El Valor Económico de Mejorar la Tasa de Preñez de 21 días

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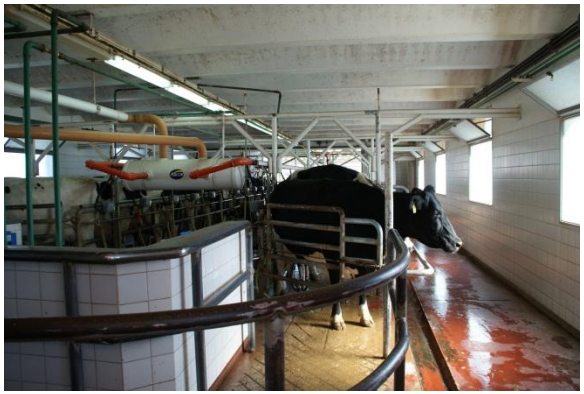
IV Jornada DAIRYTECH 2011, Rosario Argentina

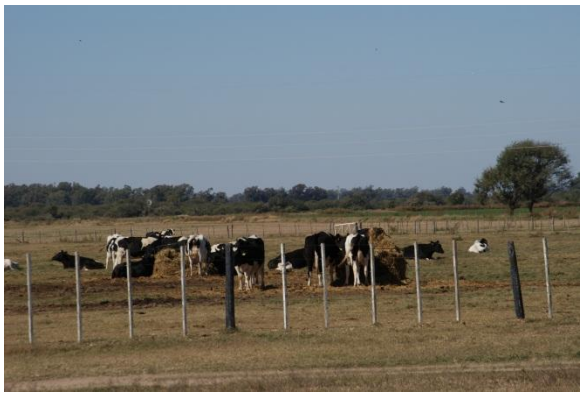
Introducción

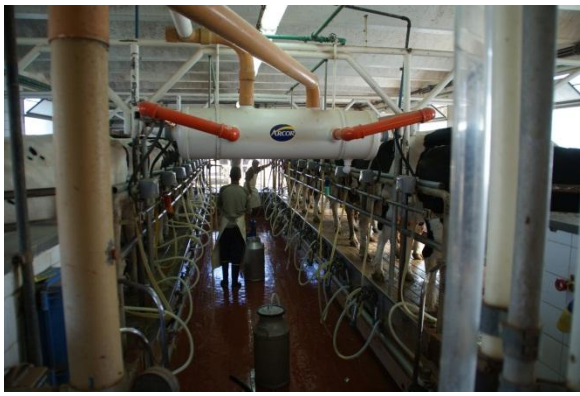
- Productores no saben el valor de mejorar la tasa de preñez de 21 días

Introducción

- Valor económico de la tasa de preñez de 21 días es especifico para cada tambo



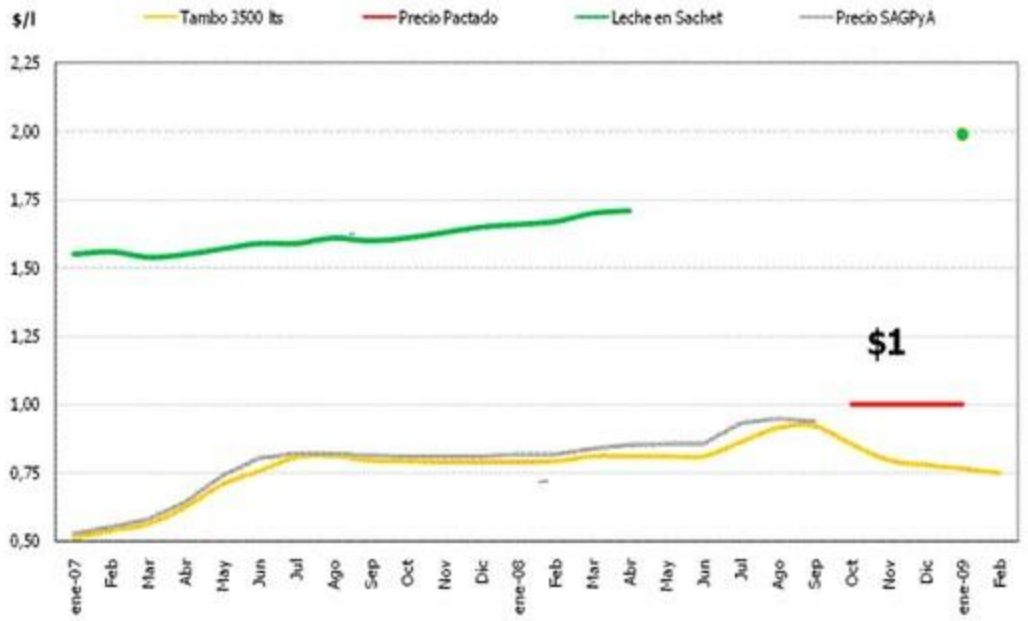


- Productores no saben el valor de mejorar la tasa de preñez de 21 días

Introducción

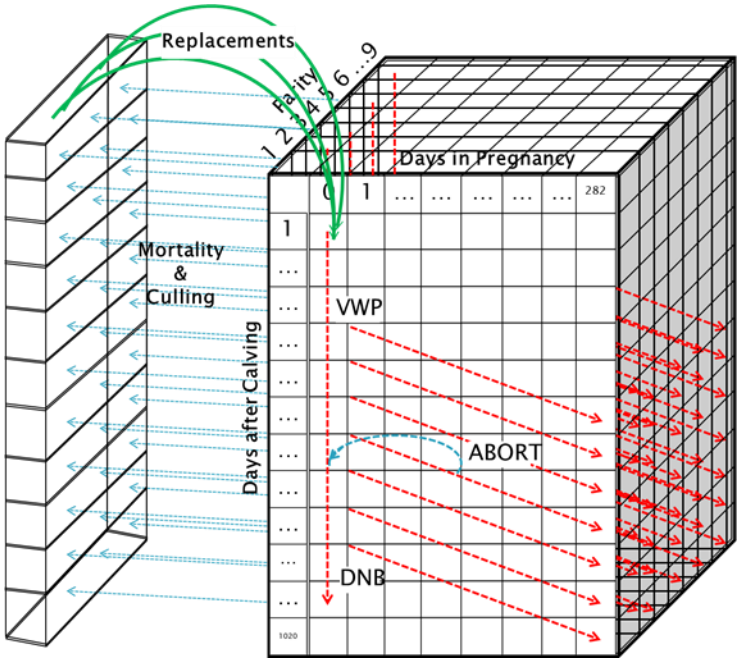
- Valor económico depende de las condiciones de mercado

Ingresos con 0,75 $/l	
Leche	**1938**
Hacienda	104
Total	**2042**
Gastos variables	
Alimentación	**1256**
Personal	155
Ordeñe	80
Mejoramiento	17
Sanidad	43
Guachera	101
Recria	335
Total	**1987**
Margen Bruto	**55**
Gastos de administración y estructura	200
Resultado final	**-145**



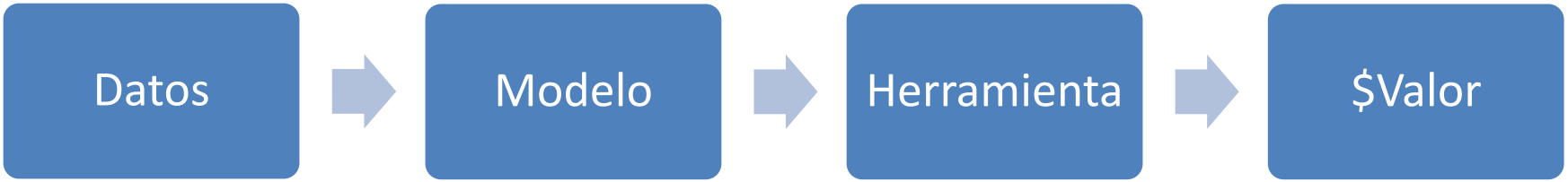
Enfoque

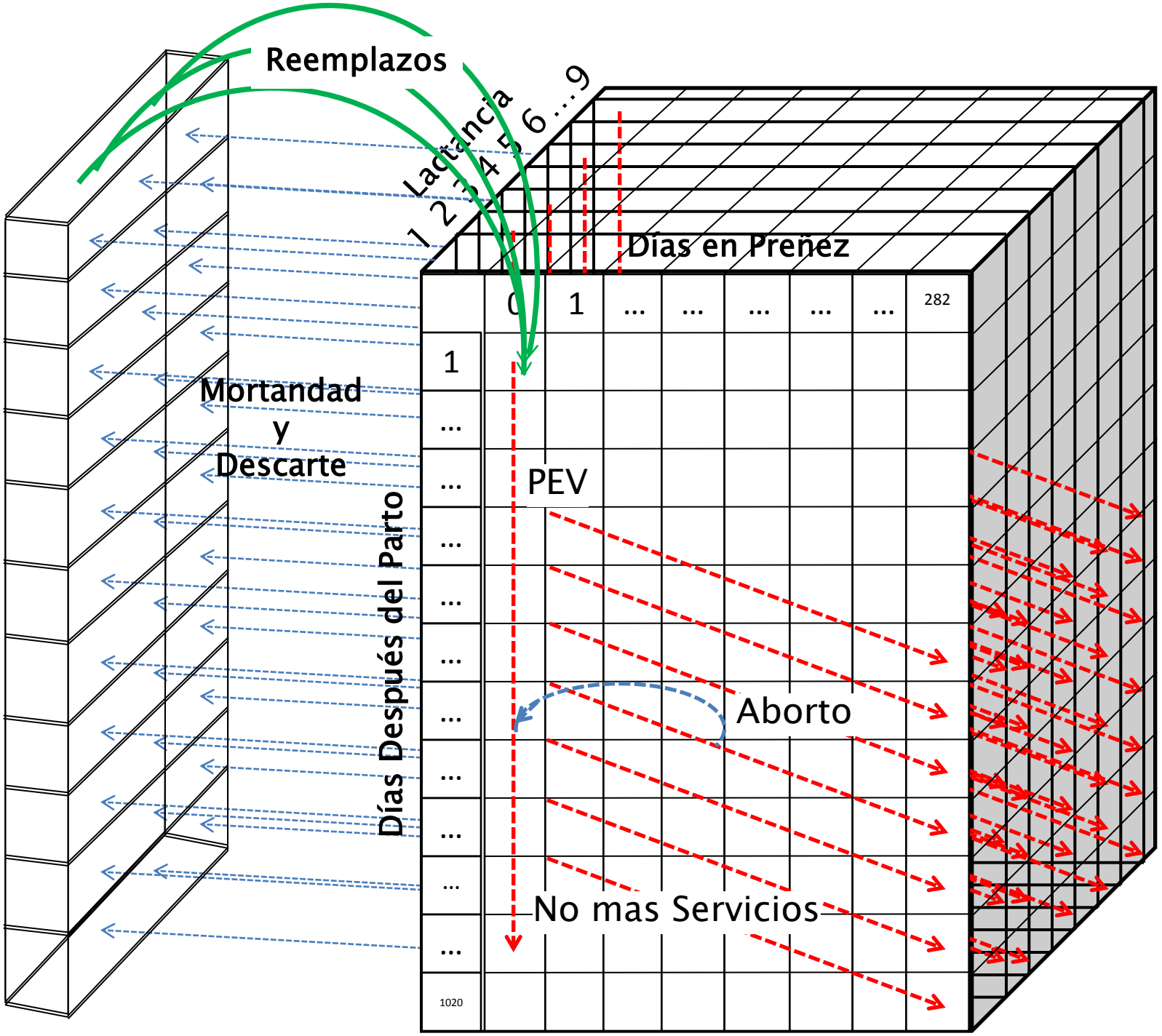
- Predecir la estructura del hato resultante de una tasa de preñez de 21 días



Objetivo

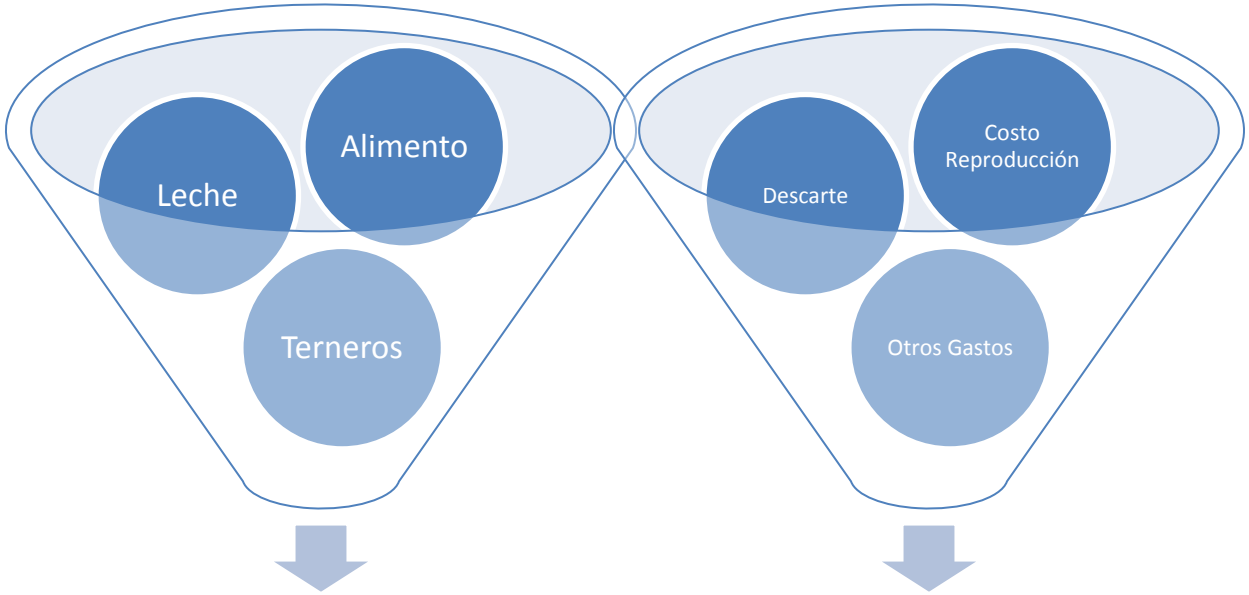
- Desarrollar una herramienta de decisión para evaluar el valor económico de cambios en la tasa de preñez de 21 días




Reemplazos
Lactancia
1 2 3 4 5 6 ...9
Días en Preñez
0
1
...
...
...
...
...
282
1
...
...
...
...
...
...
...
...
...
...
1020
Días Después del Parto
Mortandad
y
Descarte
PEV
Aborto
No mas Servicios

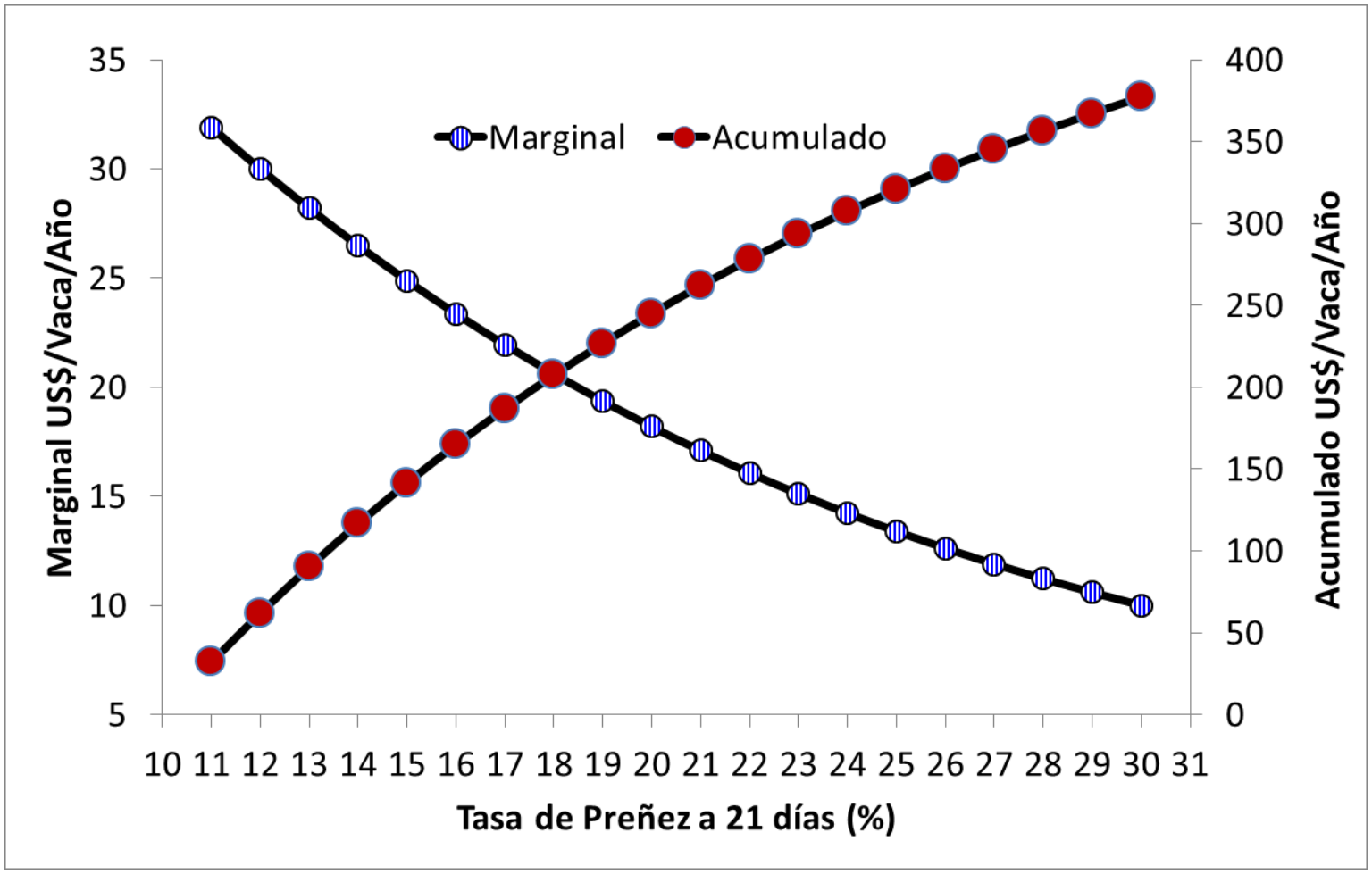
Enfoque

- Agregar el valor económico de todos los animales (o proporciones de animales en el hato)



$ Valor de la Tasa de Preñez de 21 Días

Algunos Resultados

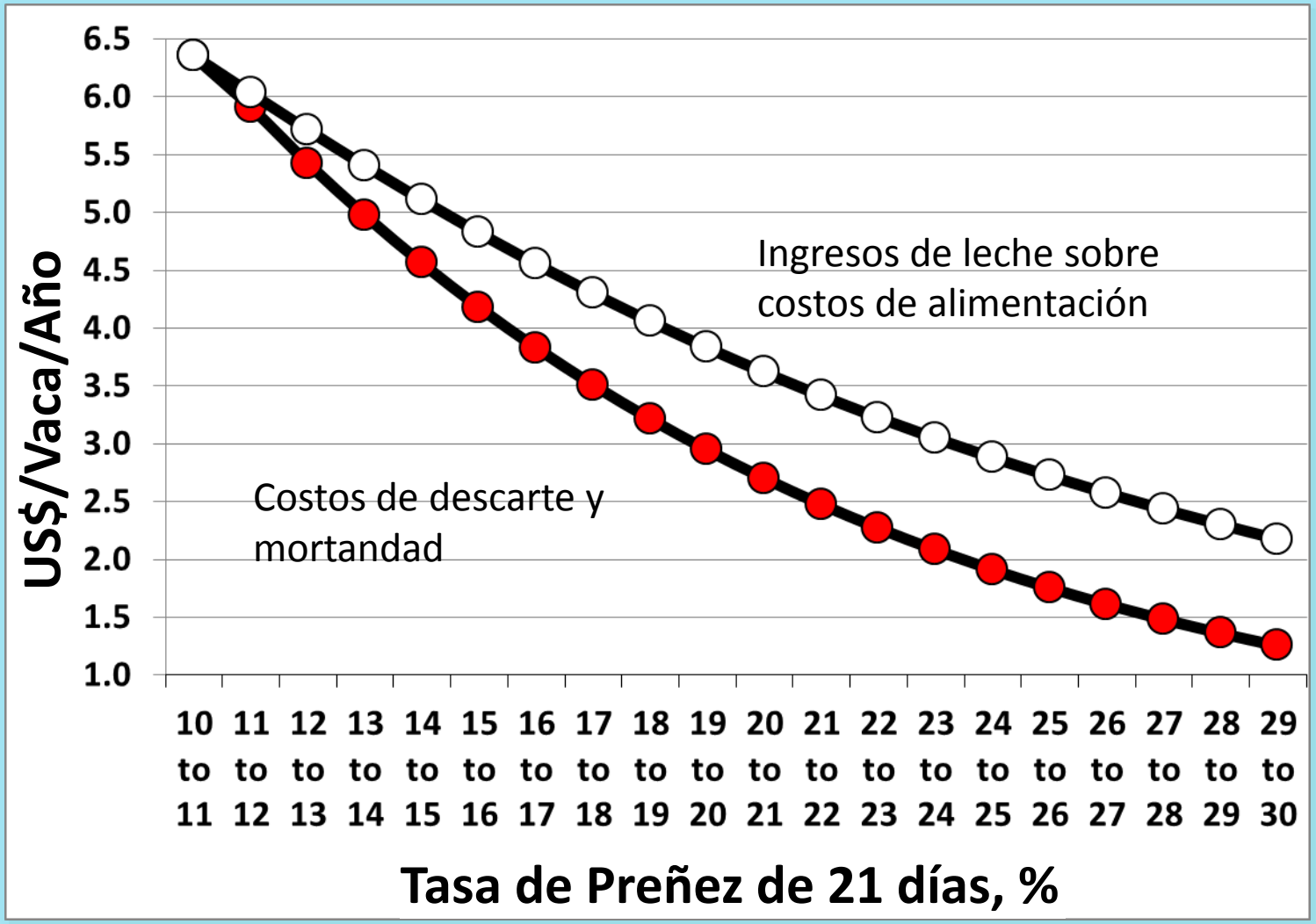


Algunos Resultados

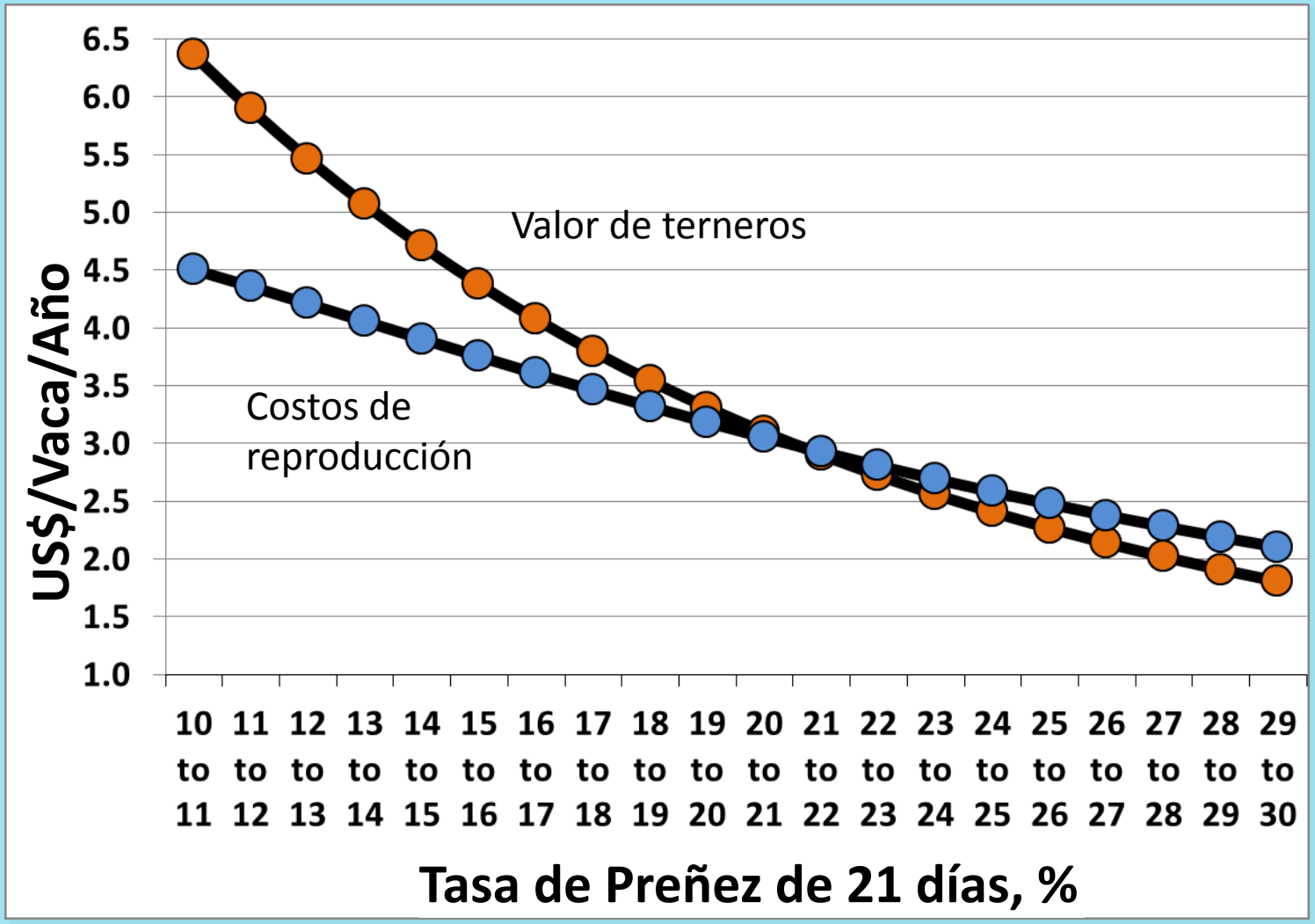
GOL Tasa de Preñez de 21 días (%)	ACTUAL Tasa de Preñez de 21 días (%)																			
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
11	32																			
12	62	30																		
13	90	58	28																	
14	117	85	55	26																
15	141	110	80	51	25															
16	165	133	103	75	48	23														
17	187	155	125	97	70	45	22													
18	207	176	145	117	91	66	43	21												
19	227	195	165	137	110	85	62	40	19											
20	245	213	183	155	128	103	80	58	38	18										
21	262	230	200	172	145	121	97	75	55	35	17									
22	278	246	216	188	162	137	113	91	71	51	33	16								
23	293	261	231	203	177	152	128	106	86	66	48	31	15							
24	307	276	246	217	191	166	143	121	100	81	62	45	29	14						
25	321	289	259	231	204	179	156	134	113	94	76	59	43	28	13					
26	333	302	272	243	217	192	169	147	126	107	89	71	55	40	26	13				
27	345	313	283	255	229	204	181	159	138	119	100	83	67	52	38	25	12			
28	357	325	295	266	240	215	192	170	149	130	112	95	78	63	49	36	23	11		
29	367	335	305	277	251	226	202	180	160	140	122	105	89	74	60	46	34	22	11	
30	377	345	315	287	261	236	212	190	170	150	132	115	99	84	70	56	44	32	21	10

Valor(US$/Vaca/Ano) de Mejorar Preñez

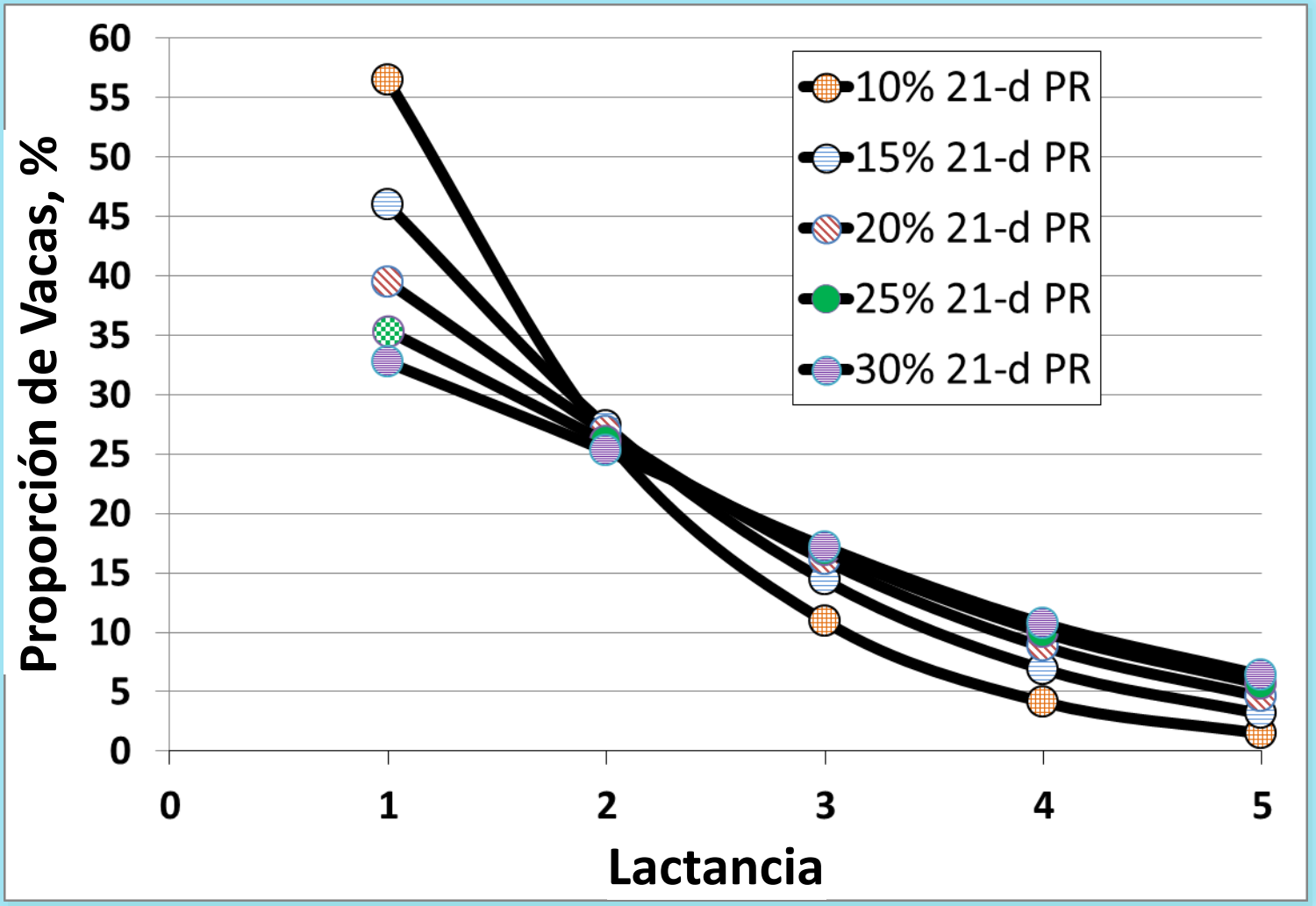
Factores mas Importantes



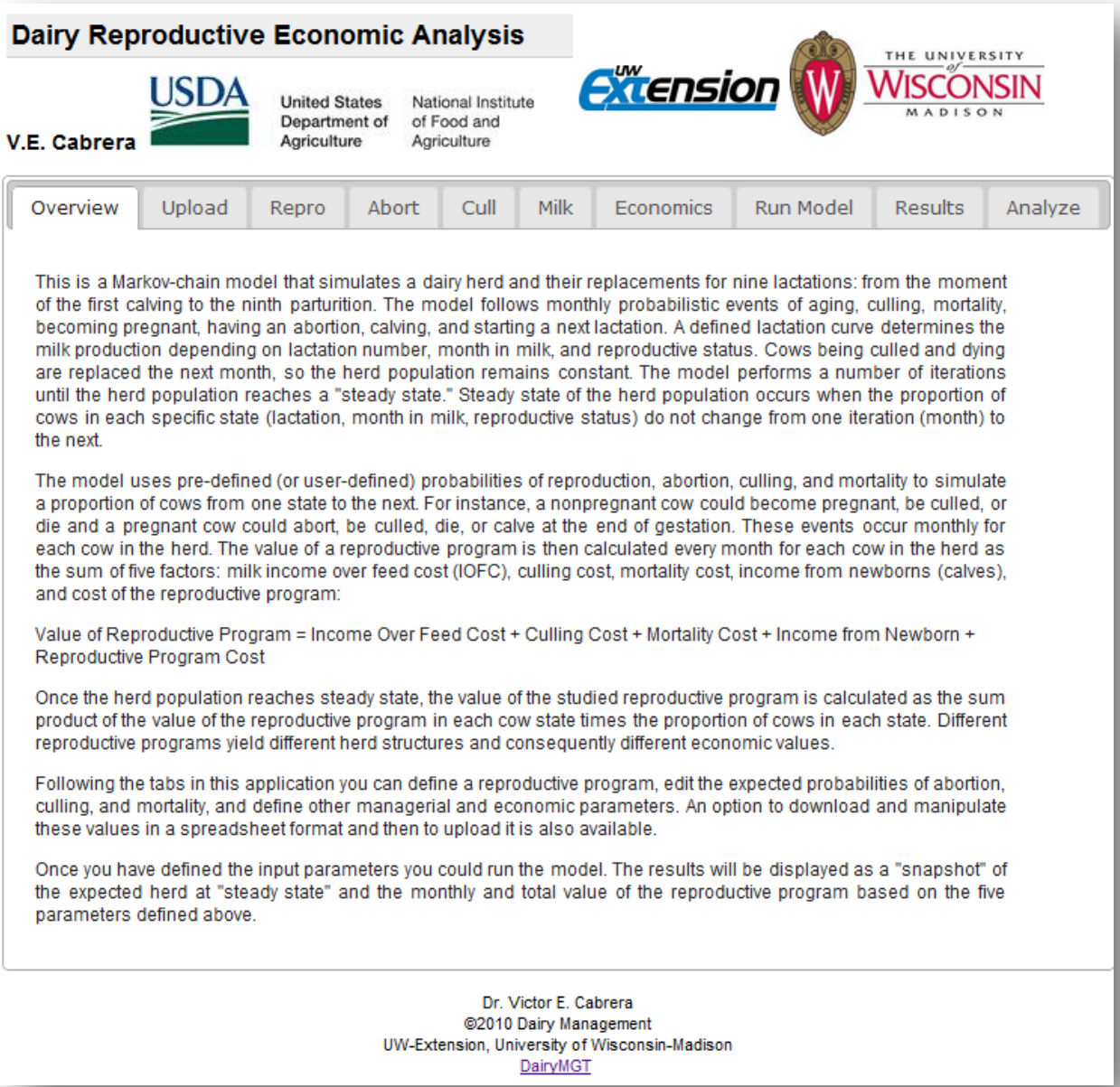
Factores mas Importantes



Consideraciones Adicionales



Herramienta de Decisión

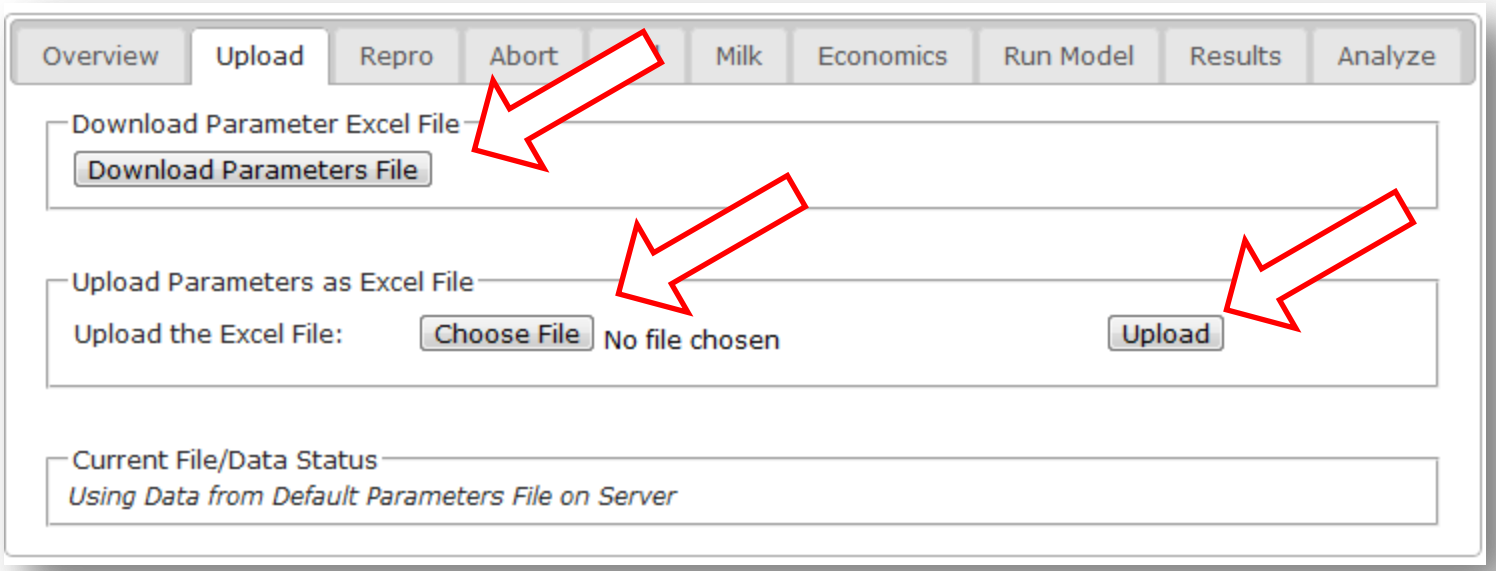


DairyMGT.info

Tools

Reproduction

Herramienta de Decisión



Herramienta de 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)	11
Minimum amount of milk (threshold) produced (lb/cow/day)	50

Herramienta de Decisión

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

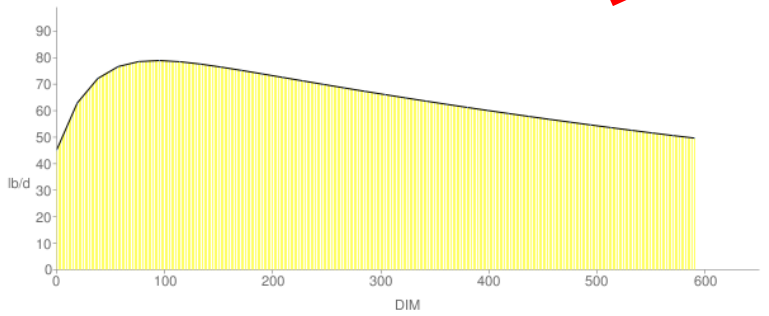
MilkBot Lactation Curves Parameters by Lactation *Milkbot*				
	a=Scale	b=Ramp	c=Offset	d=Decay
Lactation 1	66.4242290	14.6841	-2.4854	0.001005
Lactation 2	107.669823	16.2648	0.0147	0.001757
Lactation 3	132.005066	23.2079	2.5848	0.001922
Lactation 4	132.005066	23.2079	2.5848	0.001922
Lactation 5	132.005066	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

Test Lactation Curve Parameters

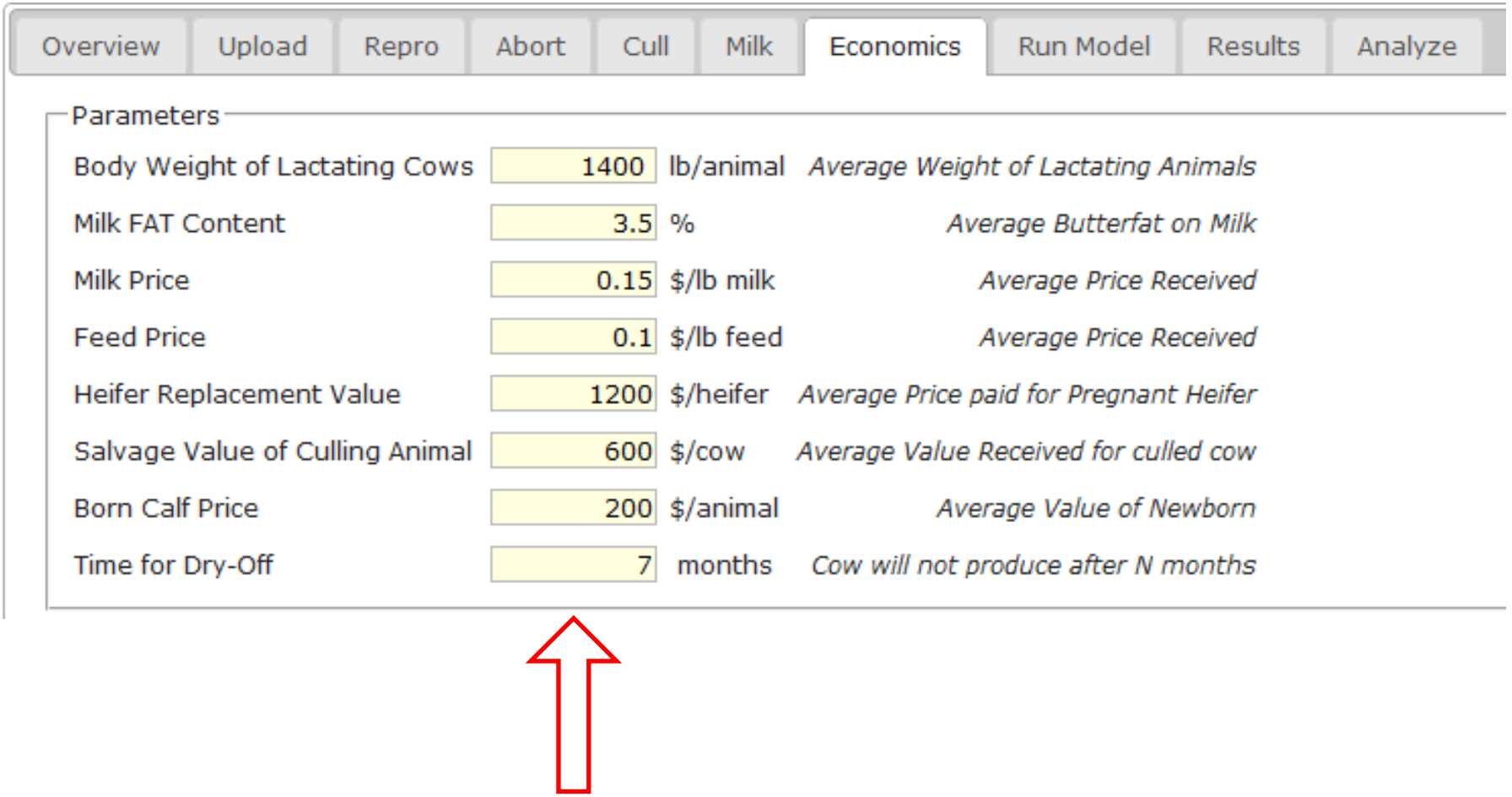
Scale	89.5968
Ramp	34.194
Offset	0.6591
Decay	0.001

Plot

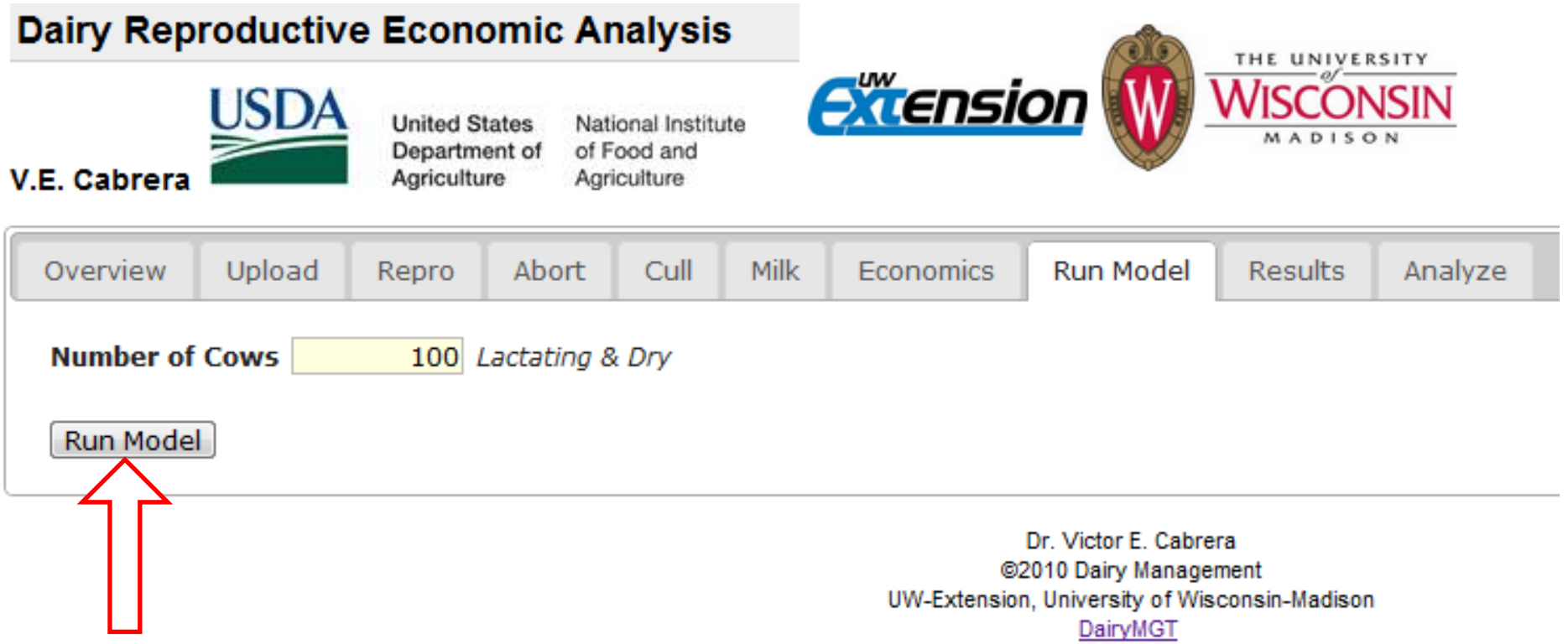


For more information please visit *Exploring Pregnancy Timing on Income Over Feed Cost*

Herramienta de Decisión



Herramienta de Decisión



Herramienta de 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 de Decisión

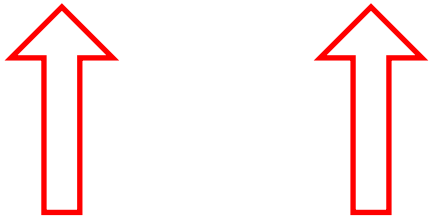
Month in Milk	Month in Pregnancy												Revenues & Costs ($)			
	0	1	2	3	4	5	6	7	8	9						
	Lactation 1										Cull Cows		IOFC	Cull	Repro	Calves
1	3.54										0.14		422.47	-69.93	0.00	0.00
2	3.39										0.09		489.30	-45.44	84.80	0.00
3	2.70	0.59									0.06		466.27	-27.96	67.62	0.00
4	2.17	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 de 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

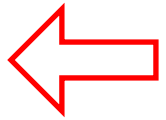


Analyze

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.



Una Investigación

A Daily Herd Markov-Chain Model to Study the Reproductive and Economic Impact of Reproductive Programs Combining Timed Artificial Insemination and Estrous Detection

J. O. Giordano, A. S. Kalantari, P. M. Fricke, M. C. Wiltbank, and V. E. Cabrera[1]
Department of Dairy Science, University of Wisconsin-Madison

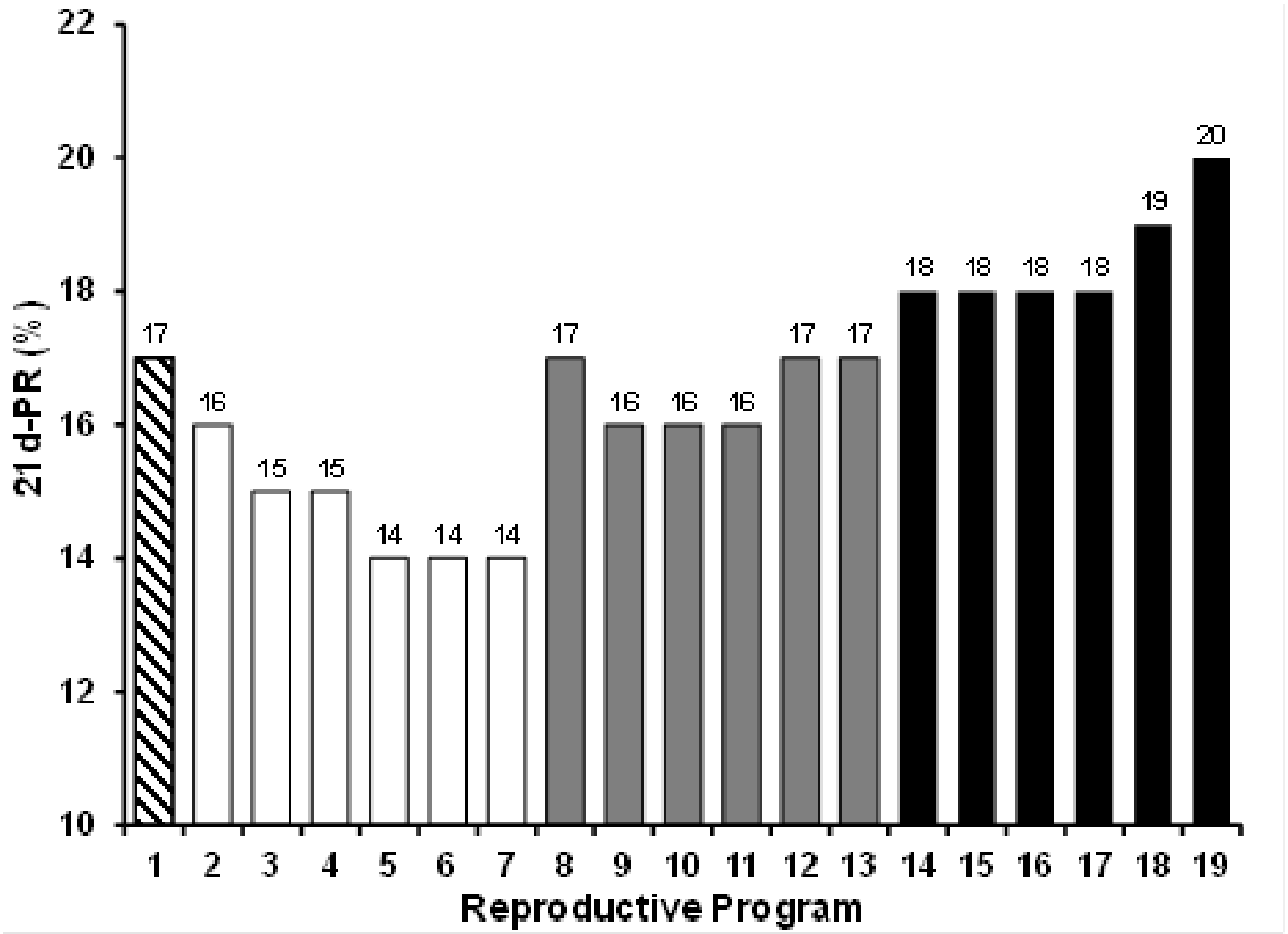
Journal of Dairy Science, In Review, Submitted 23 September 2011

Programas Reproductivos Evaluados

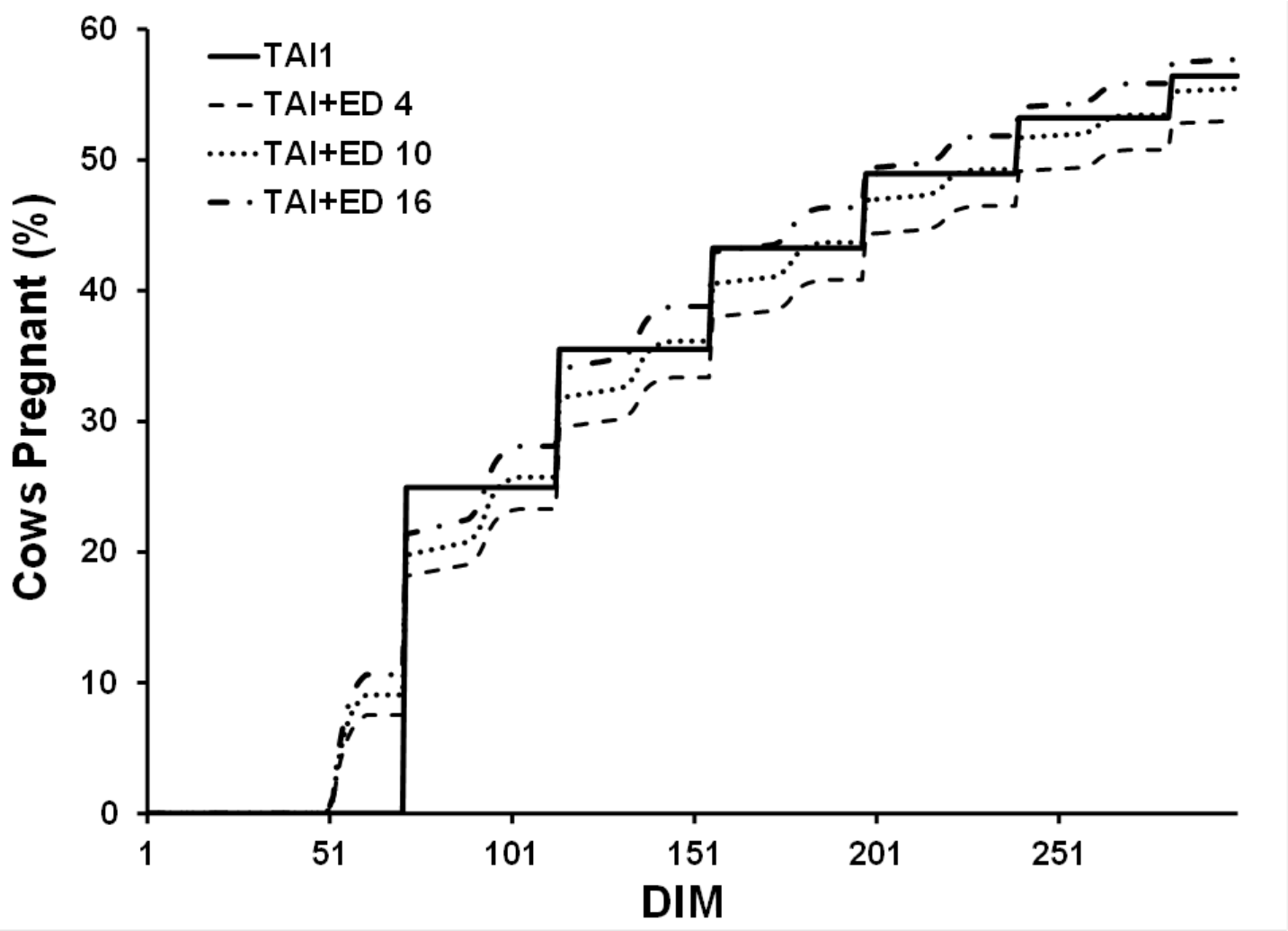
		Primera IA			Segunda y Subsecuentes IA		
Programa	Descripción	DC antes 1st IATF[3]	TC DC Antes 1st IATF	TC IATF	DC antes IATF	TC DC antes IATF	TC IATF
1	IATF 1	-	-	42	-	-	30
2	IATF+DC 2	30	25	40	30	25	30
3	IATF+DC 3	40	25	38	40	25	30
4	IATF+DC 4	50	25	36	50	25	30
5	IATF+DC 5	60	25	34	60	25	28
6	IATF+DC 6	70	25	32	70	25	28
7	IATF+DC 7	80	25	30	80	25	28
8	IATF+DC 8	30	30	40	30	30	30
9	IATF+DC 9	40	30	38	40	30	30
10	IATF+DC 10	50	30	36	50	30	30
11	IATF+DC 11	60	30	34	60	30	28
12	IATF+DC 12	70	30	32	70	30	28
13	IATF+DC 13	80	30	30	80	30	28
14	IATF+DC 14	30	35	40	30	35	30
15	IATF+DC 15	40	35	38	40	35	30
16	IATF+DC 16	50	35	36	50	35	30
17	IATF+DC 17	60	35	34	60	35	28
18	IATF+DC 18	70	35	32	70	35	28
19	IATF+DC 19	80	35	30	80	35	28

DC=detección de celo, TC=tasa de concepción, IATF=inseminación artificial de tiempo fijo

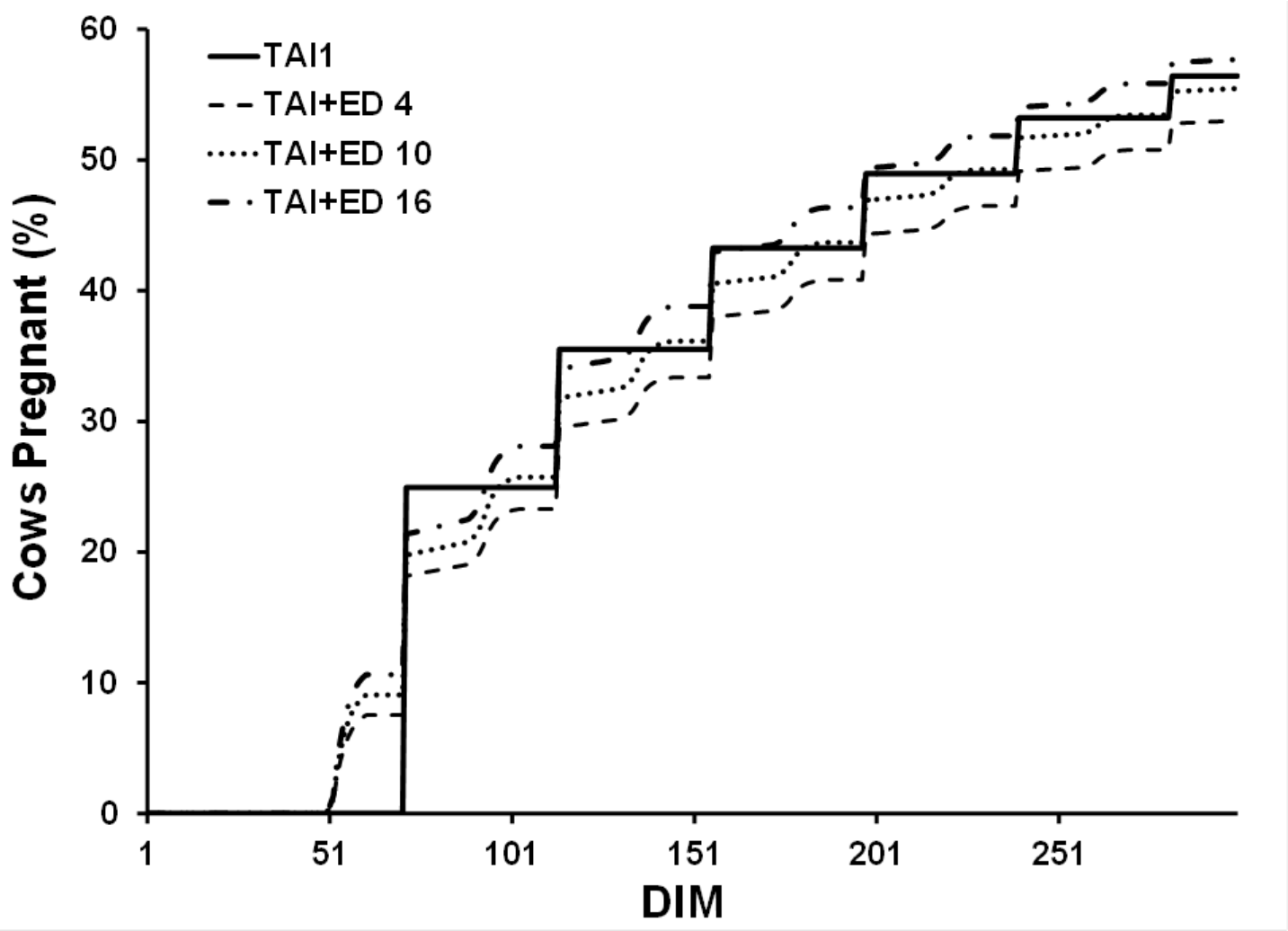
Parámetros Reproductivos



Parámetros Reproductivos



Parámetros Reproductivos

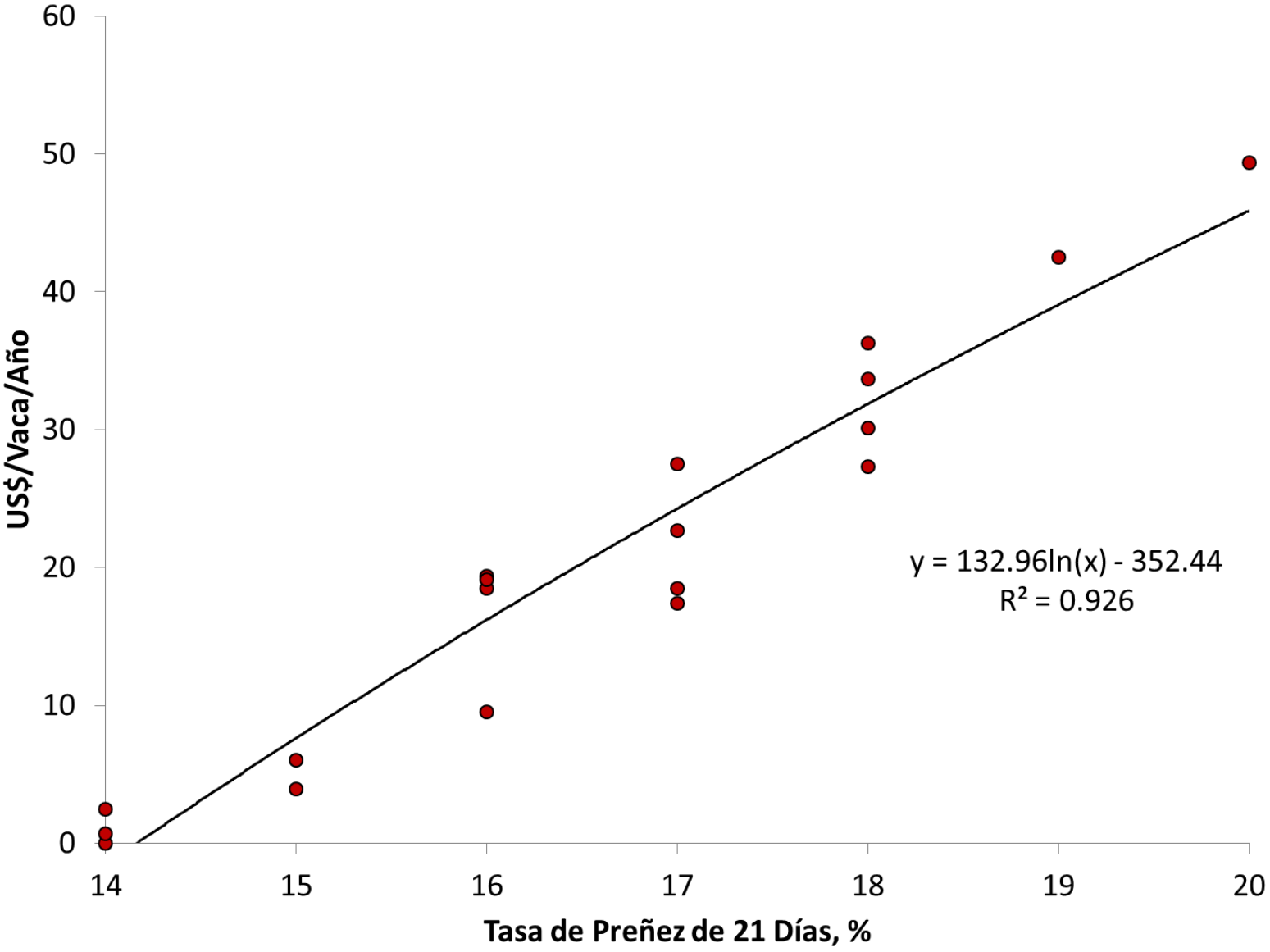


Parámetros Económicos, US$

Programa	ISCA	Costo Descarte	Costo Reproductivo	Valor Terneros	VN Total
IATF 1	3362.8	-184.2	-41.3	42.0	3179.3
IATF+DC 2	3357.9	-187.8	-39.0	40.2	3171.4
IATF+DC 3	3355.7	-189.2	-38.1	39.4	3167.9
IATF+DC 4	3354.4	-190.5	-36.9	38.8	3165.8
IATF+DC 5	3352.9	-193.0	-35.7	37.6	3161.9
IATF+DC 6	3353.1	-193.9	-33.9	37.3	3162.6
IATF+DC 7	3353.7	-194.6	-31.8	37.1	3164.4
IATF+DC 8	3362.1	-185.3	-38.0	41.6	3180.4
IATF+DC 9	3361.6	-185.8	-36.8	41.4	3180.4
IATF+DC 10	3361.6	-186.1	-35.4	41.2	3181.3
IATF+DC 11	3361.6	-187.4	-33.9	40.7	3181.0
IATF+DC 12	3362.9	-187.2	-32.0	40.8	3184.6
IATF+DC 13	3364.9	-186.9	-29.7	41.1	3189.4
IATF+DC 14	3366.3	-182.9	-37.1	43.0	3189.2
IATF+DC 15	3367.2	-182.7	-35.7	43.1	3192.0
IATF+DC 16	3368.6	-182.2	-34.1	43.4	3195.6
IATF+DC 17	3369.9	-182.6	-32.4	43.3	3198.2
IATF+DC 18	3372.5	-181.7	-30.4	44.0	3204.4
IATF+DC 19	3375.6	-180.8	-28.1	44.6	3211.3

ISCA=ingresos sobre los costos de alimentación, VN= valor neto, IATF=inseminación artificial de tiempo fijo, DCV=detección de celo

Valor Económico Tasa de Preñez



Usamos la Aplicación?