



Genetic results from the Strain Trials

J.R. Roche

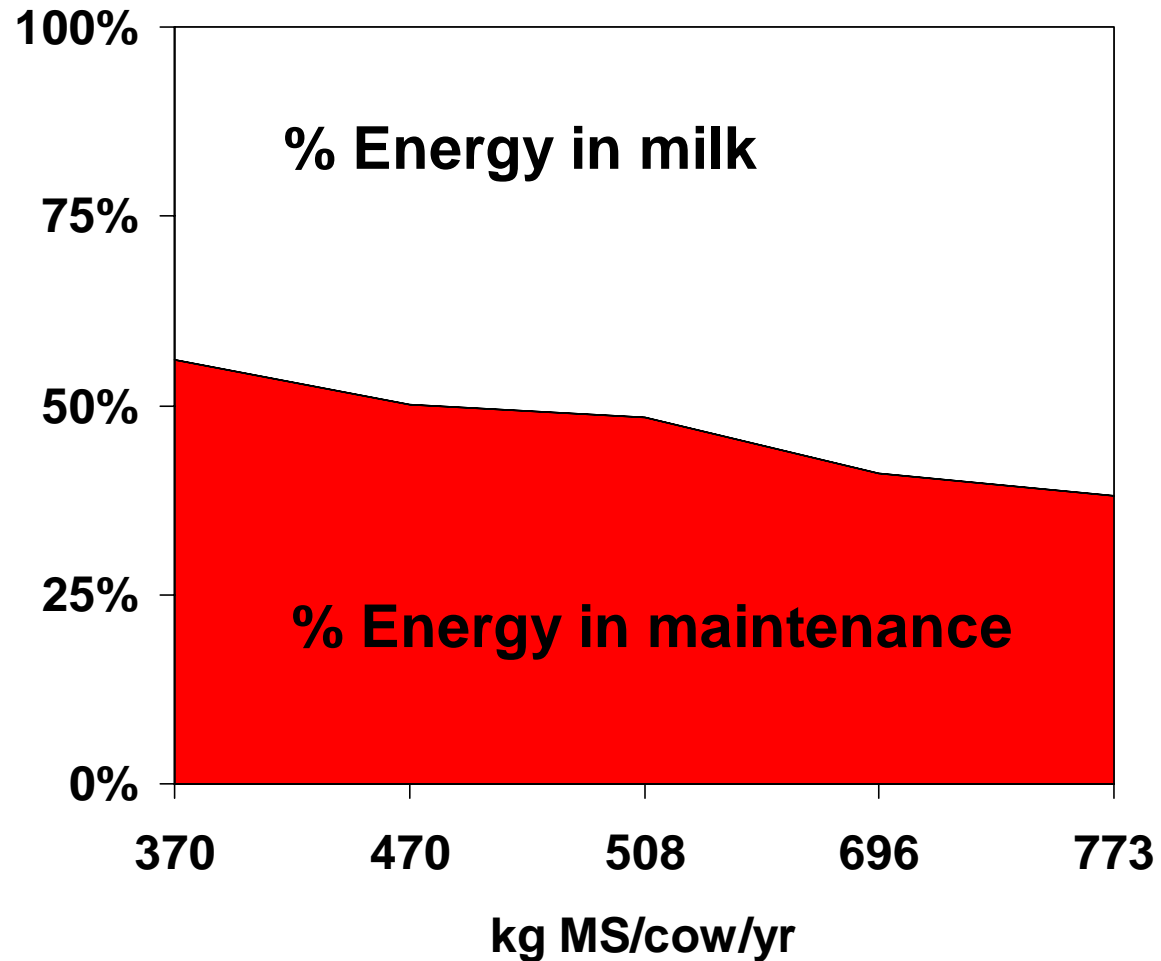


Disclaimer

I know little about animal breeding and am quite happy to leave it to the “professional animal breeder”

But only if they stop making a botch of it by selecting for single production traits

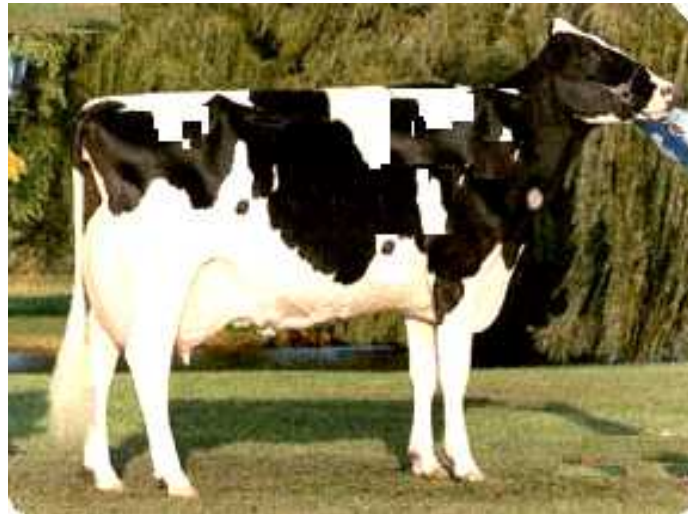
High Yielding Cows



1. Has genetic improvement resulted in a more efficient cow?

(i.e. does she produce more milk)

YES!



Top United States Cows

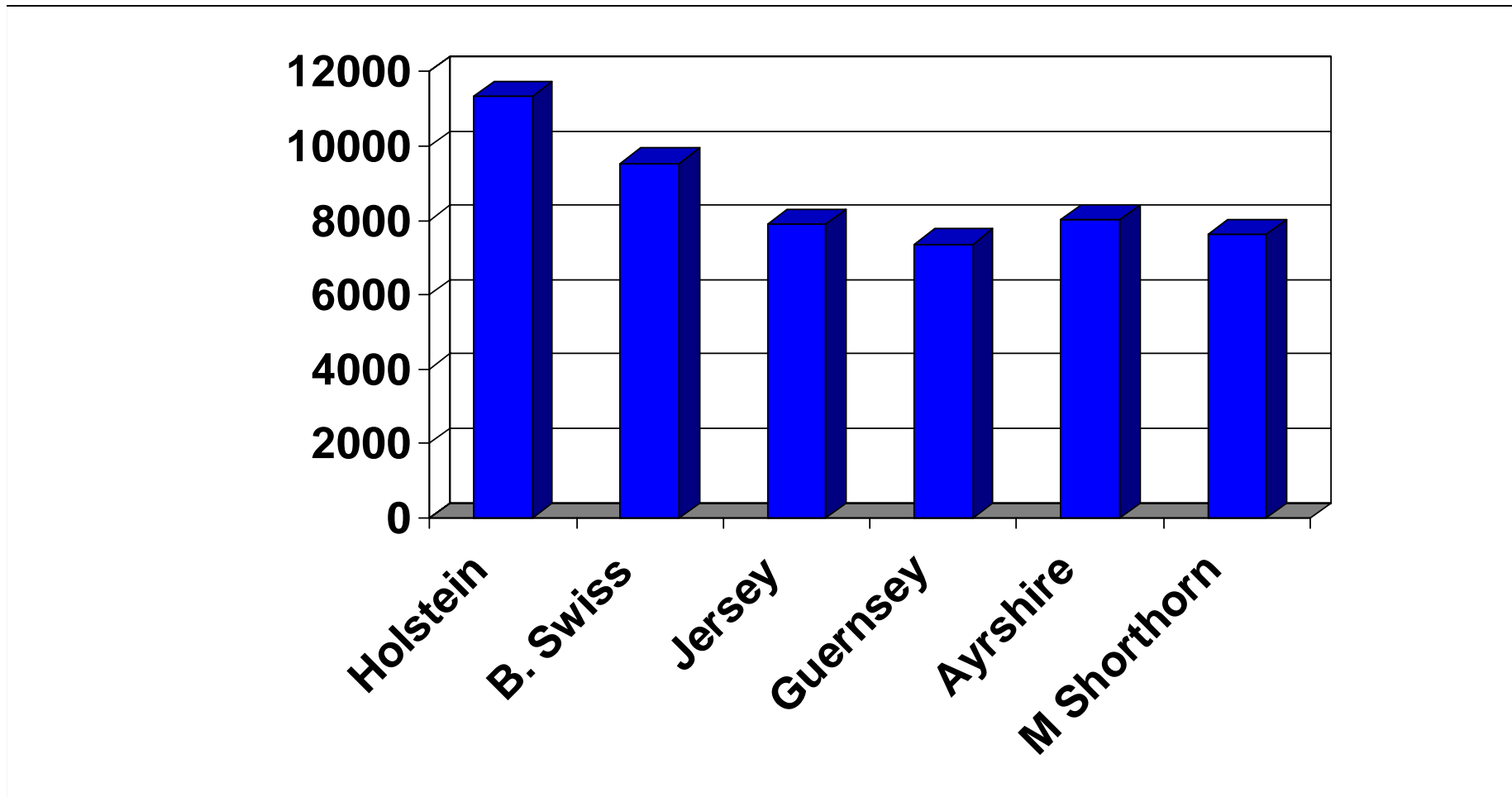


Muranda Oscar Lucinda-ET
Floyd & Lloyd Baumann & Fred
Lang
Marathon, WI
Completed November 1997
30,870 kg milk 2x 365-day
2,161 kg Fat and Protein (est.)



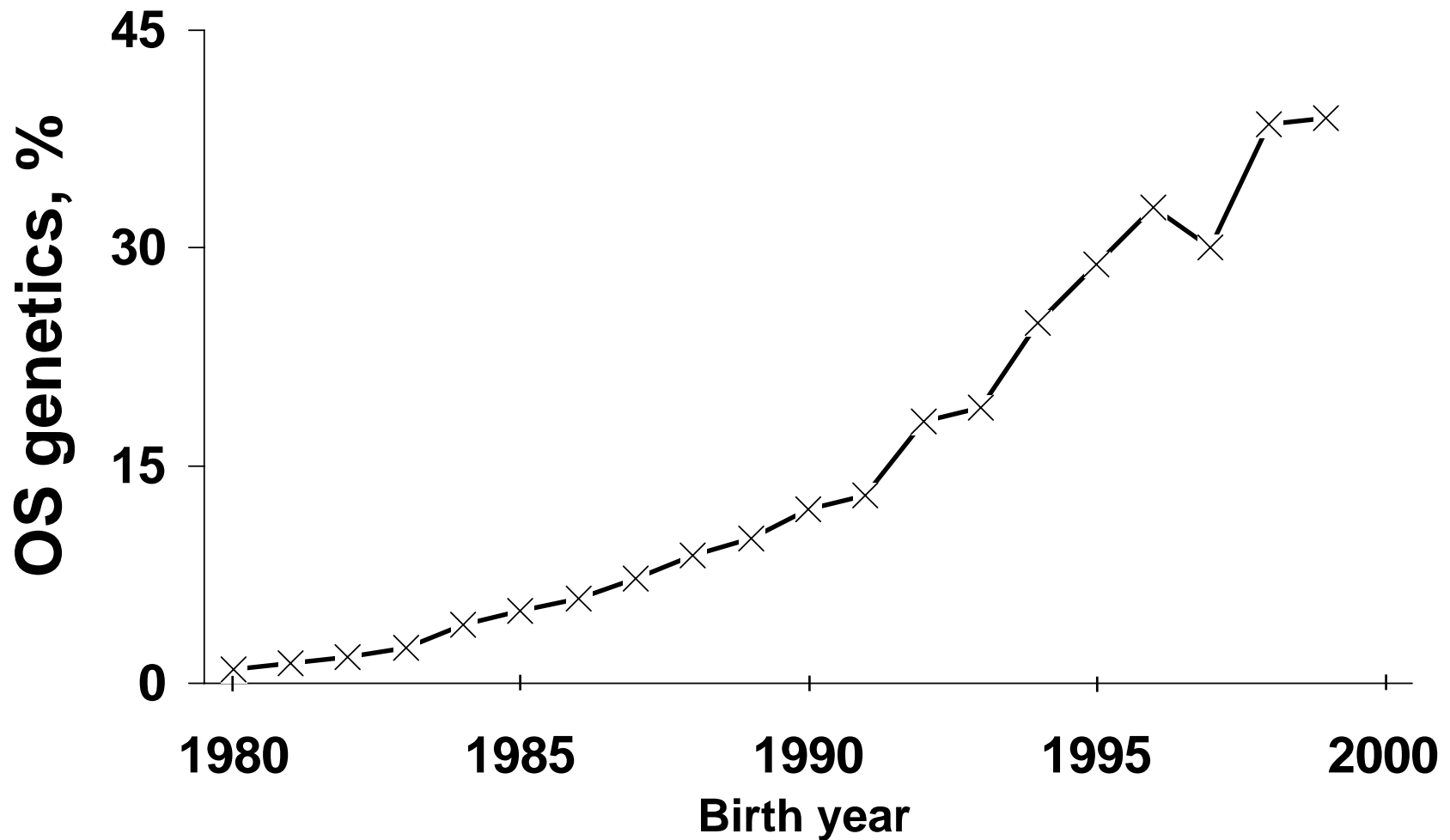
Robthom Suzet Paddy
Robert M. Thomson Jr.,
Springfield, MO
Completed August 1993
26,955 kg milk 2x 365-day
1,887 kg Fat and Protein (est.)

Estimated milk yields by breed (1998 birth year; USDA)



- Data compliments of Dr. Steve Washburn, University of North Carolina

% US genetics in NZ HF cows



(Harris 2000)

So genetic improvement has resulted in a more efficient cow?

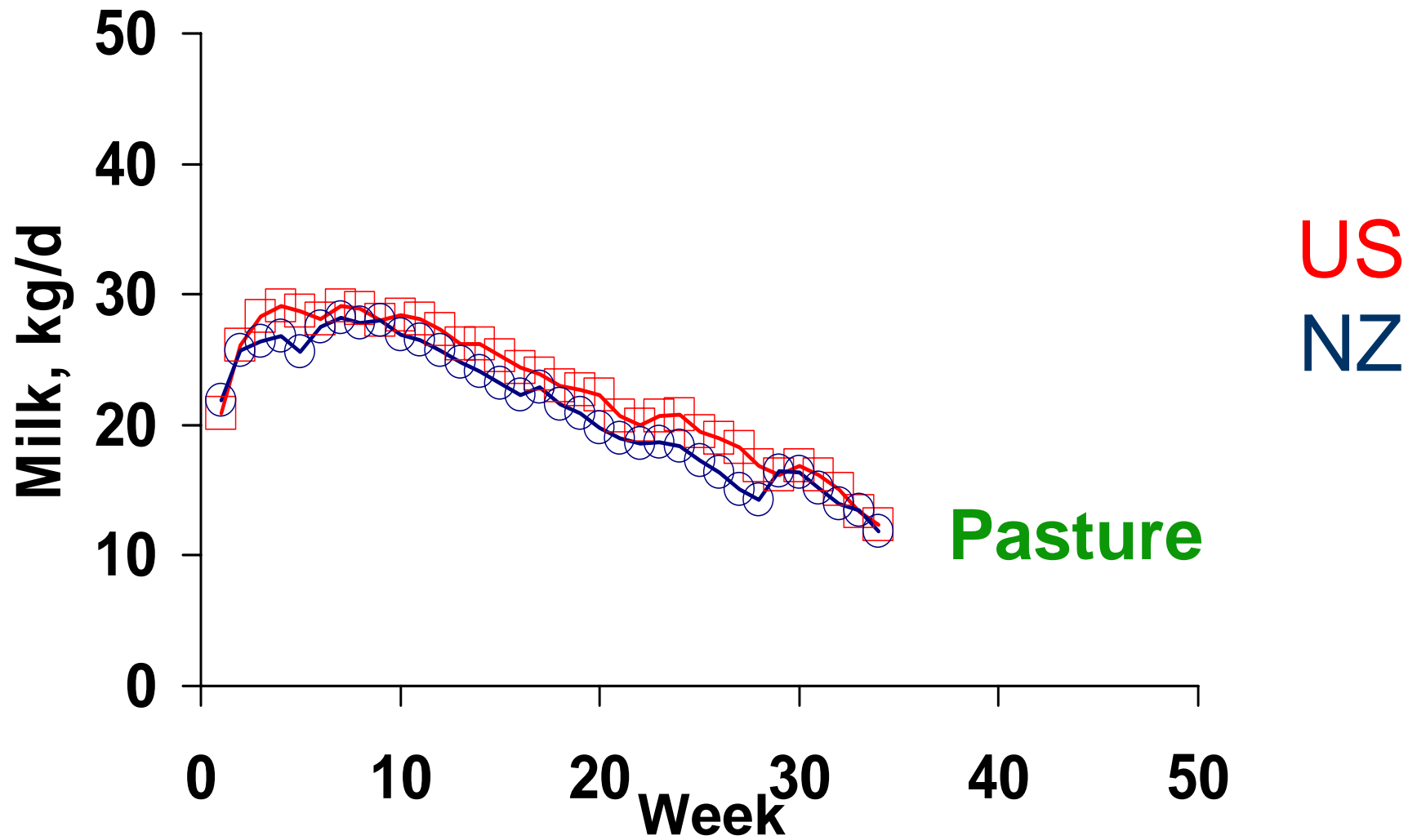
But is she sustainable?

..... is she most profitable?

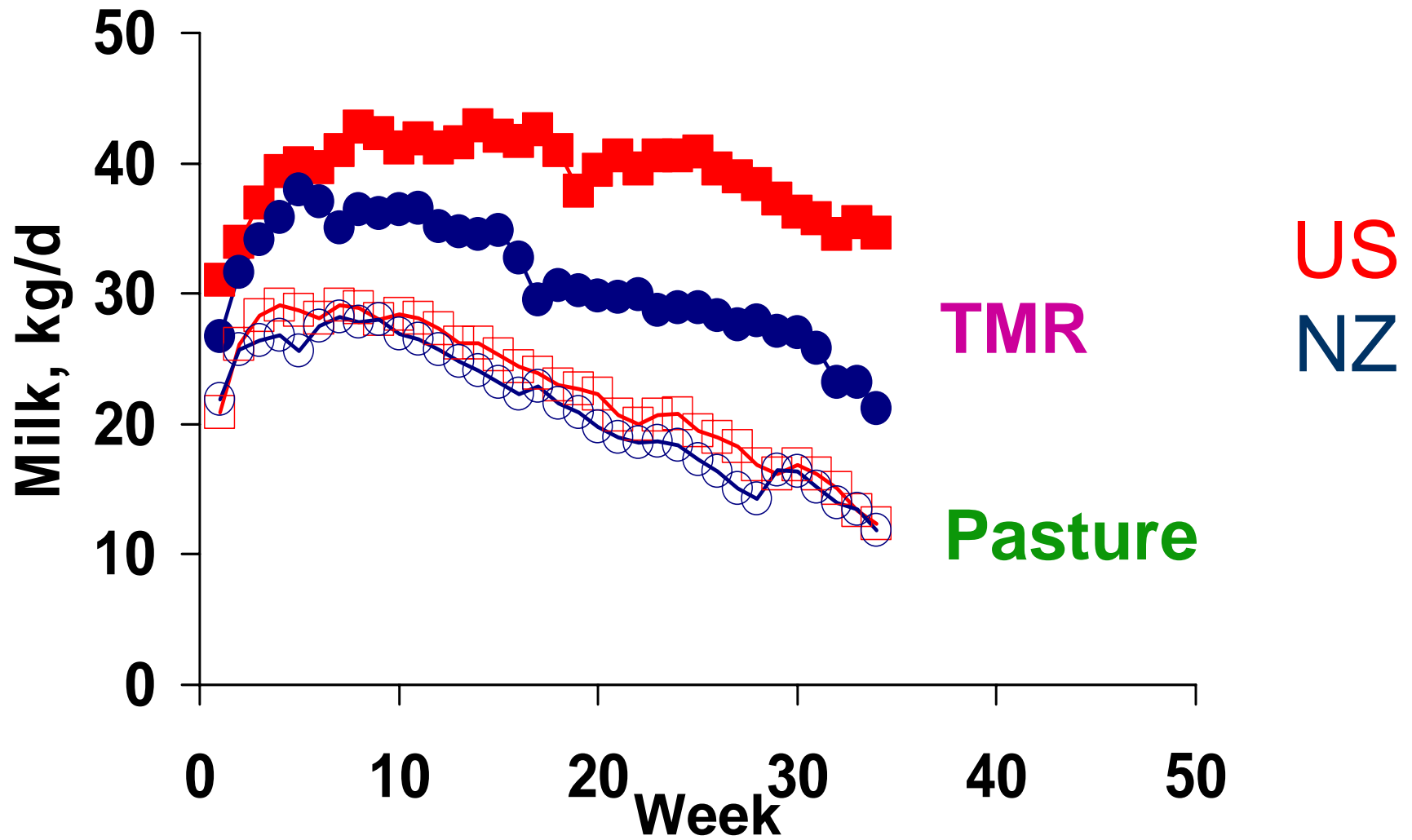


And is the same cow appropriate in every system?

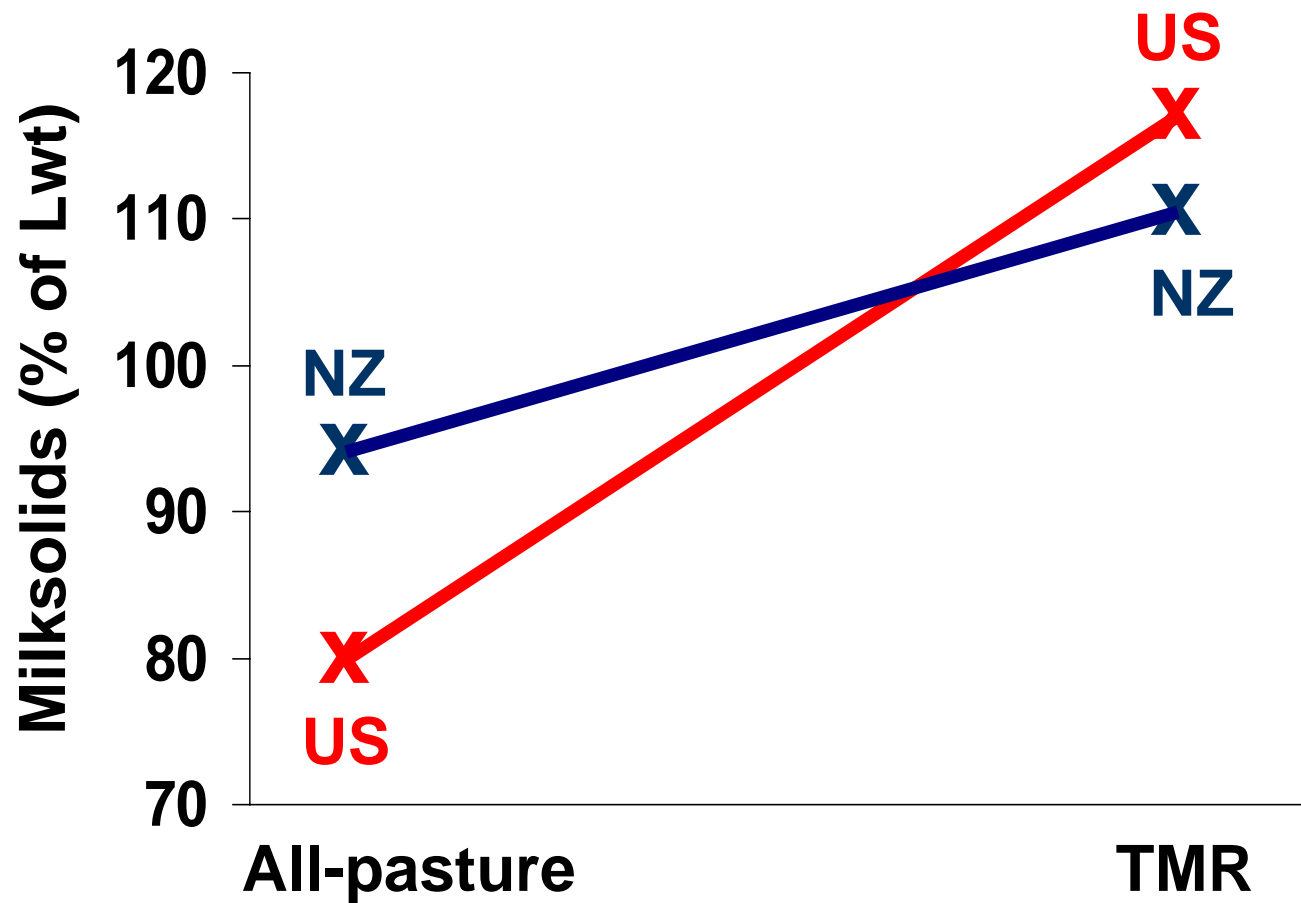
Milk yield



Milk yield



NZ better on pasture, US better on TMR



% not in calf

TMR

NZ

US

Year 1

7₍₁₎

10₍₁₎

Year 2

14₍₂₎

21₍₃₎

Year 3

14₍₂₎

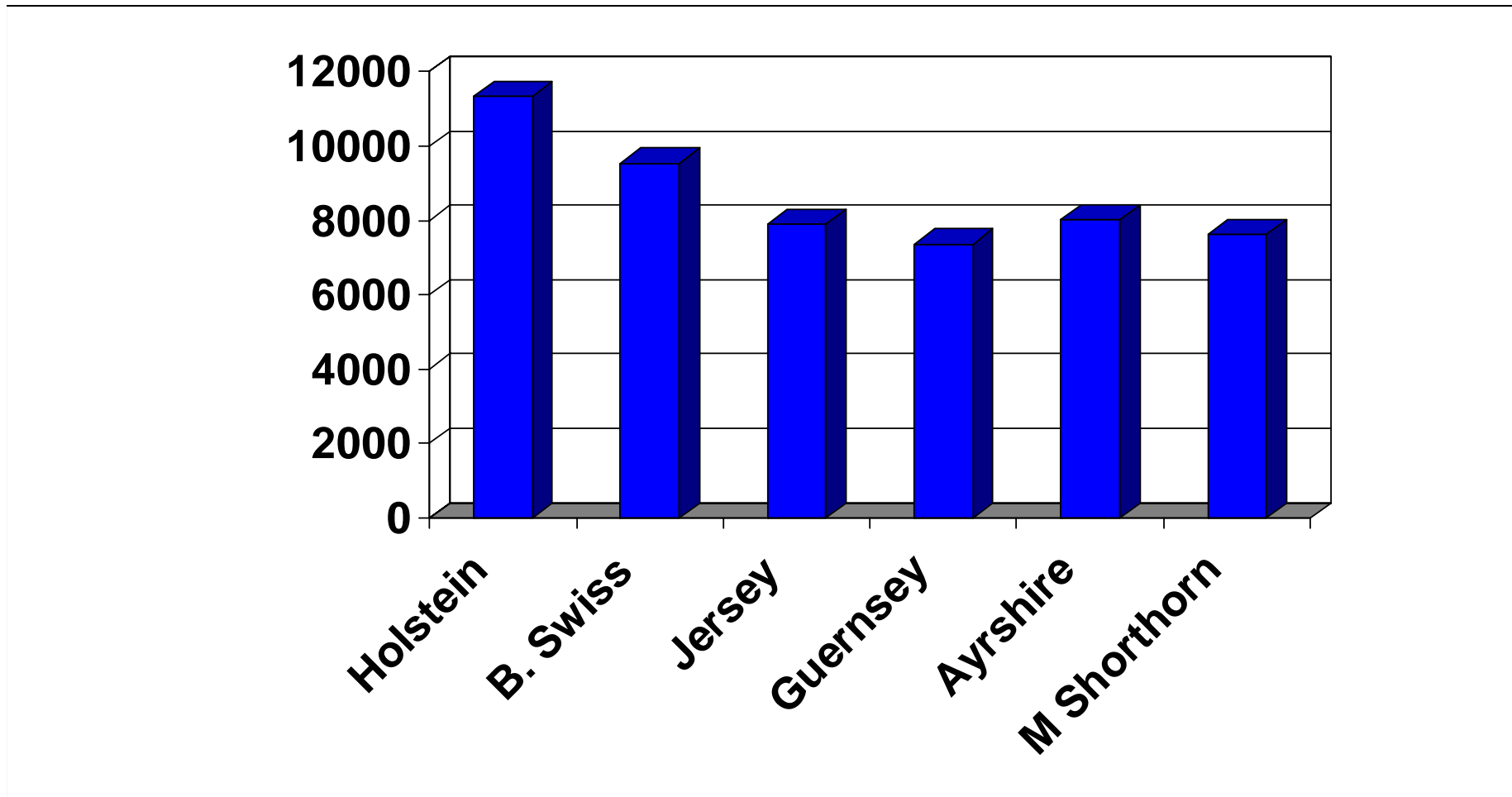
14₍₂₎

% not in calf - US poor on pasture

	Pasture		TMR	
	NZ	US	NZ	US
Year 1	0	22 ₍₂₎	7 ₍₁₎	10 ₍₁₎
Year 2	7 ₍₁₎	38 ₍₅₎	14 ₍₂₎	21 ₍₃₎
Year 3	7 ₍₁₎	62 ₍₈₎	14 ₍₂₎	14 ₍₂₎

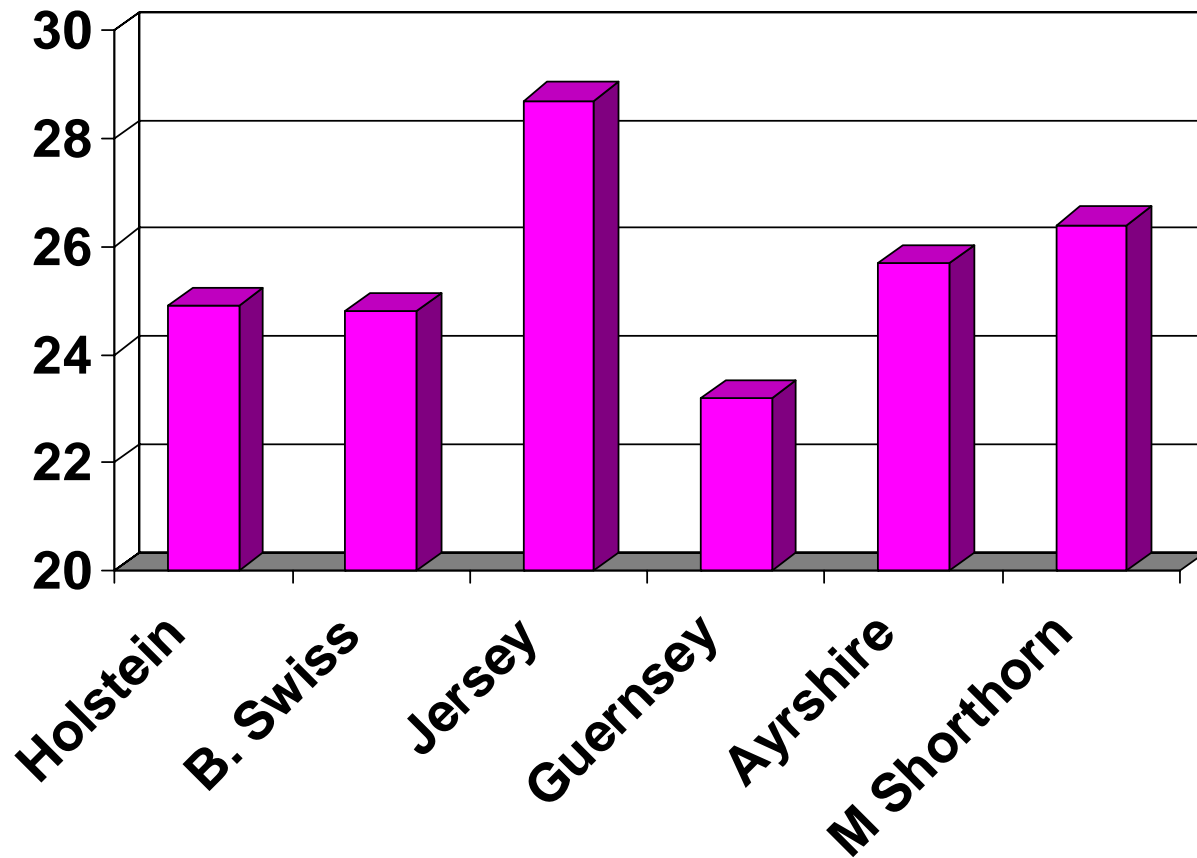
So which cow is most efficient?

Estimated milk yields by breed (1998 birth year; USDA)



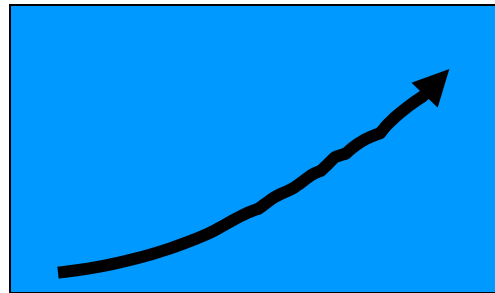
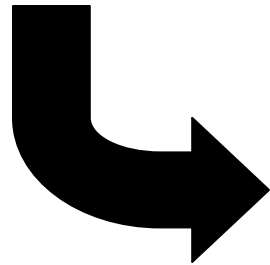
- Data compliments of Dr. Steve Washburn, University of North Carolina

Estimated productive life in months by breed (1998 birth year; USDA)



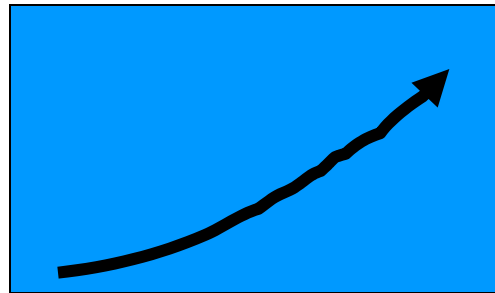
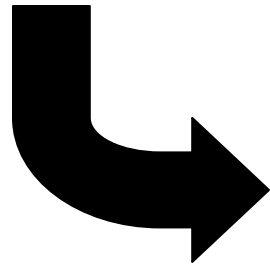
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**Genetics, Nutrition,
Management**

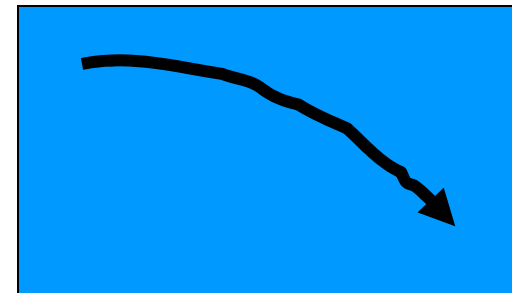
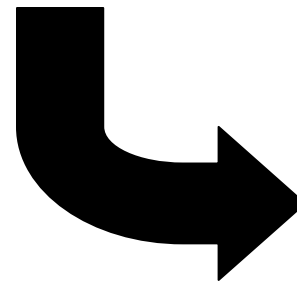


**Milk Production
Per Cow**

**Genetics, Nutrition,
Management**

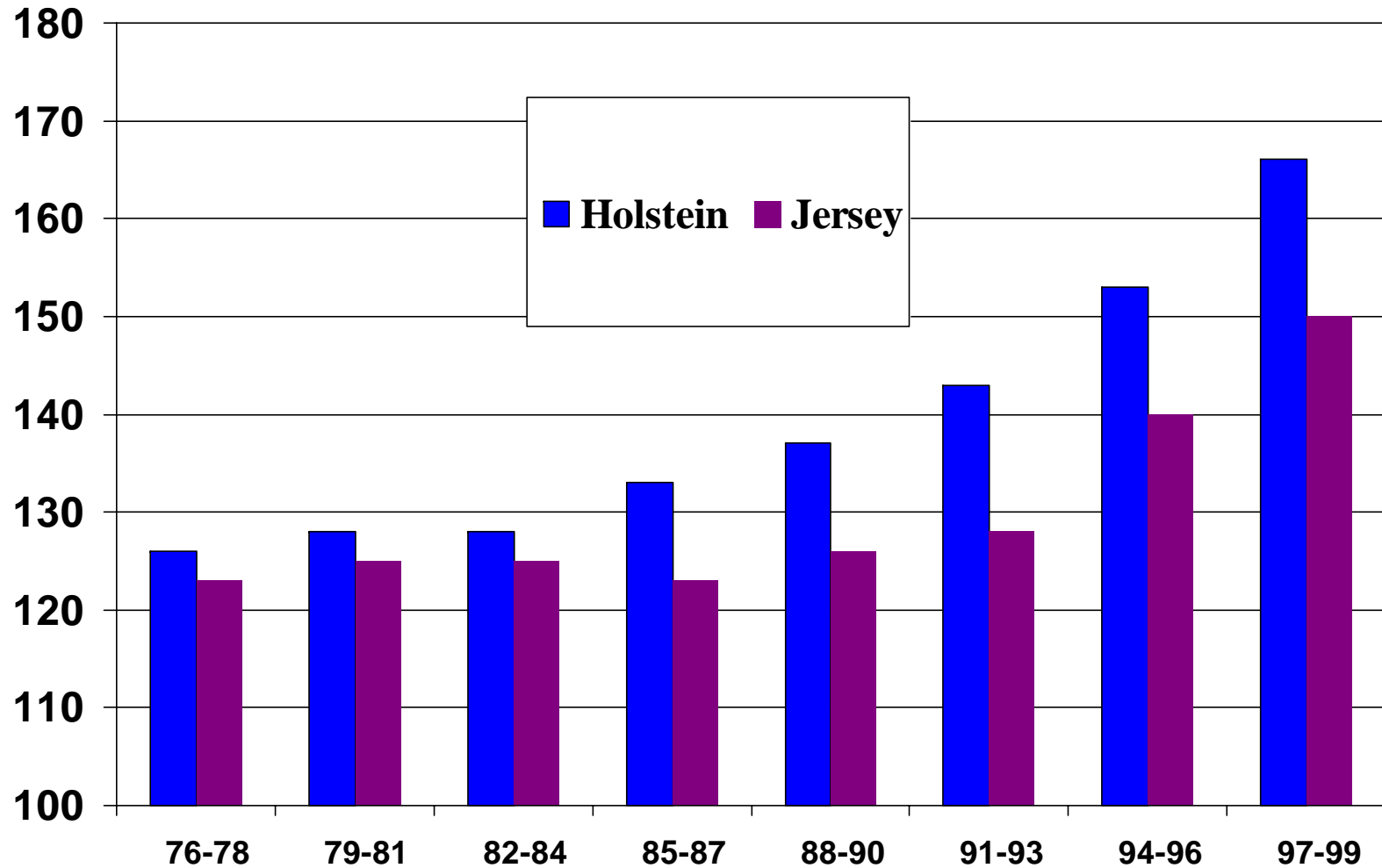


**Milk Production
Per Cow**



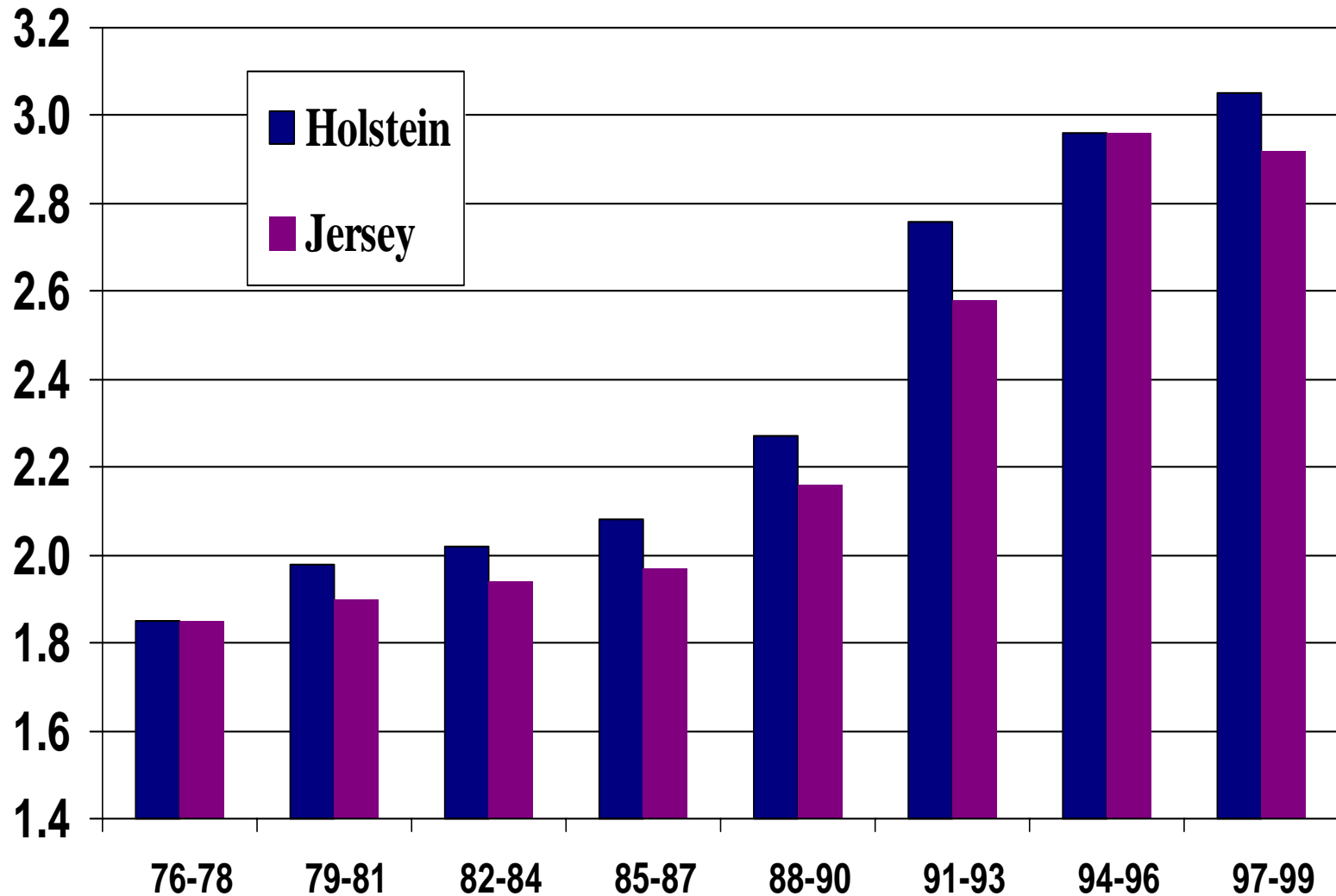
Reproduction

Days open trends over 25 years



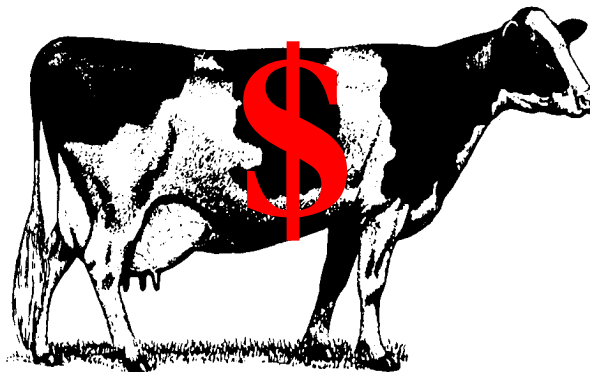
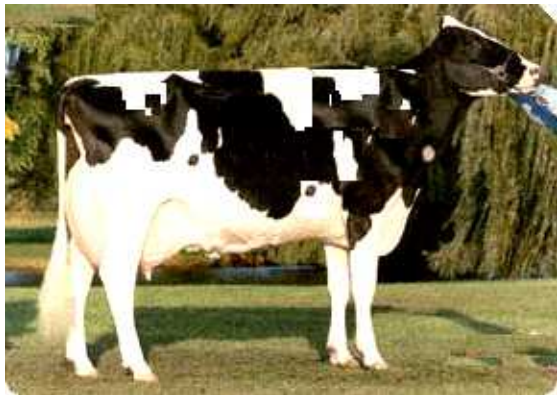
- Data compliments of Dr. Steve Washburn, University of North Carolina

Services per conception trends



- Data compliments of Dr. Steve Washburn, University of North Carolina

“Cows for Courses?”



**Has genetic progress delivered
benefits?**

YES

Benefits

- 18% more milksolids/cow, more protein:fat, more concentrated milk, more efficient converter of feed into profits
- Large increase in profit consistent with differences in genetic merit (for profit)

NZ70 vs. NZ90

	Average profit US\$/ac
NZ70's \$BW -20	\$608
NZ90's \$BW 138	\$734
Difference	\$126/acre

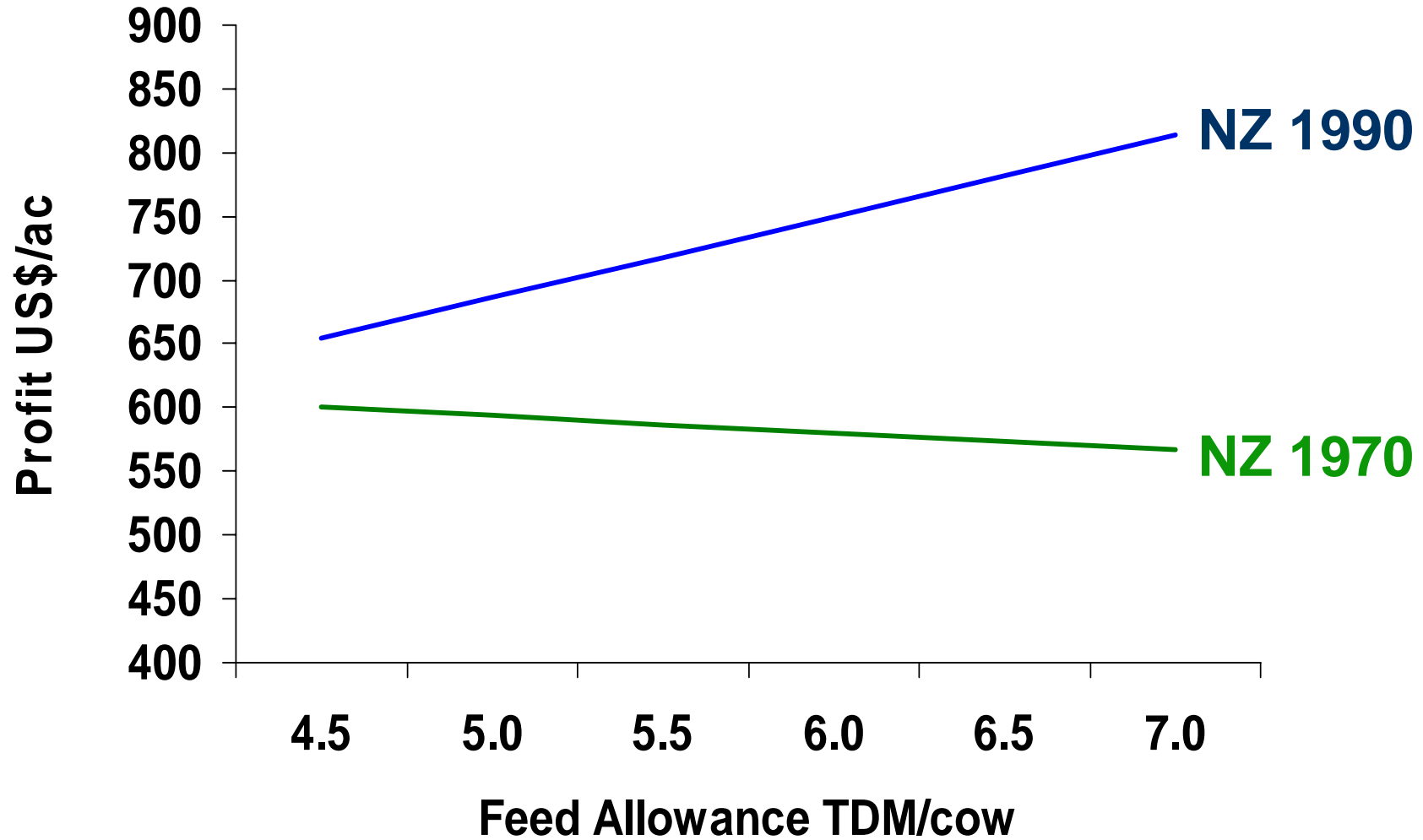
**Genetic improvement does result in
a more economically efficient cow?**

BUT

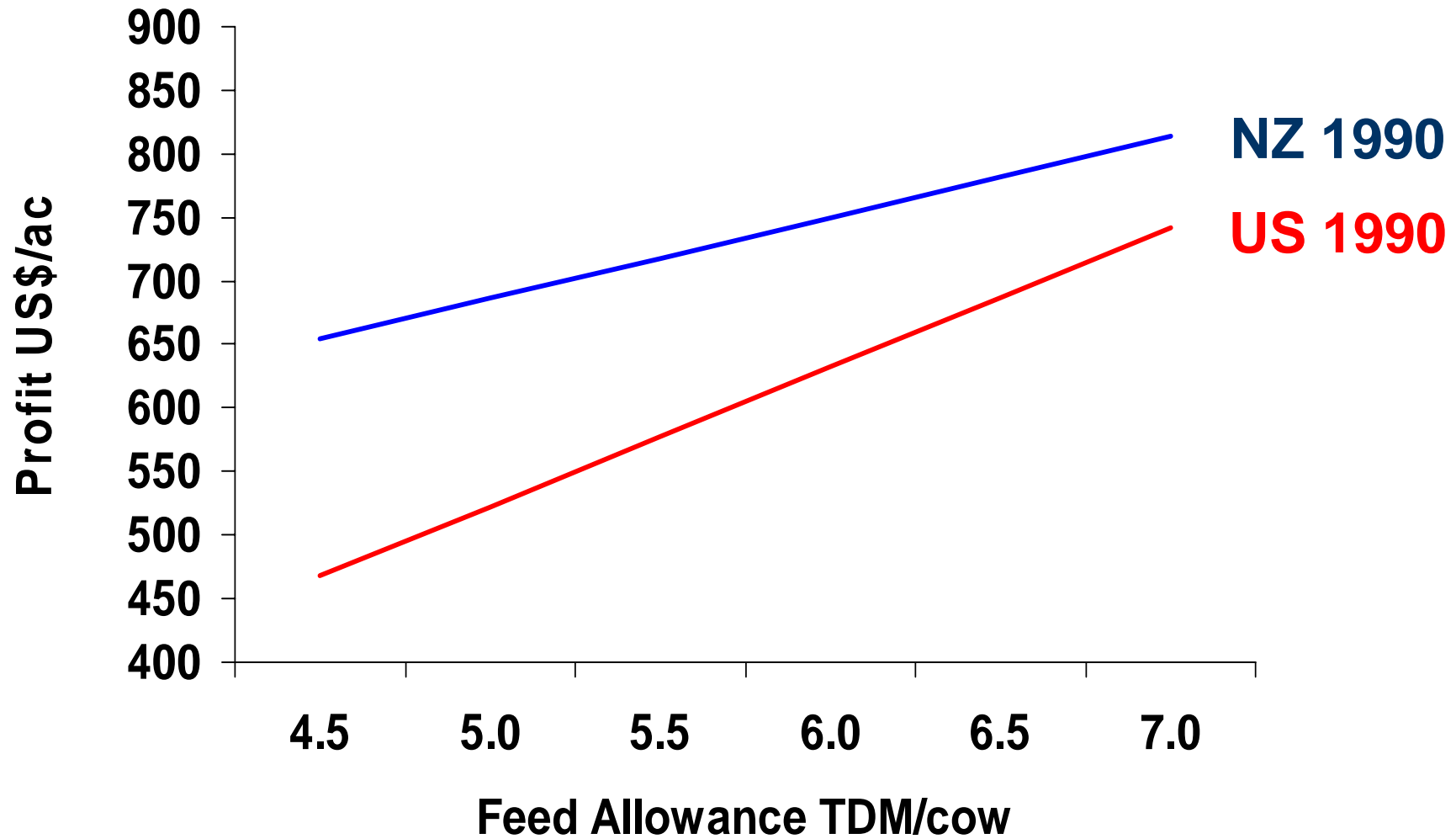
NZ90 vs. OS90

	Average profit US\$/ac
NZ90's \$BW 138	\$734
US90's \$BW 112	\$660
Difference	\$74/ac

Profit

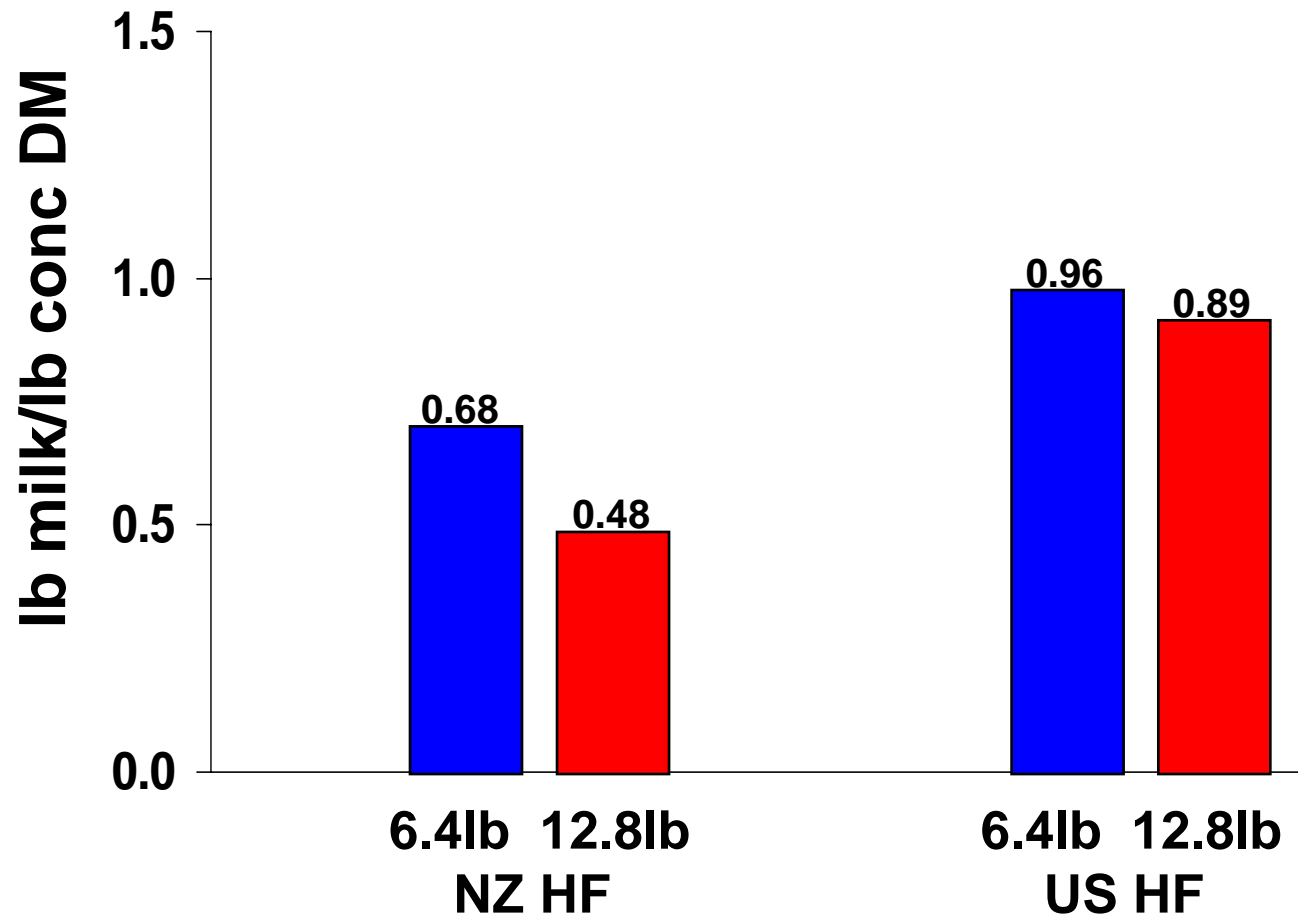


Profit

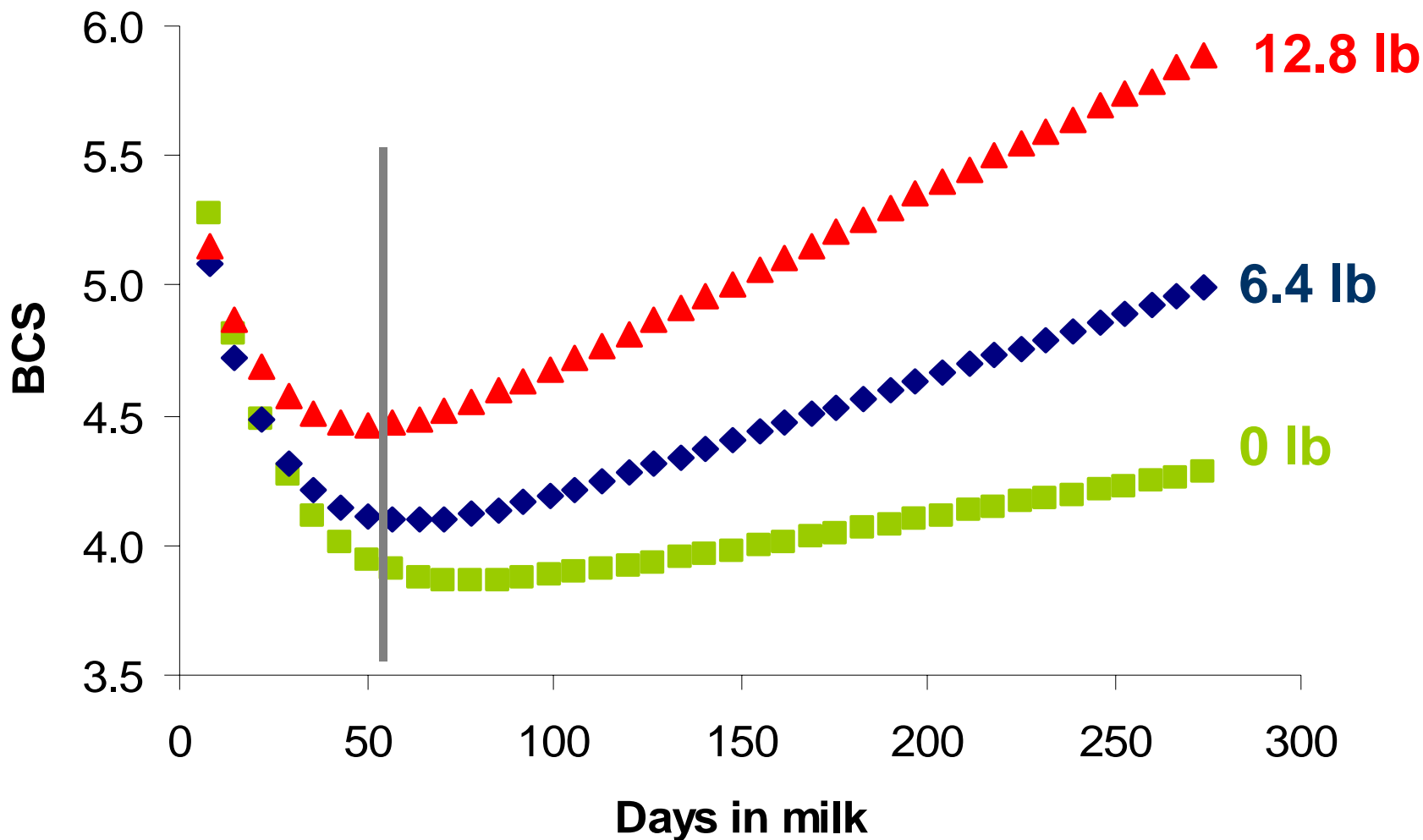


Response to concentrate

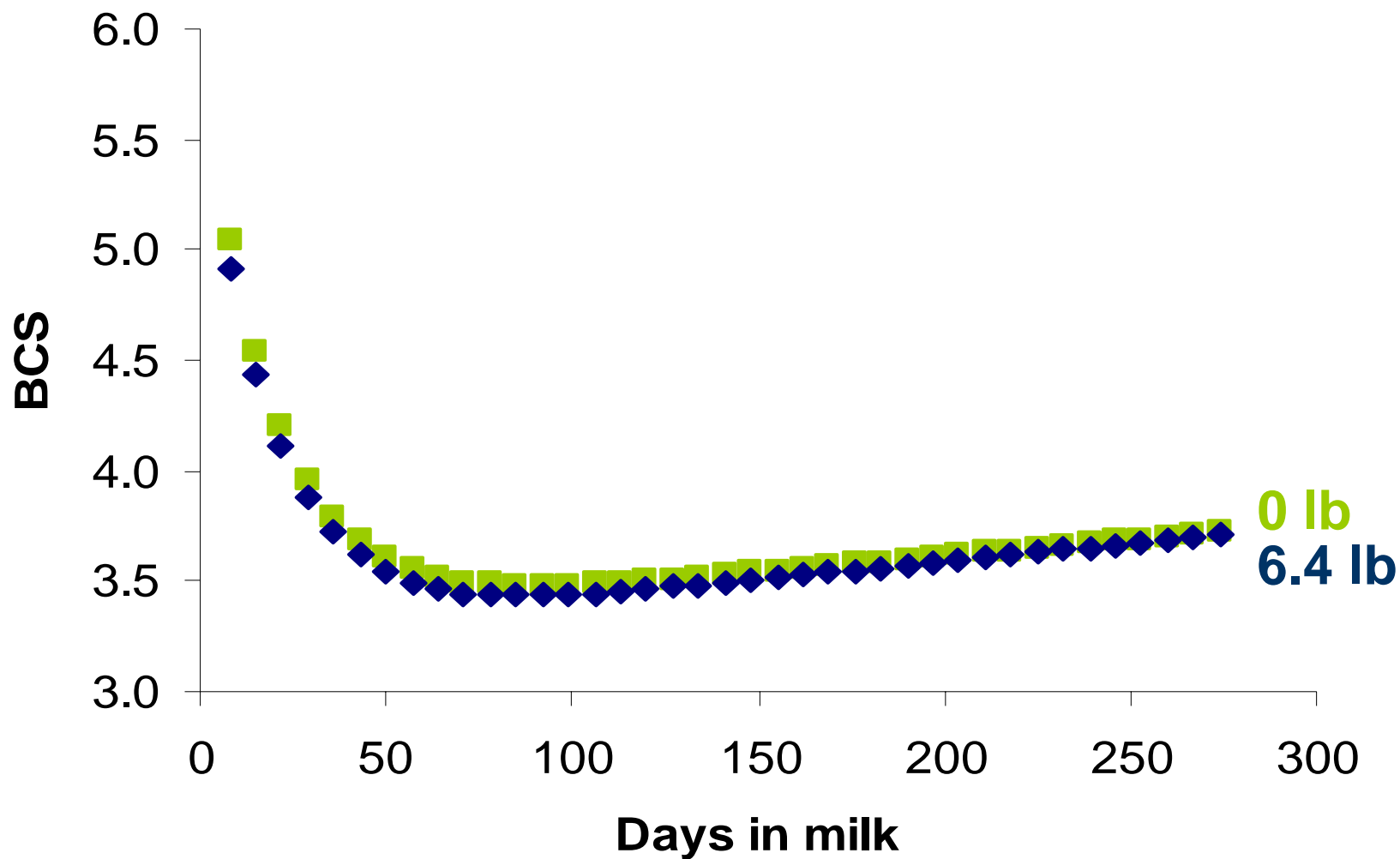
(average of 2 years)



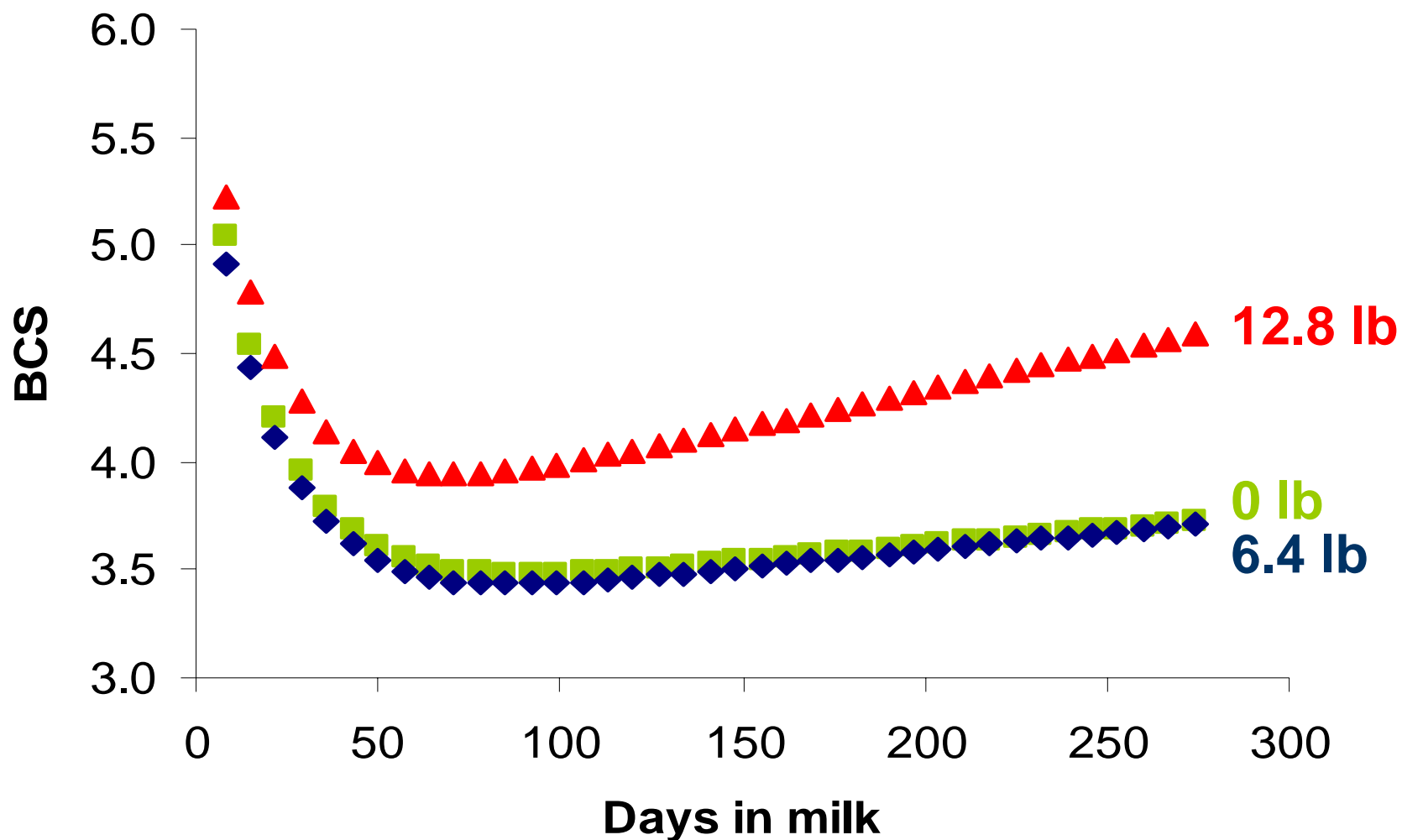
NZ cows – linear BCS response to concentrates



US cows – continue to milk



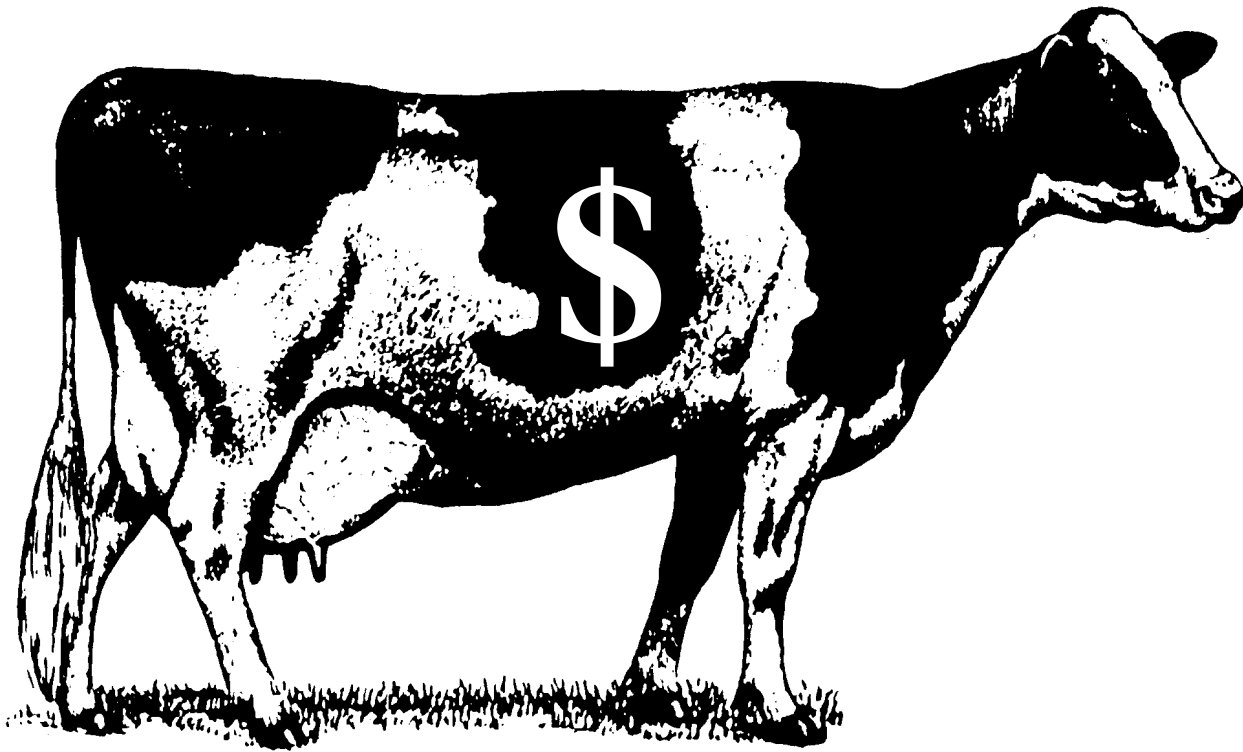
Until high level of concentrates



“Cows for Courses?”



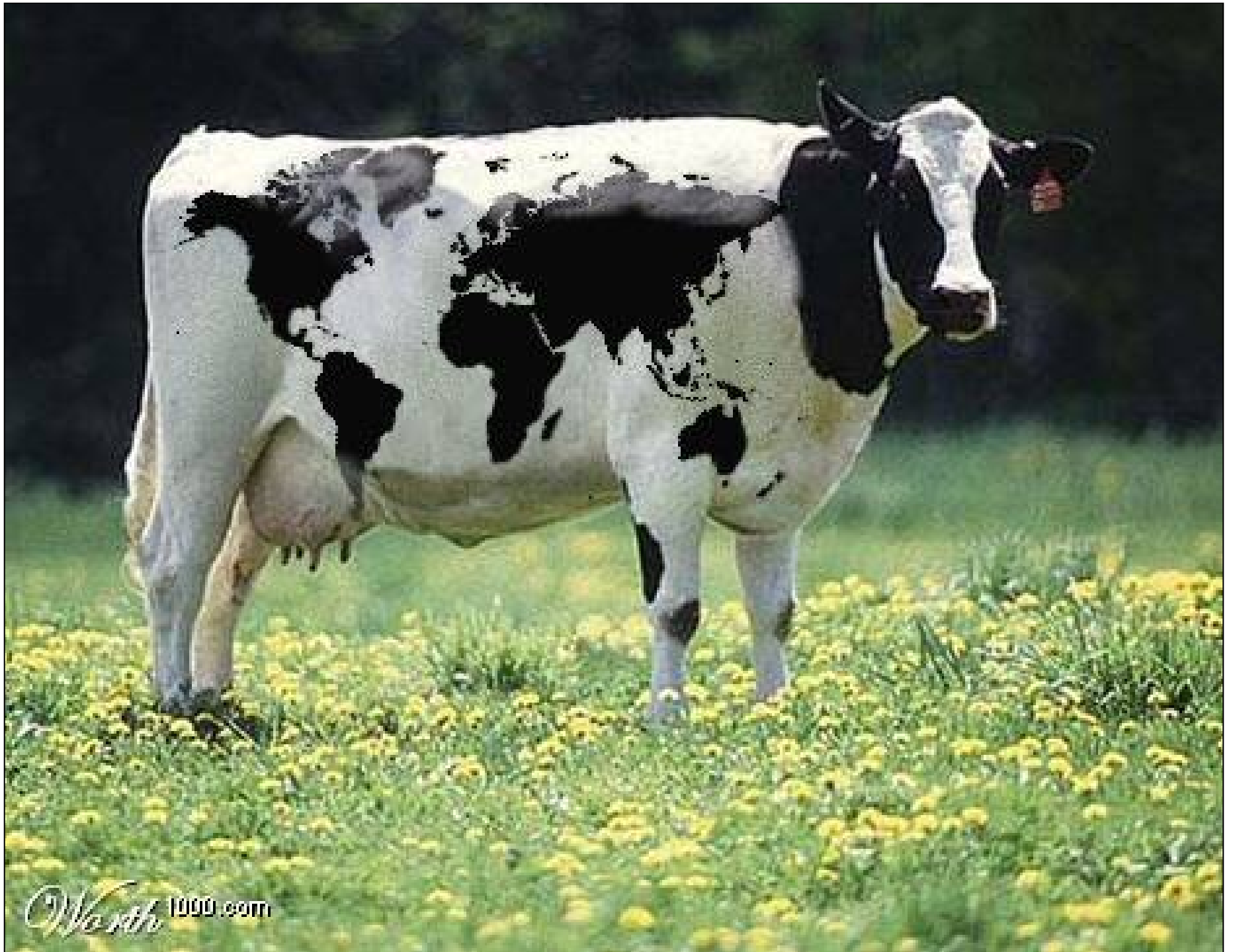
Remember the Economics



Tips for cow selection

- Seek advice of an *INTERESTED* dairy geneticist
- Consider traits of economic importance in your herd
- Select breeds to complement each other
- Plan for several generations beyond the first cross
- Select breeding stock with performance records
- Select from populations measured for traits of value
- Avoid the “breed of the year” syndrome

- Steve Washburn, University of North Carolina





Making the Difference in Dairying

