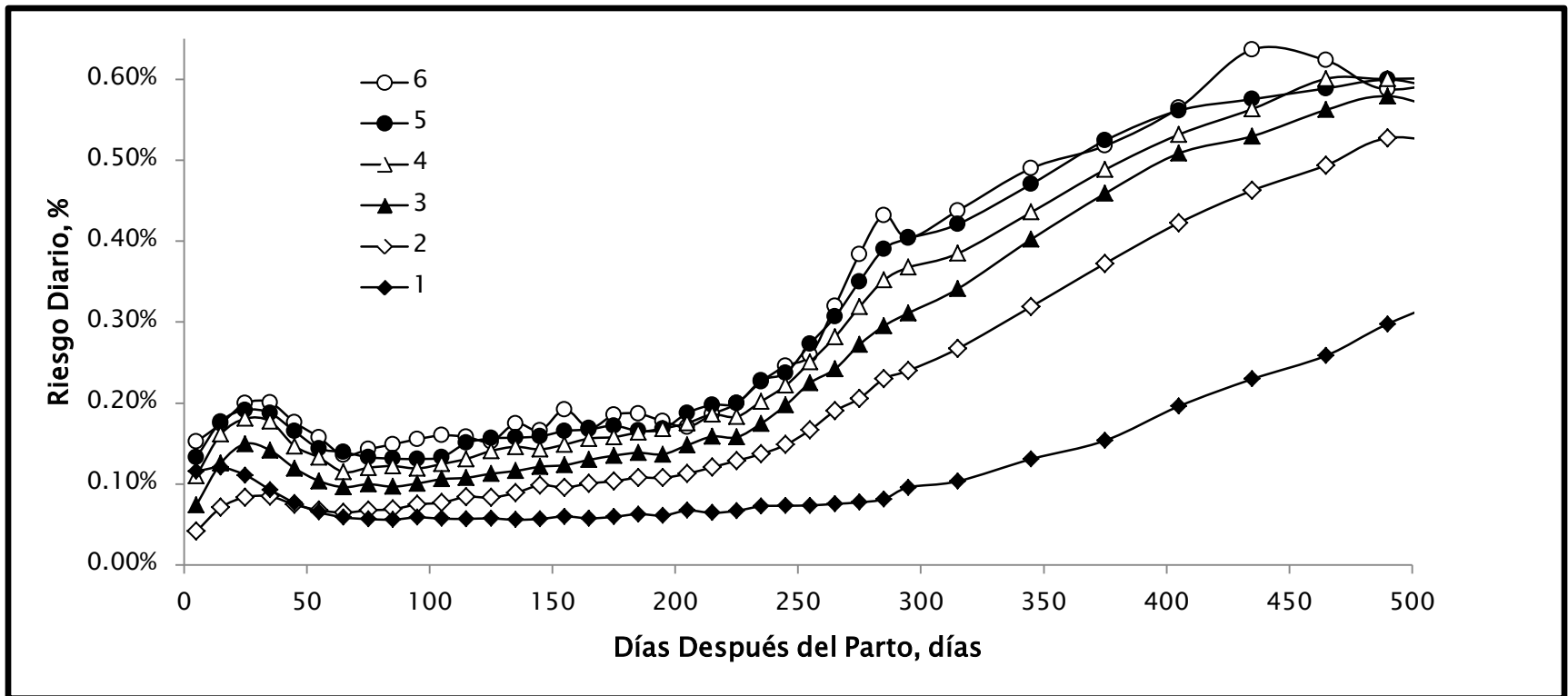
→ Número de nacimientos



Por Ejemplo: 1 cría mas por vaca en 60 meses de vida adulta

Introducción

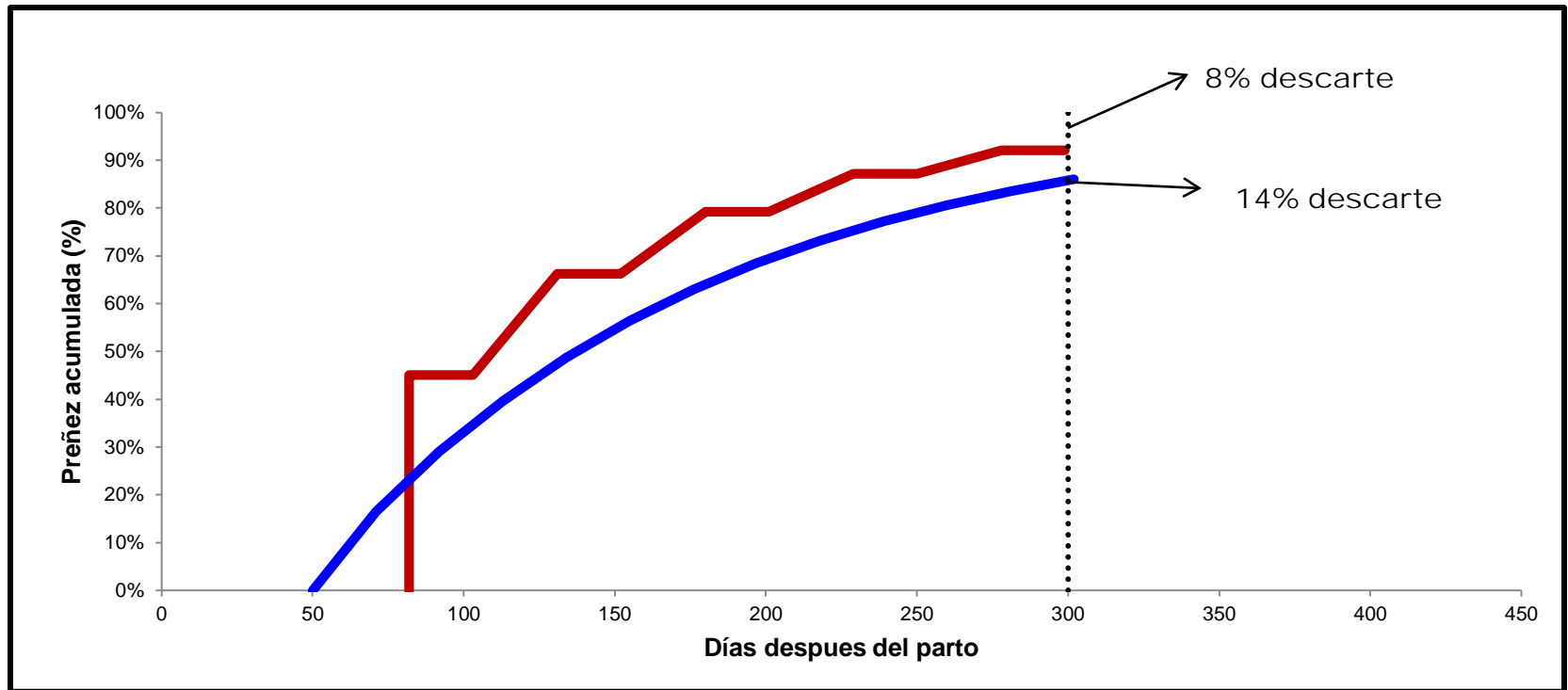
→ Descarte involuntario



Por ejemplo: ↑ descarte tarde en la lactancia

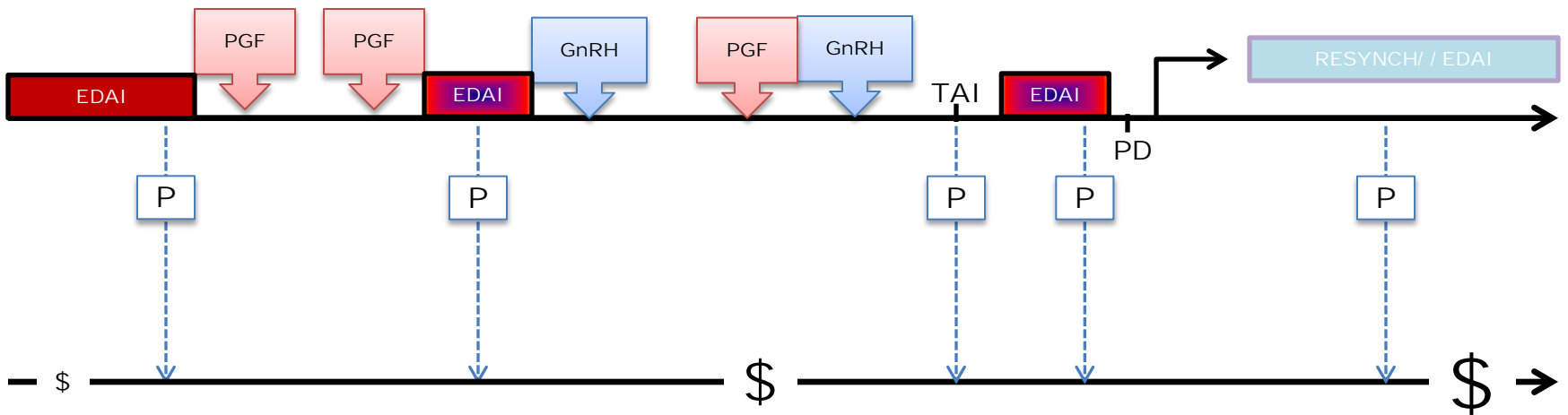
Introducción

→ Descarte voluntario



Introducción

→ Costos de reproducción



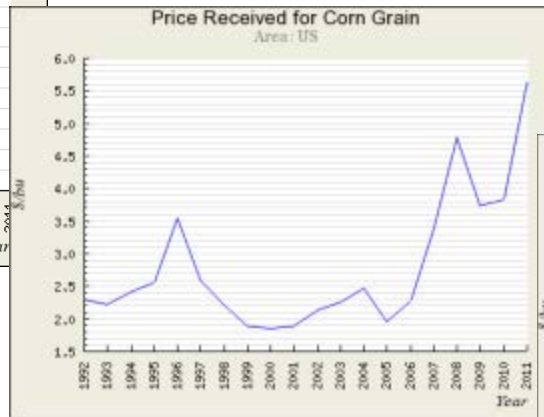
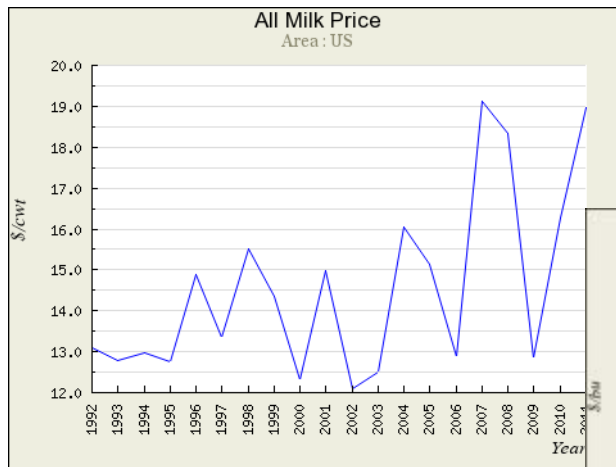
Introducción

→ Específico para una lechería



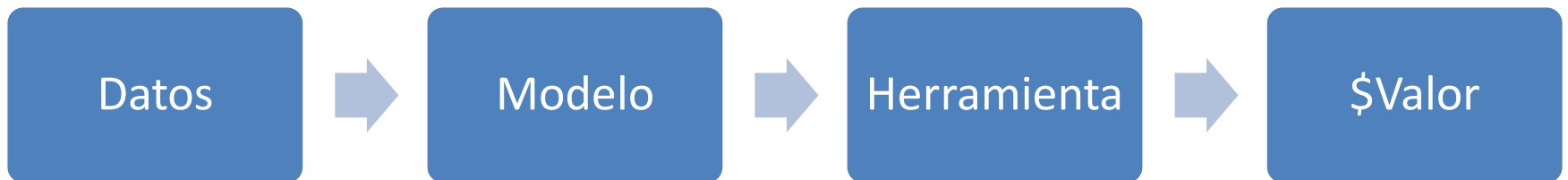
Introducción

→ Depende del mercado!



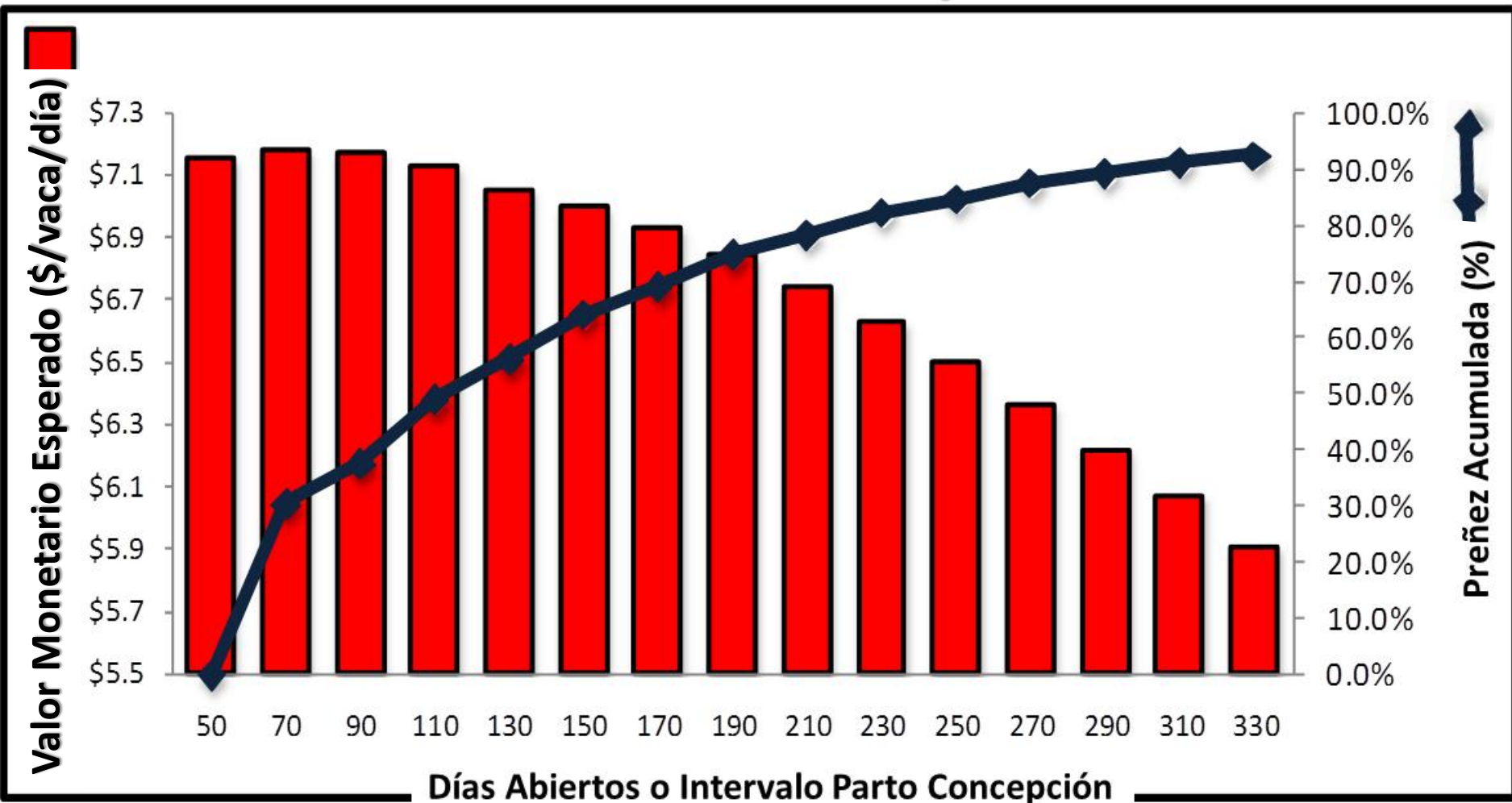
Objetivo

→ Crear «herramienta(s)» que calcule(n) el \$valor de programas reproductivos en lecherías



Un Enfoque

Valor Monetario Esperado



Valor Neto

→ Diferencia entre ingresos y egresos de una curva reproductiva



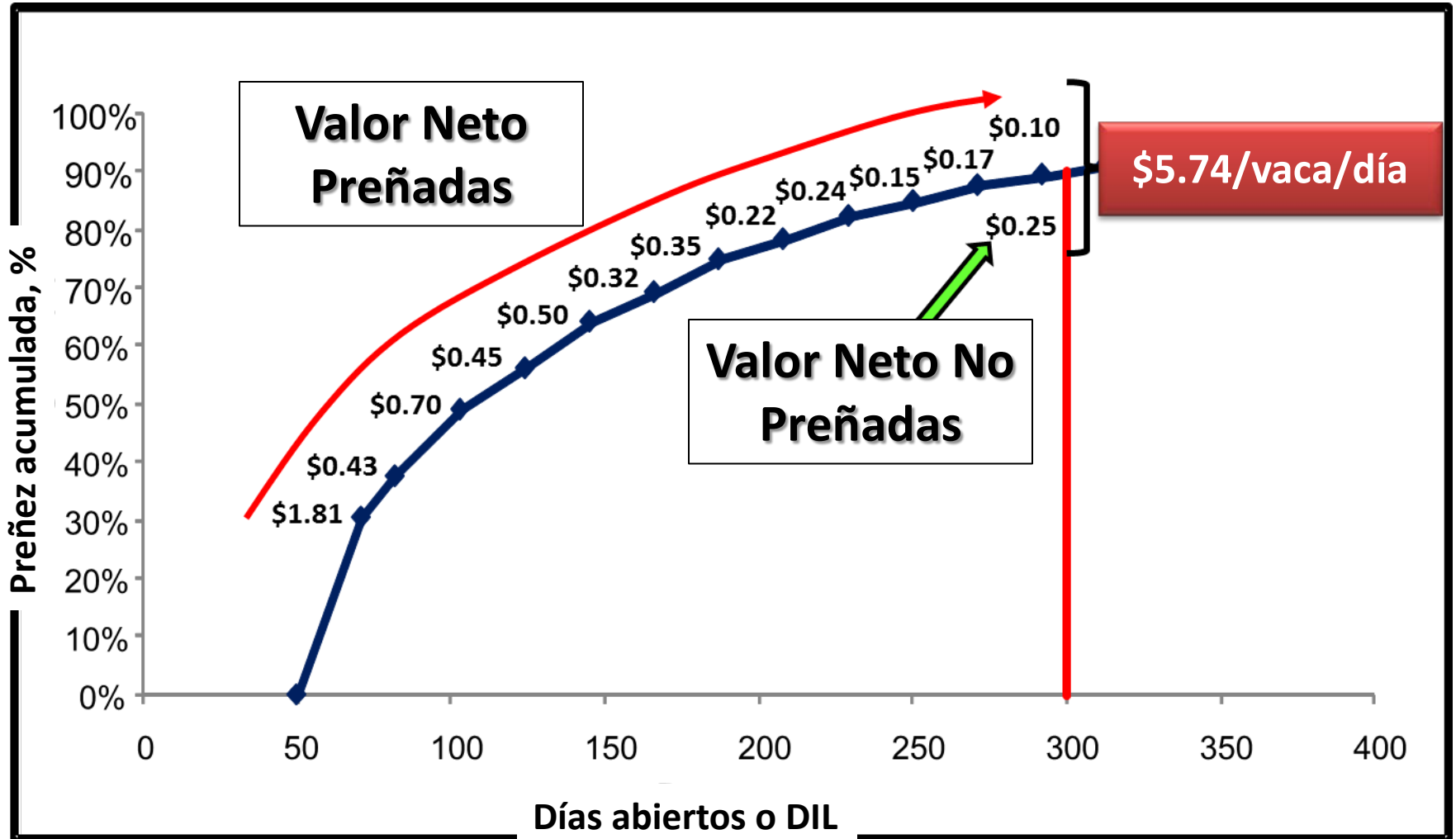
Valor Neto

→ Performance reproductiva

	Días Abiertos	Disponibles	Tasa IA	Preñez/Periodo	Abierta/Periodo	Preñadas	No Preñadas
	días				%		
Espera Voluntaria	50	100.00	0.00			0.00	100.00
Detección Celos	71	100.00	80.00	30.40	49.60	30.40	69.60
1er IATF	82	20.00	20.00	7.20	12.80	37.60	62.40
Detección Celos	103	62.40	40.56	11.36	29.20	48.96	51.04
2nd IATF	124	21.84	21.84	7.21	14.63	56.16	43.84

Valor Neto

→ Performance económica (\$Valor)



UW-DairyRepro\$



UW-Dairy Repro\$
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Department of Dairy Science



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Farm Name **Farm A** Location **Wisconsin**

1. Productive Parameters		
Lactating Cows (#)		1,688
Rolling Herd Average (RHA) (lb/cow/y)	30000	
Involuntary Culling Rate (%)		29.4%
Mortality Rate (%)		6.9%
Stillbirth Rate (%)		9.0%

2. Lactation Curves			Lact. 1	Lact. 2	Lact. > 2
Cow Number			778	469	441
Body Weight (lb/cow)			1,350	1,400	1,450
Test	DIM	Define Lactation Curves Below			
1	15	61	86	89	
2	45	81	107	111	
3	75	90	110	114	
4	105	94	107	108	
5	135	93	100	102	
6	165	90	92	97	
7	195	91	84	91	
8	225	87	77	84	
9	255	85	74	79	
10	285	83	65	78	
11	315	78	62	81	
12	345	72	53	75	
13	375	68	52	67	
14	405	63	59	66	
15	435	51	51	49	
16	465	51	43	52	
17	495	51	35	47	
18	525	47	30	43	
19	555	44	25	38	

3. Economic Parameters			Check if total breeding costs are known
Milk Price (\$/cwt)		16.97	
Cost Feed Lactating (DM) (\$/lb)		0.10	
Dry Period Fixed Cost (\$/d)		2.20	
Female Calf Value (\$/calf)		108	
Male Calf Value (\$/calf)		40	
Heifer Replacement Value (\$/heifer)		1,288	
Salvage Value (\$/cow)		624	
Labor Cost for Injection (\$/hr)		15.00	
Heat Detection Cost (\$/hr)		15.00	
Artificial Insemination Cost (\$/cow)		10.00	
Interest Rate (%)		6.5%	

4. Pregnancy Diagnosis Cost			Current	Alternative	100% HD
Palpation (\$/hr)		105			105
Ultrasound (\$/hr)				135	
Blood Test (\$/cow)					

5.a. Reproductive Program			Start day	Alternative	Start day
1 st Service Postpartum	Double-Ovsynch	Fri		Double-Ovsynch	Fri
2 nd and Subsequent Services	Ovsynch	Mon		Double-Ovsynch	Fri
Resynch before preg check	YES			YES	

5.b. Reproductive Program Parameters			Current	Alternative	100% HD
Voluntary Waiting Period (d)		82	82	50	
Estrus Cycle Duration (d)			21		
Maximum DIM for Breeding			300		
DIM to 1 st TAI (d)		82	82		
Interbreeding Interval (d)		42	49		
Heat Bred Before 1 st TAI (%)		0%	0%	50%	
CR Heat Bred Before 1 st TAI (%)		0%	0%	33%	
Heat Bred After 1 st TAI (%)		0%	0%	50%	
CR Heat Bred After 1 st TAI (%)		0%	0%	30%	
CR 1 st Service TAI (%)		45%	45%		
CR 2 nd + Services TAI (%)		30%	39%		
Calving Interval (mo)			14.1		
Dry Period (d)			70		

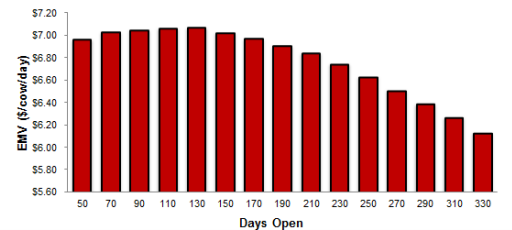
1. Productive and Economic Parameters Summary

Cows in Party All (#)		1688
Rolling Herd Average (RHA) (lb/cow/y)		30000
Milk Price (\$/cwt)		16.97
Average Value New Born (\$)		74
Heifer Replacement Value (\$)		1,288
Salvage Value (\$)		624

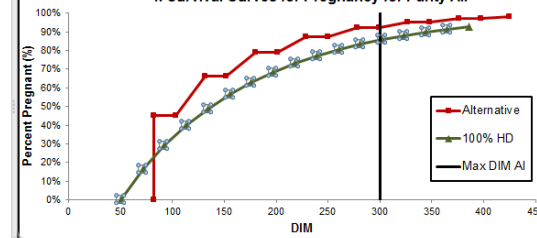
2. Reproductive Programs Summary

	Current		Alternative	Baseline
	Double-Ovsynch	Ovsynch	Double-Ovsynch	Heat Breeding
1 st Service Postpartum	82d	82d	82d	50d
2 nd and Following Services				
Voluntary Waiting Period			300d	
Maximum DIM for Breeding	82d	82d		
DIM 1st TAI	42d	49d		21d
Interbreeding Interval	0%	0%	50%	
Heat Bred Before 1 st TAI	0%	0%	33%	
CR Heat Bred Before 1 st TAI	0%	0%	50%	
Heat Bred After 1 st TAI	0%	0%	30%	
CR Heat Bred After 1 st TAI	45%	45%		
CR 1 st Service TAI	30%	39%		
CR 2 nd + Services TAI	22%	25%	15%	
21d-Pregnancy Rate	61%	61%	50%	
21d-Service Rate	38%	42%	32%	
Average CR all breedings	131	130	142	
Days Open (d)	14.0	14.0	14.7	
Projected Calving Interval (mo)	\$29.17	\$29.23		
Cost 1st Service Breeding	\$21.00	\$29.23		
Cost Resynch Breedings	\$13.04	\$13.55	\$13.06	
Cost Heat Breedings	Palpation	Ultrasound	Palpation	
Pregnancy Diagnosis Method	3.00	3.55	3.06	
Pregnancy Diagnosis Cost				

3. Expected Monetary Value (\$/cow/day) for Parity All



4. Survival Curves for Pregnancy for Parity All



Parámetros Productivos

1. Parámetros Productivos

Vacas Totales $\geq 1^{\circ}$ Lact	(N°)	400
Tasa de Descarte Involuntario	(%/Año)	14.3%
Tasa de Mortandad (Adultos)	(%/Año)	6.5%
Tasa de Nati-muertos	(%)	8.0%

2. Curvas de Lactancias

		1° Lact	2° Lact	> 2° Lact
Numero de Vacas		120	90	190
Peso (Kg/Vaca)		575	667	667
Control	DEL			
1	15	22	30	31
2	45	28	33	34
3	75	30	34	36
4	105	30	35	37
5	135	32	31	38
6	165	30	30	35
7	195	24	22	30
8	225	24	21	26
9	255	21	21	17
10	285	20	18	16
11	315	19	17	14
12	345	20	15	13
13	375	19	12	12
14	405	15	6	8
15	435	14	6	2
16	465	12	3	0
17	495	10	0	0
18	525	9	0	0
19	555	7	0	0

Parámetros Económicos

3. Parámetros Económicos

Marque si conoce los costos de Reproducción*

Precio Leche	(\$/Lt)	1.40
Alimentación Vacas Ordeño	(\$/KgMS)	0.65
Alimentación Vacas Secas	(\$/día)	4.50
Ternera recién nacida	(\$/ternera)	750
Ternero recién nacido	(\$/ternero)	200
Vaquillona de Reemplazo	(\$/Vaq)	7000
Vaca de Descarte	(\$/Vaca)	3000
Colocación de Hormonas (labor)	(\$/hr)	17.00
Detección de Celos (labor)	(\$/hr)	17.00
Inseminación (semén + labor)	(\$/Vaca)	25.00
Tasa de Interés	(%/Año)	12.0%

* Ver instrucciones.

4. Costo del Diagnóstico de Preñez

		Actual	Alternativo	100% DC
Palpación	(\$/hr)	100		100
Ultrasonido	(\$/hr)		120	
Test Sanguíneo	(\$/vaca)			

Parámetros Reproductivos

5.b. Parámetros de los Programas Reproductivos

		Actual	Alternativo	100% DC
Período de Espera Voluntario (PEV)	(días)	50	50	50
Duración del Ciclo Estral	(días)	21		
Maximo DEL para Preñarse	(días)	300		
DEL al 1º IATF	(días)	70	72	
Intervalo entre servicios	(días)	49	42	
Det. de Celos <u>antes</u> de 1º IATF	(%)	50%	60%	53%
TC c/Det. Celos <u>antes</u> de 1º IATF	(%)	33%	35%	33%
Det. de Celos <u>después</u> de 1º IATF	(%)	50%	60%	53%
TC c/Det. Celos <u>después</u> de 1º IATF	(%)	30%	30%	30%
TC 1º Servicio c/IATF	(%)	32%	35%	
TC 2º/posteriores Servicios c/IATF	(%)	28%	28%	
Intervalo entre Partos	(meses)	14.1		
Período Seco	(días)	62		

5.c. Costos de Hormonas

Hormona	\$/Frasco	Dosis Frasco
GnRH	0	0
PGF2 α (\pm eCG)	50	10
Dispositivo Intravaginal P4	200	10
Estradiol	80	100

Parámetros Reproductivos

5.d. Labores de Inyecciones y Diagnóstico de Preñez: Programa Actual

		Lun	Mar	Mie	Jue	Vie	Sab	Dom
Inyecciones	Trabajadores		2					
	hr/día		2					
	Nº Vacas		30					
Diagnóstico de Preñez	Nº Vacas		30					
	hr/día		2					

5.e. Labores de Inyecciones y Diagnóstico de Preñez: Programa Alternativo

		Lun	Mar	Mie	Jue	Vie	Sab	Dom
Inyecciones	Trabajadores		2	2				
	hr/d		2	2				
	Nº Vacas		30	30				
Diagnóstico de Preñez	Nº Vacas		30					
	hr/día		2					

5.f. Labores de Detección de Celos

		Lun	Mar	Mie	Jue	Vie	Sab	Dom
Detección de Celos	Personas	1	1	1	1	1	1	1
	hr/día	2	2	2	2	2	2	2
Diagnóstico de Preñez	Nº Vacas	30	0	0	0	0	0	0
	hr/día	2	0	0	0	0	0	0

Mostrar Resultados Según Lactancias

Todas las Lactancias ▼

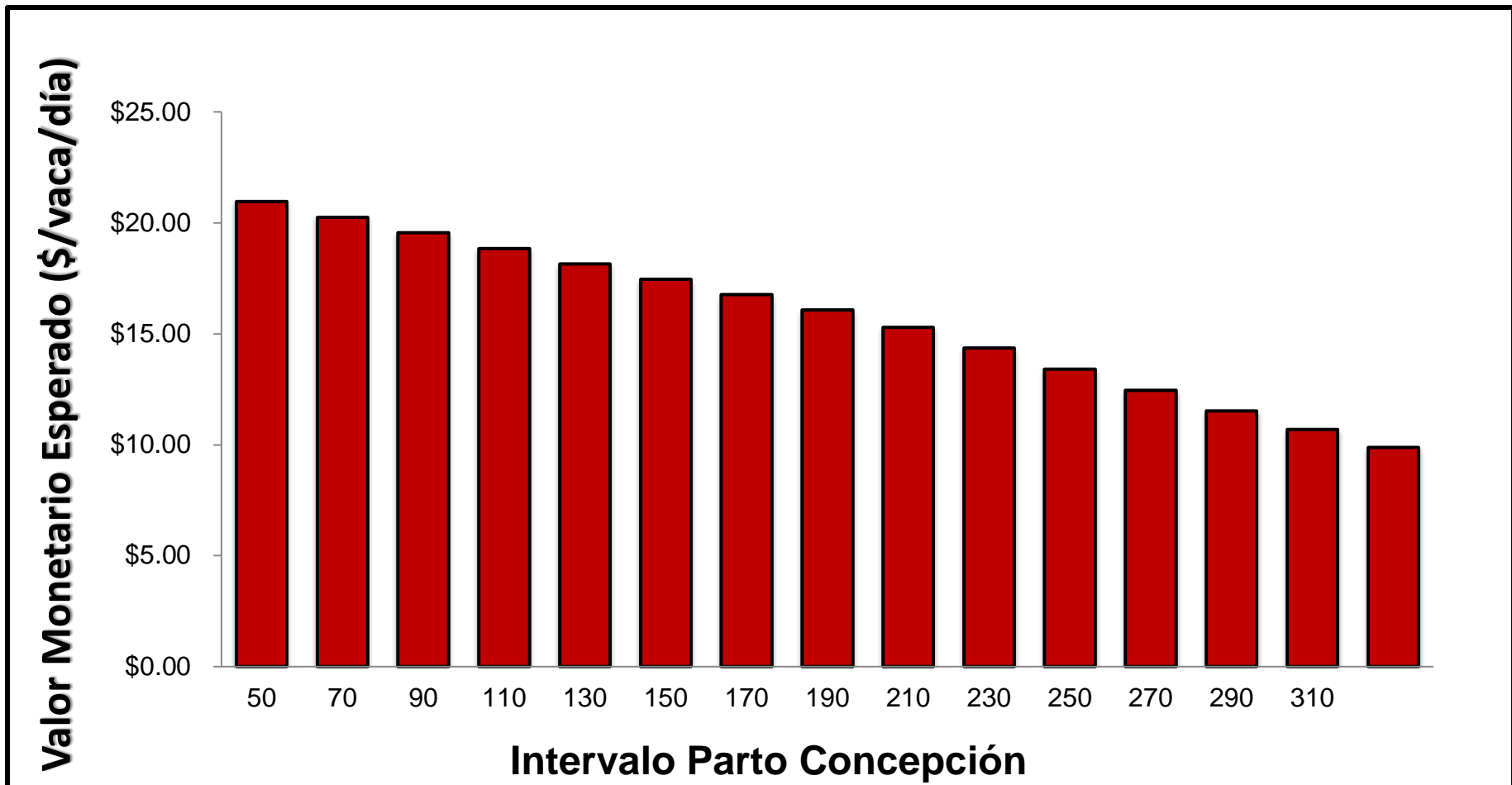
Ejecutar ANALISIS

Resultados: Preñez y Costos

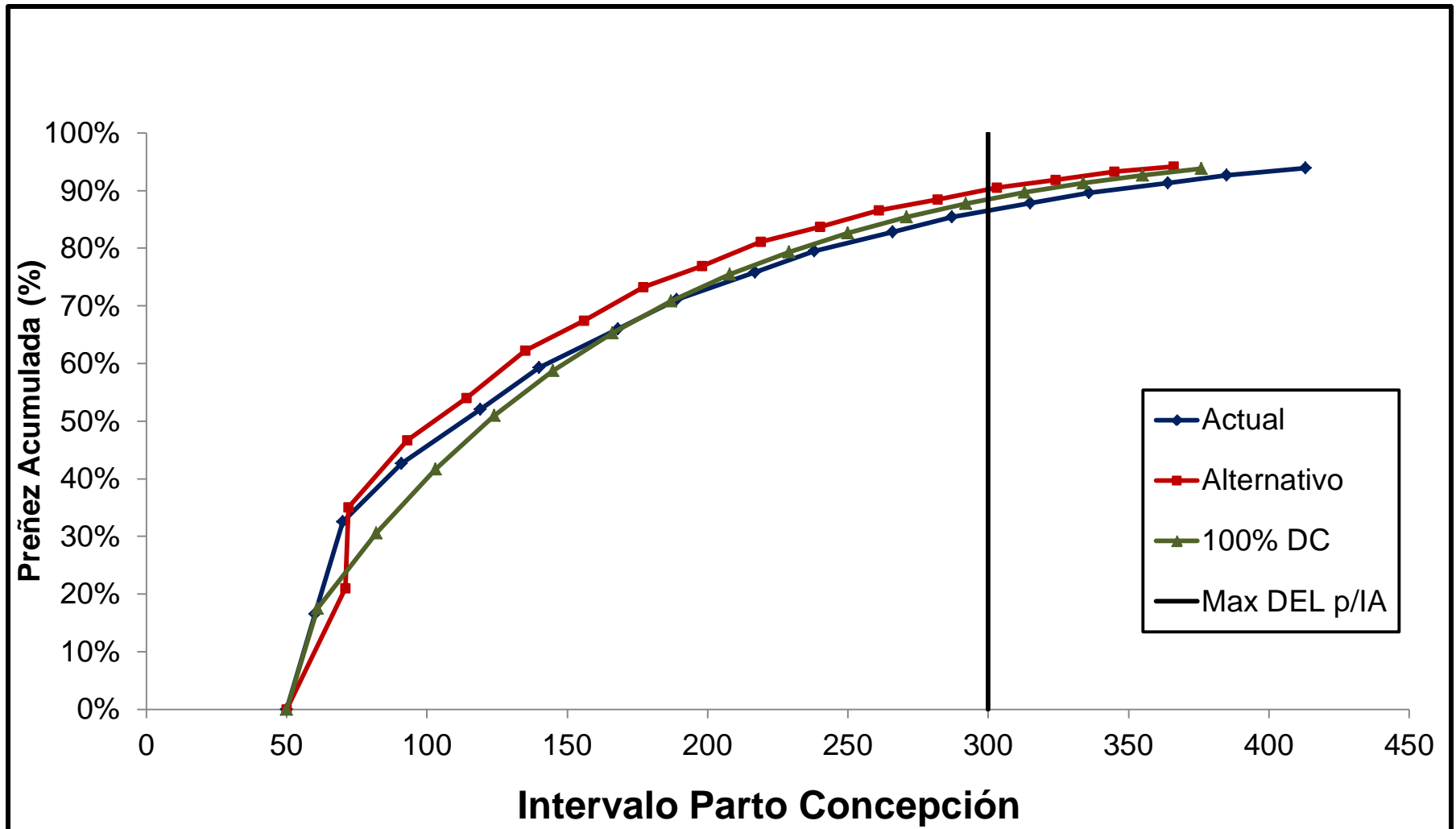
2. Resumen de Parámetros Reproductivos

	Actual	Alternativo	100% DC
1º Servicio Posparto	BE-DIV-PGF-ECP	BE-DIV-PGF-BE	Detección de Celos
2º y Sigüientes Servicios	Detección de Celos	BE-DIV-PGF-ECP	Detección de Celos
Período de Espera Voluntario	50d	50d	50d
Máximo DEL para Preñarse	300d		
DEL al 1º IATF	70d	72d	
Intervalo entre Servicios	49d	42d	21d
Det. de Celos antes de 1º IATF	50%	60%	53%
TC c/Det. Celos antes de 1º IATF	33%	35%	33%
Det. de Celos después de 1º IATF	50%	60%	53%
TC c/Det. Celos después de 1º IATF	30%	30%	30%
TC 1º Servicio c/IATF	32%	35%	
TC 2º/posteriores Servicios c/IATF	28%	28%	
% Vacas Descartadas Vacías	15%	12%	12%
Tasa de Preñez c/21 días	18%	22%	16%
Tasa de Inseminación c/21 días	61%	71%	53%
Tasa de Concepción Promedio	32%	32%	32%
Intervalo Parto-Concepción	126	123	134
Intervalo entre Partos Proyectado	14.2	13.9	14.3
Costo del 1º Servicio Sincronizado	\$62.80	\$66.40	
Costo de Sig. Servicios Sincronizados	\$31.67	\$64.13	
Costo de Servicios c/ Detección Celos	\$31.77	\$33.00	\$31.67
Método de Diagnóstico de Preñez	Palpation	Palpation	Palpation
Costo del Diagnóstico de Preñez	6.67	8.00	6.67

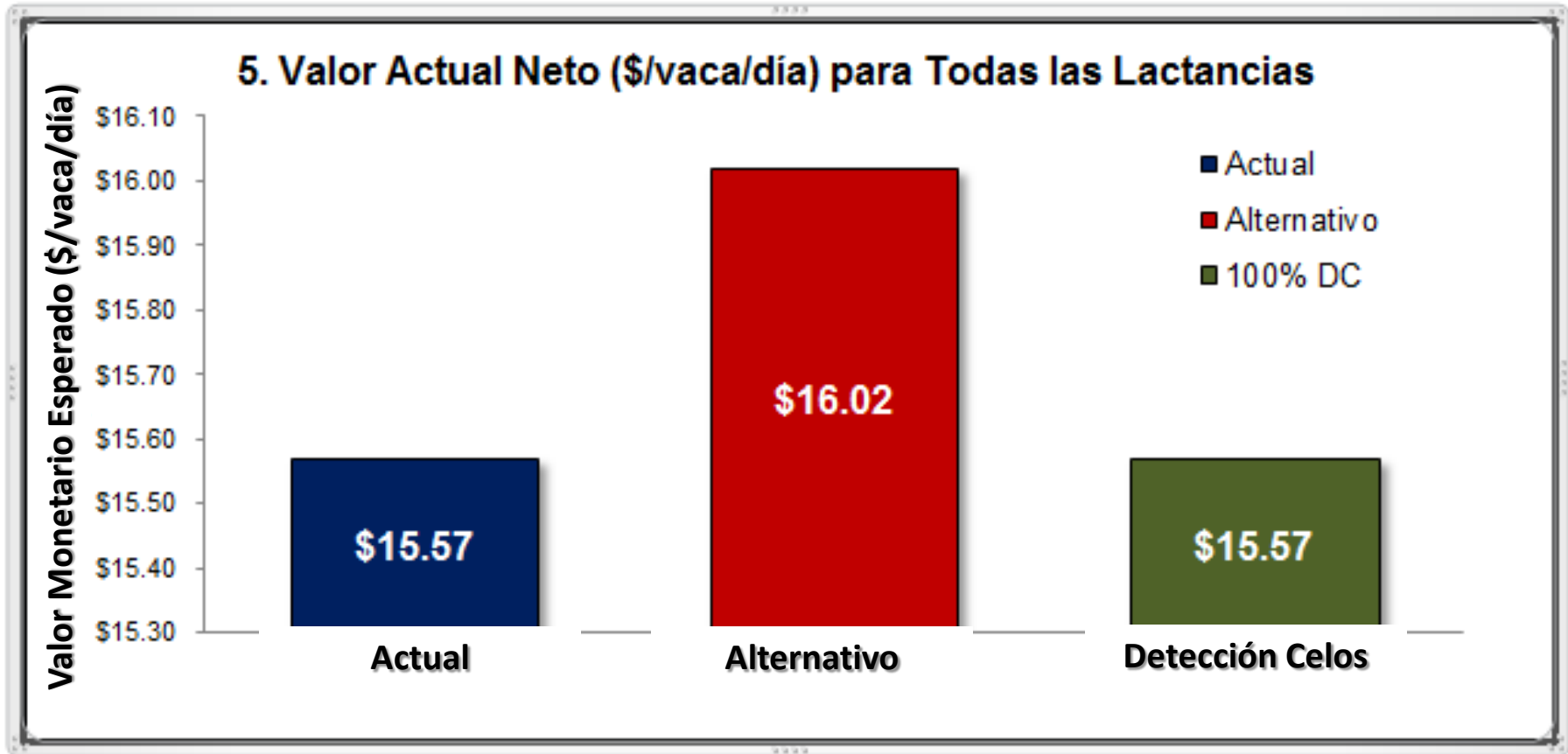
Resultados: Valor Monetario Esperado



Resultados: Preñez



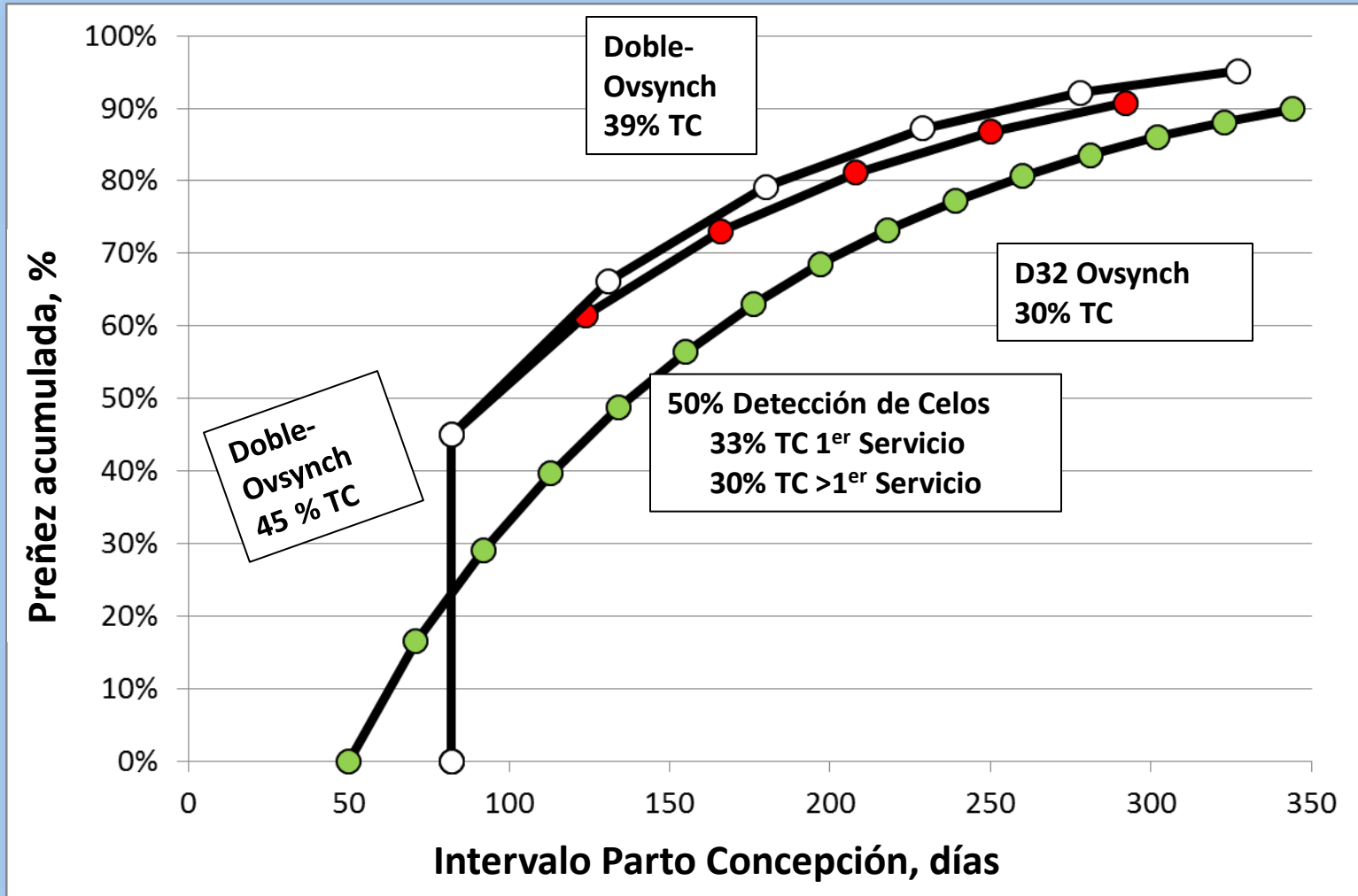
Resultados: Valor Neto



Estudio de Caso

		Programa A	Programa B	Programa C
1er Servicio		Doble OvSynch		Det. Celo
2do Servicio		D32 Resynch	Doble OvSynch	Det. Celo
Período de Espera Voluntario	d	82	82	50
Intervalo entre Servicios	d	42	49	21
Tasa de Concepción 1er Servicio	%	45	45	33
Tasa de Concepción 2do+ Servicios	%	30	38	30

Estudio de Caso



Estudio de Caso

		Programa A	Programa B	Programa C
1er Servicio		Doble OvSynch		Det. Celo
2do Servicio		D32 Resynch	Doble OvSynch	Det. Celo
21-d Tasa Preñez	%	22	25	15
21-d Tasa de Servicio	%	62	60	50
Promedio Tasa Concepción	%	38	42	32
Intervalo de Partos Proyectada	Mes	14.1	14.0	14.9

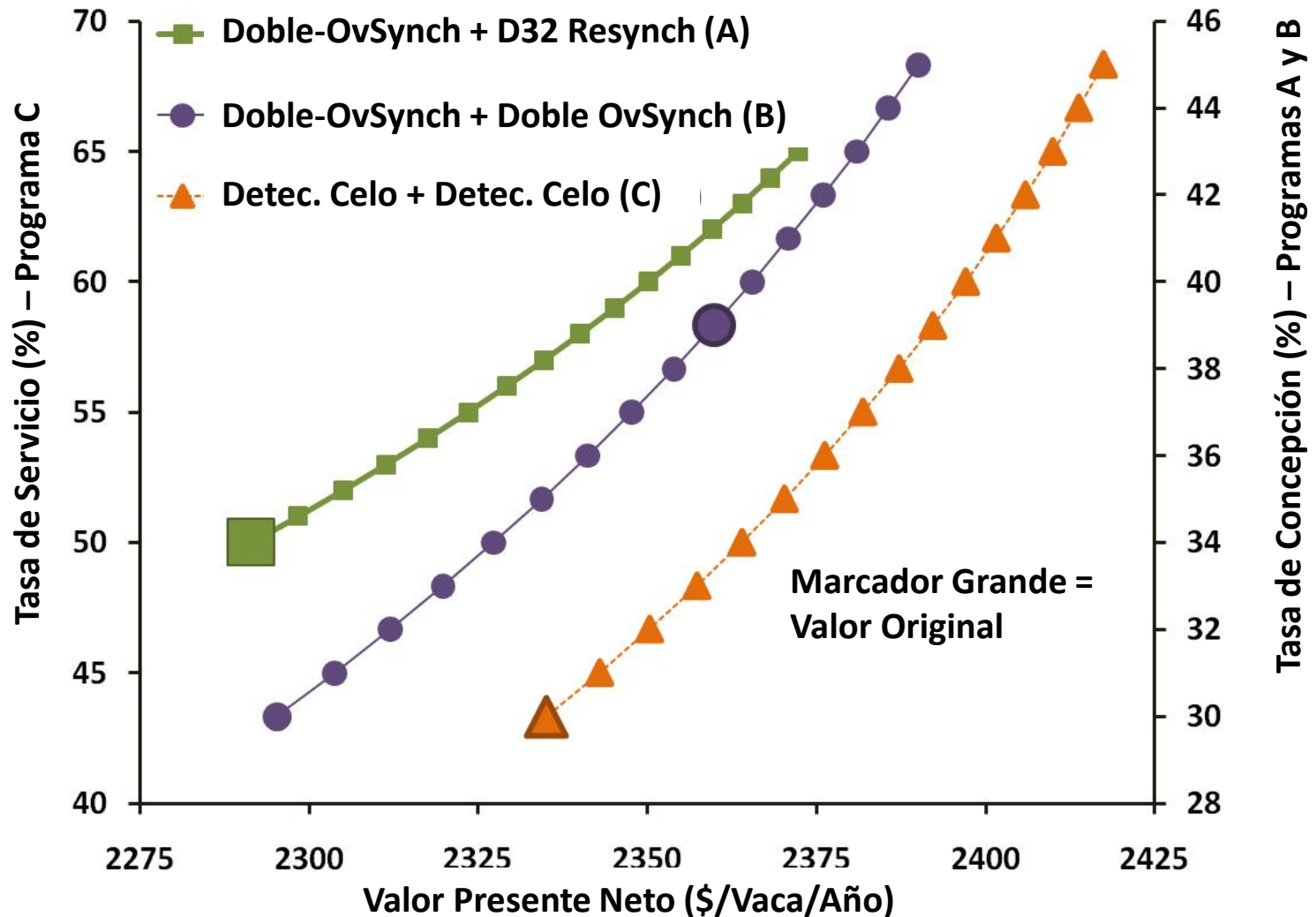
Estudio de Caso

		Programa A	Programa B	Programa C
1er Servicio		Doble OvSynch		Det. Celo
2do Servicio		D32 Resynch	Doble OvSynch	Det. Celo
Valor Presente Neto	\$/Vaca/año	\$2,335	\$2,357	\$2,291
Valor sobre 100% DC	\$/Vaca/año	\$44	\$65	--

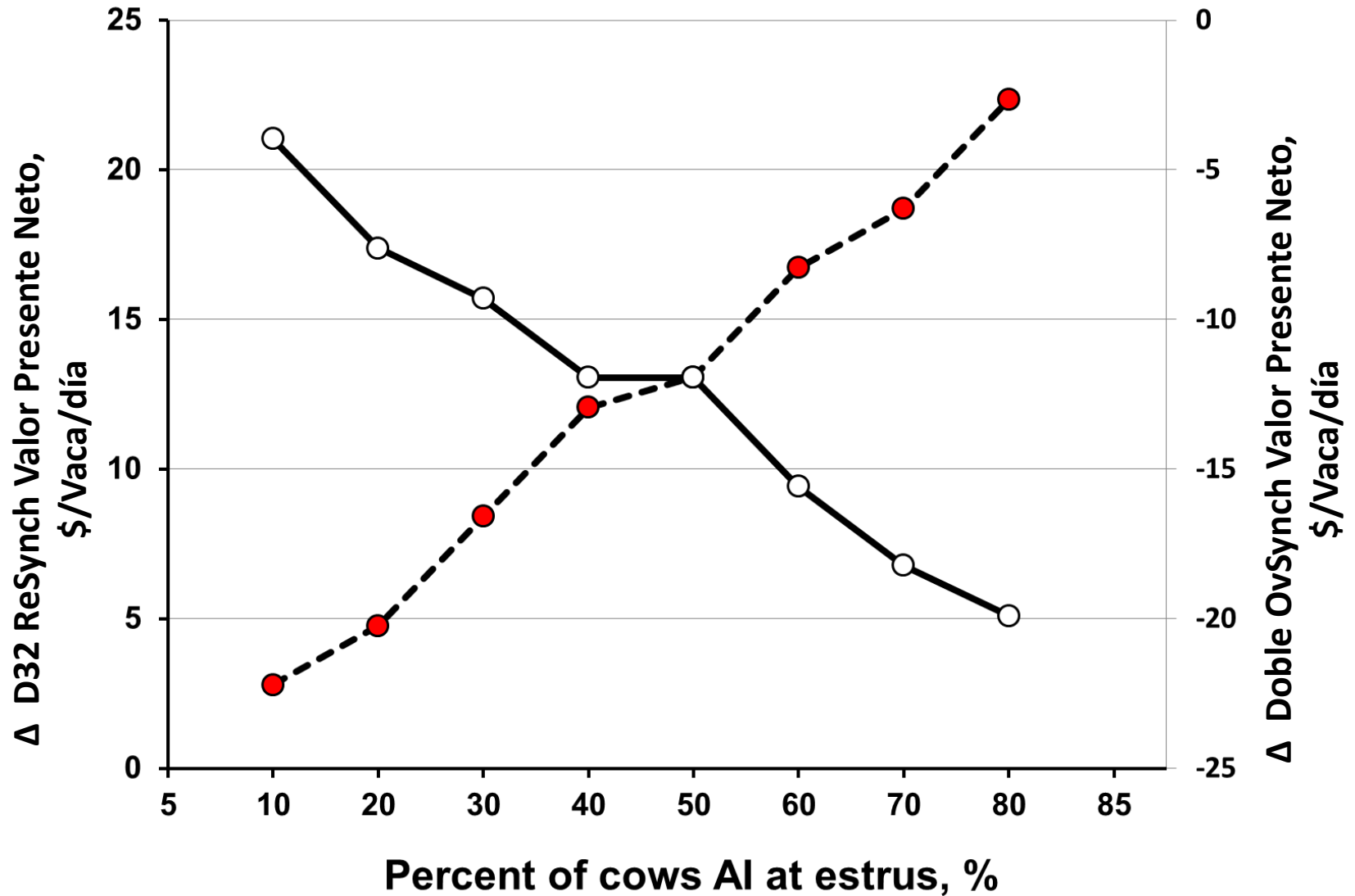
Estudio de Caso

		Programa A	Programa B	Programa C
1er Servicio		Doble OvSynch		Det. Celo
2do Servicio		D32 Resynch	Doble OvSynch	Det. Celo
Ingreso de leche sobre los costos de alimentación	\$/Vaca/año	\$2,623	\$2,633	\$2,561
Desecho y Mortandad	\$/Vaca/año	-\$288	-\$274	-\$284
Costo Reproductivo	\$/Vaca/año	-\$54	-\$58	-\$37
Valor Terneros	\$/Vaca/año	\$55	\$56	\$51

Estudio de Caso



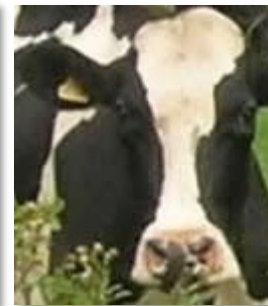
Estudio de Caso





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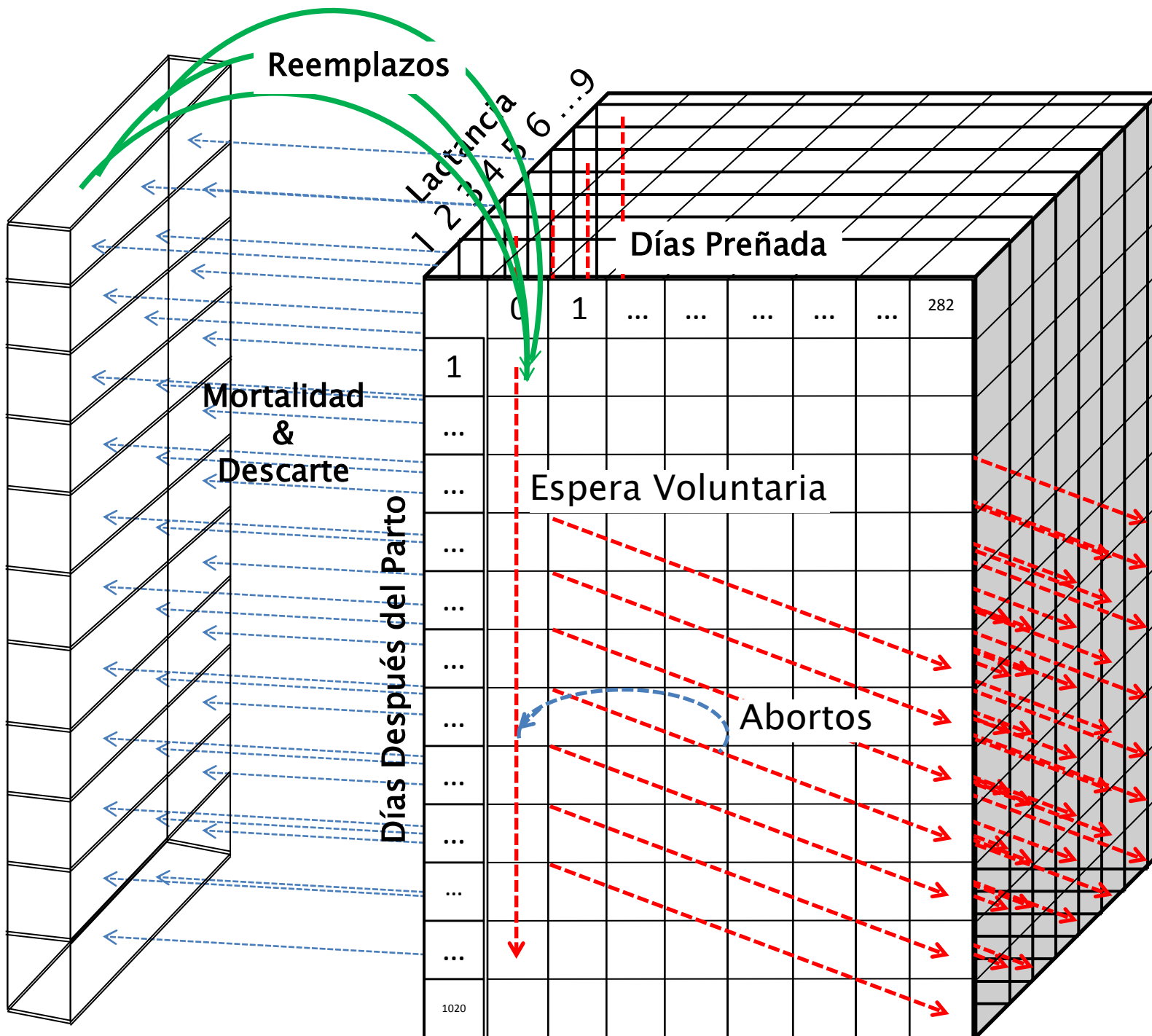
National Institute
of Food and
Agriculture



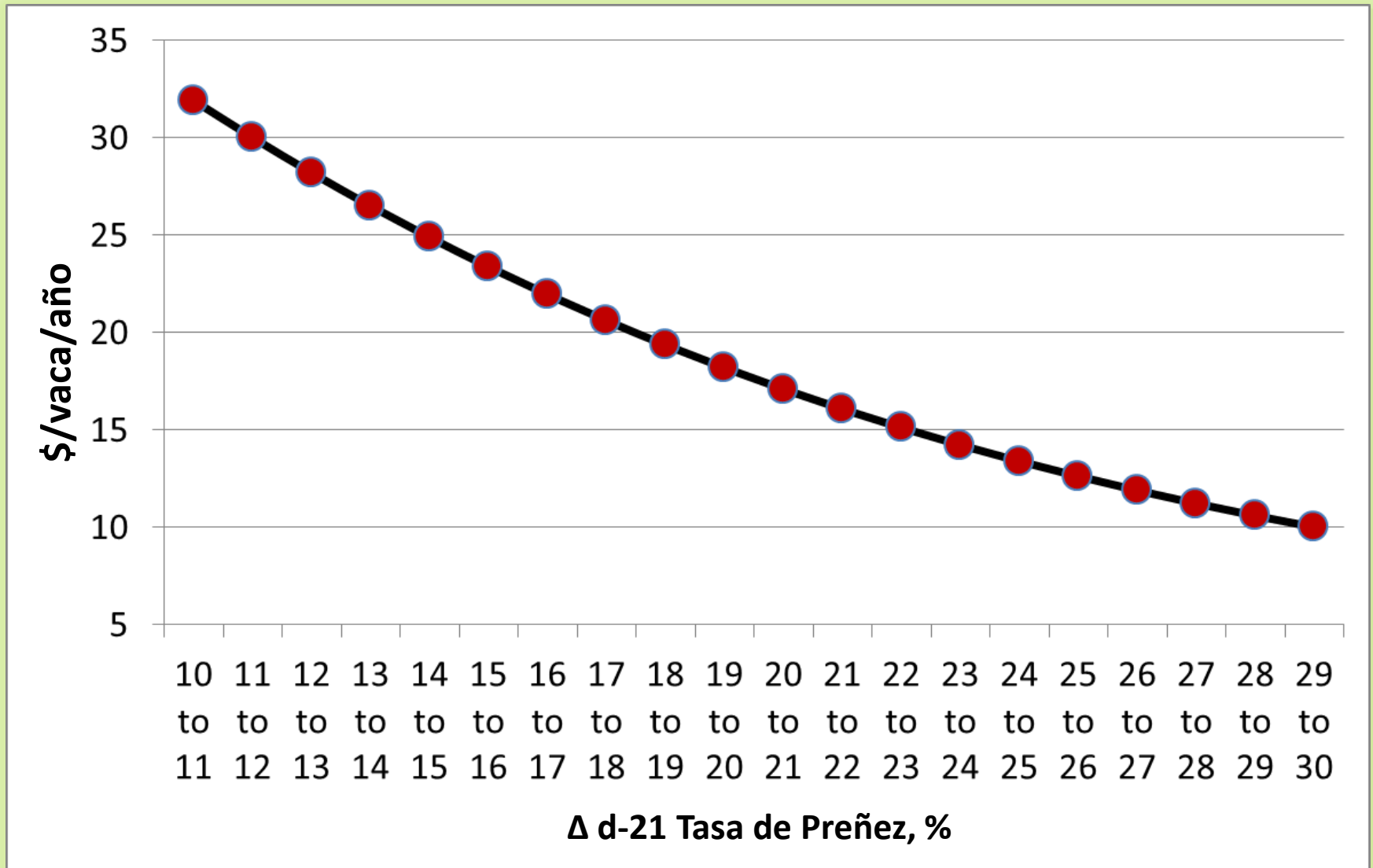
University of Wisconsin Dairy Management

Otro Enfoque

→ Predecir la estructura de un hato lechero dependiente del programa reproductivo



Resultados



Herramienta para Decisión

Dairy Reproductive Economic Analysis



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

UW
Extension



THE UNIVERSITY
of
WISCONSIN
MADISON

V.E. Cabrera

Overview Upload Repro Abort Cull Milk Economics Run Model Results Analyze

This is a Markov-chain model that simulates a dairy herd and their replacements for nine lactations: from the moment of the first calving to the ninth parturition. The model follows monthly probabilistic events of aging, culling, mortality, becoming pregnant, having an abortion, calving, and starting a next lactation. A defined lactation curve determines the milk production depending on lactation number, month in milk, and reproductive status. Cows being culled and dying are replaced the next month, so the herd population remains constant. The model performs a number of iterations until the herd population reaches a "steady state." Steady state of the herd population occurs when the proportion of cows in each specific state (lactation, month in milk, reproductive status) do not change from one iteration (month) to the next.

The model uses pre-defined (or user-defined) probabilities of reproduction, abortion, culling, and mortality to simulate a proportion of cows from one state to the next. For instance, a nonpregnant cow could become pregnant, be culled, or die and a pregnant cow could abort, be culled, die, or calve at the end of gestation. These events occur monthly for each cow in the herd. The value of a reproductive program is then calculated every month for each cow in the herd as the sum of five factors: milk income over feed cost (IOFC), culling cost, mortality cost, income from newborns (calves), and cost of the reproductive program:

Value of Reproductive Program = Income Over Feed Cost + Culling Cost + Mortality Cost + Income from Newborn + Reproductive Program Cost

Once the herd population reaches steady state, the value of the studied reproductive program is calculated as the sum product of the value of the reproductive program in each cow state times the proportion of cows in each state. Different reproductive programs yield different herd structures and consequently different economic values.

Following the tabs in this application you can define a reproductive program, edit the expected probabilities of abortion, culling, and mortality, and define other managerial and economic parameters. An option to download and manipulate these values in a spreadsheet format and then to upload it is also available.

Once you have defined the input parameters you could run the model. The results will be displayed as a "snapshot" of the expected herd at "steady state" and the monthly and total value of the reproductive program based on the five parameters defined above.

DairyMGT.info



Tools



Reproduction

Herramienta para Decisión

Overview Upload Repro Abort Milk Economics Run Model Results Analyze

Download Parameter Excel File
Download Parameters File

Upload Parameters as Excel File
Upload the Excel File: Choose File No file chosen Upload

Current File/Data Status
Using Data from Default Parameters File on Server

Herramienta para Decisión



Overview	Upload	Repro	Abort	Cull	Milk	Economics	Run Model	Results	Analyze
----------	--------	-------	-------	------	------	-----------	-----------	---------	---------

Month in Milk	Lactation 1		Lactation 2		Lactation 3		Lactation 4		Lactation 5		Lactation 6		Lactation 7		Lactation 8		Lactation 9	
	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo	Preg Per Month (%/mo)	Cost Per Month \$/cow/mo
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
3	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
4	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
5	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
6	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
7	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
8	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
9	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
10	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
11	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25	18	25
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Decision Criteria for Reproductive Failure Culling

Month in lactation (threshold) to stop reproductive services (MIM)

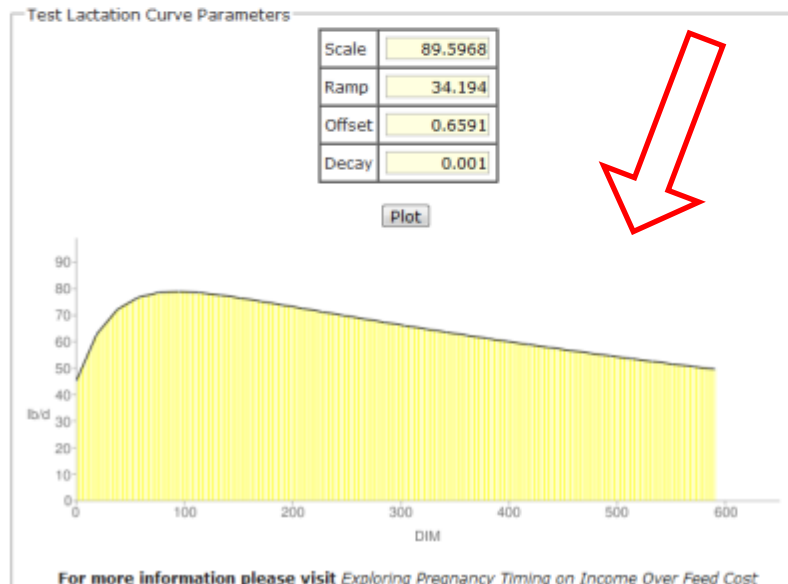
Minimum amount of milk (threshold) produced (lb/cow/day)

Herramienta para Decisión

Overview Upload Repro Abort Cull Milk Economics Run Model Results Analyze

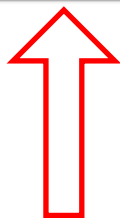
MilkBot Lactation Curves Parameters by Lactation <i>Milkbot</i>				
	a=Scale	b=Ramp	c=Offset	d=Decay
Lactation 1	66.4242290	14.6841	-2.4854	0.001005
Lactation 2	107.669823	16.2648	0.0147	0.001757
Lactation 3	132.005066	23.2079	2.5848	0.001922
Lactation 4	132.005066	23.2079	2.5848	0.001922
Lactation 5	132.005066	23.2079	2.5848	0.001922
Lactation 6	132.005066	23.2079	2.5848	0.001922
Lactation 7	132.005066	23.2079	2.5848	0.001922
Lactation 8	132.005066	23.2079	2.5848	0.001922
Lactation 9	132.005066	23.2079	2.5848	0.001922

Month in Pregnancy	Decrease in Milk
1	0
2	0
3	0
4	0
5	5
6	10
7	15
8	30
9	45



Herramienta para Decisión

Overview	Upload	Repro	Abort	Cull	Milk	Economics	Run Model	Results	Analyze
Parameters									
Body Weight of Lactating Cows	<input type="text" value="1400"/>	lb/animal	<i>Average Weight of Lactating Animals</i>						
Milk FAT Content	<input type="text" value="3.5"/>	%	<i>Average Butterfat on Milk</i>						
Milk Price	<input type="text" value="0.15"/>	\$/lb milk	<i>Average Price Received</i>						
Feed Price	<input type="text" value="0.1"/>	\$/lb feed	<i>Average Price Received</i>						
Heifer Replacement Value	<input type="text" value="1200"/>	\$/heifer	<i>Average Price paid for Pregnant Heifer</i>						
Salvage Value of Culling Animal	<input type="text" value="600"/>	\$/cow	<i>Average Value Received for culled cow</i>						
Born Calf Price	<input type="text" value="200"/>	\$/animal	<i>Average Value of Newborn</i>						
Time for Dry-Off	<input type="text" value="7"/>	months	<i>Cow will not produce after N months</i>						



Herramienta para Decisión

Dairy Reproductive Economic Analysis



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

UW
Extension



THE UNIVERSITY
of
WISCONSIN
MADISON

V.E. Cabrera

Overview

Upload

Repro

Abort

Cull

Milk

Economics

Run Model

Results

Analyze

Number of Cows *Lactating & Dry*

Run Model

Dr. Victor E. Cabrera
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UW-Extension, University of Wisconsin-Madison
[DairyMGT](#)

Herramienta para Decisión

Overview Upload Repro Abort Cull Milk Economics Run Model Results Analyze

Total Number of Cows	100
Iterations Performed	737
Reached Steady State	YES

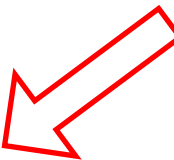
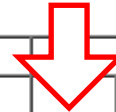


	Total Revenues & Costs				
	IOFC	Cull	Repro	Calves	Net Return
\$/herd/month	15128.81	-1353.02	-932.8	1048.08	13891.07
\$/herd/day	504.29	-45.1	-31.09	34.94	463.04
\$/cow/year	1840.67	-164.62	-113.49	127.52	1690.08



Herramienta para Decisión

Month in Milk	Month in Pregnancy										Revenues & Costs (\$)				
	0	1	2	3	4	5	6	7	8	9	Cull Cows	IOFC	Cull	Repro	Calves
	Lactation 1														
1	3.54										0.14	422.47	-69.93	0.00	0.00
2	3.39										0.09	489.30	-45.44	84.80	0.00
3	2.70	0.59									0.06	466.27	-27.96	67.62	0.00
4	2.17	0.48	0.59								0.05	438.04	-24.08	54.34	0.00
5	1.77	0.38	0.47	0.57							0.04	410.78	-20.87	44.17	0.00
6	1.45	0.31	0.38	0.46	0.55						0.04	385.40	-19.18	36.26	0.00
7	1.20	0.26	0.31	0.37	0.44	0.54					0.04	358.39	-18.42	29.94	0.00
8	0.99	0.21	0.25	0.30	0.35	0.43	0.53				0.04	330.60	-17.73	24.73	0.00
9	0.82	0.17	0.21	0.24	0.29	0.35	0.43	0.53			0.04	302.77	-17.76	20.42	0.00
10	0.67	0.14	0.17	0.20	0.24	0.28	0.34	0.42	0.52		0.04	190.20	-18.69	16.84	0.00
11	0.55	0.12	0.14	0.17	0.20	0.23	0.28	0.34	0.42	0.52	0.58	102.51	-20.39	13.84	103.04
12	0.01		0.12	0.14	0.16	0.19	0.23	0.28	0.34	0.41	0.03	29.79	-8.72	0.00	82.79
13	0.01			0.11	0.13	0.16	0.19	0.23	0.27	0.33	0.03	13.03	-6.91	0.00	66.52
14	0.01				0.11	0.13	0.16	0.19	0.22	0.27	0.02	0.47	-5.37	0.00	54.08
15	0.00					0.11	0.13	0.15	0.19	0.22	0.01	-8.44	-4.10	0.00	44.37
16	0.00						0.11	0.13	0.15	0.18	0.01	-14.17	-3.05	0.00	36.57
17	0.00							0.10	0.13	0.15	0.00	-17.51	-2.18	0.00	30.16
18	0.00								0.10	0.12	0.00	-19.11	-1.41	0.00	24.85
19	0.00									0.10	0.00	-8.57	-0.68	0.00	20.41
20											0.00	0.00	0.00	0.00	0.00
21											0.00	0.00	0.00	0.00	0.00
22											0.00	0.00	0.00	0.00	0.00
23											0.00	0.00	0.00	0.00	0.00
24											0.00	0.00	0.00	0.00	0.00
25											0.00	0.00	0.00	0.00	0.00



Herramienta para Decisión

Overview

Upload

Repro

Abort

Cull

Milk

Economics

Run Model

Results

Analyze

Find the economic value of improving reproductive performance

	21-d Preg Risk (%)	Repro Cost (\$/cow/mo)
Current Repro Program	18	25
Goal Repro Program	21	25

Analyze

Analysis Results

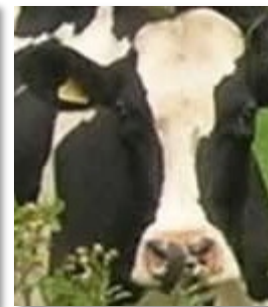
Program	21-d Preg Risk (%)	Repro Cost (\$/cow/mo)	IOFC (\$/cow/year)	Cull (\$/cow/year)	Repro (\$/cow/year)	Calves (\$/cow/year)	Net Return (\$/cow/year)
Current Repro Program	18	25	1840.67	-164.62	-113.49	127.52	1690.08
Goal Repro Program	21	25	1873.33	-160.64	-103.79	135.83	1744.72

Economic value of improving pregnancy risk from 18% to 21% is \$54.64/cow/year.



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