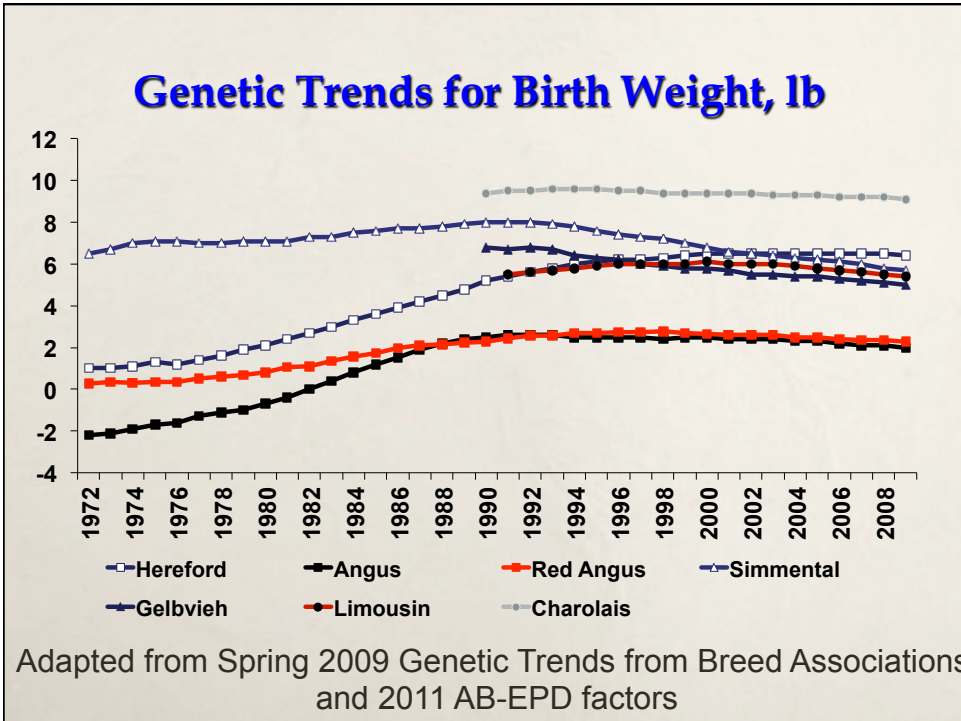
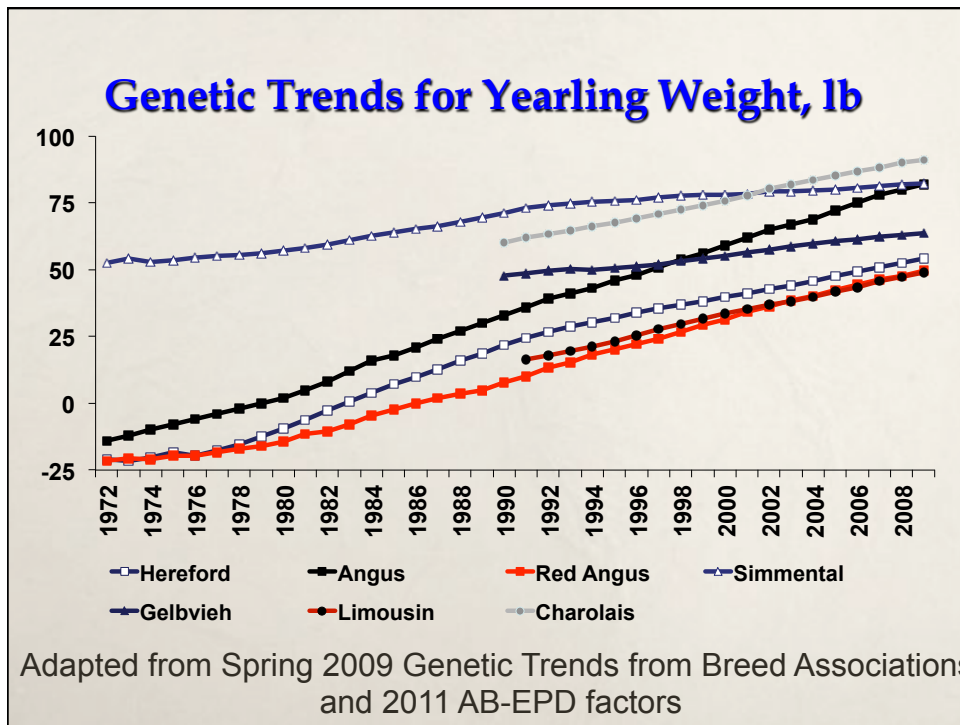
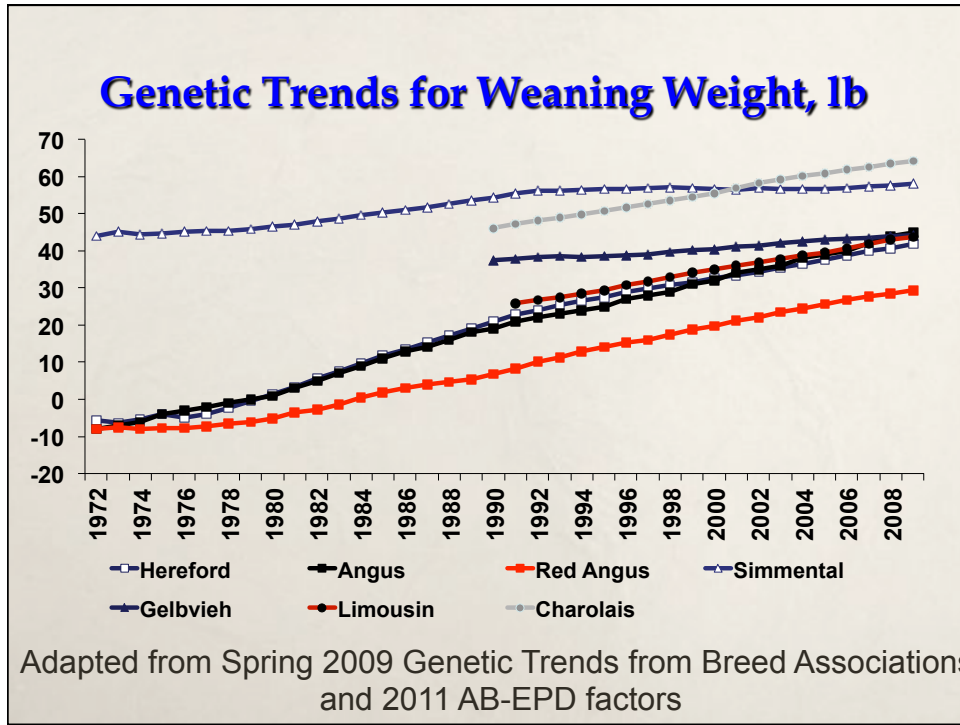
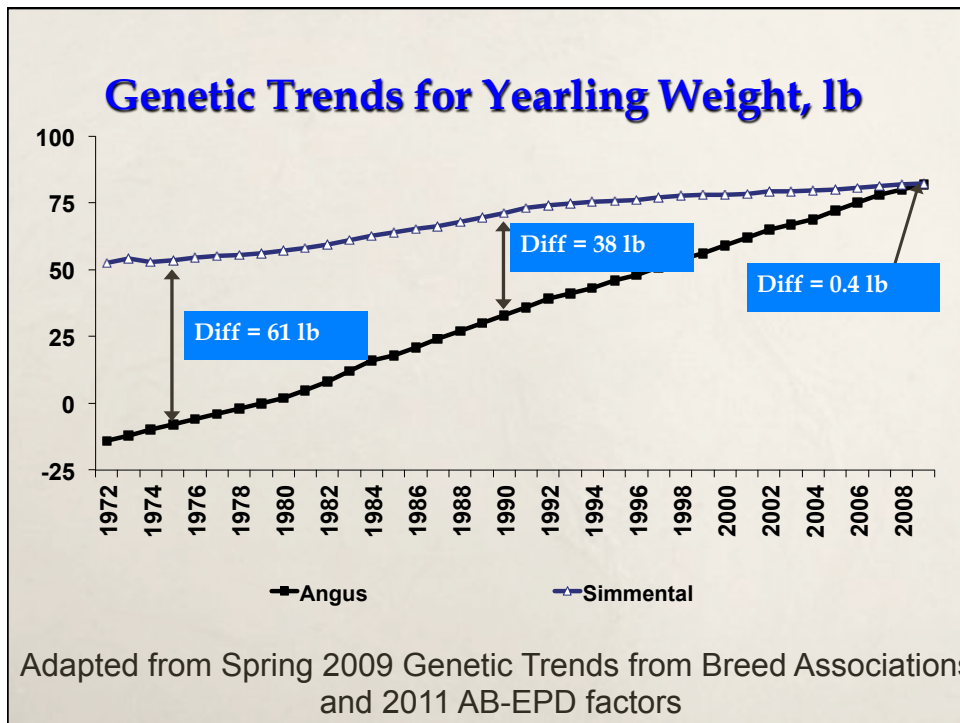
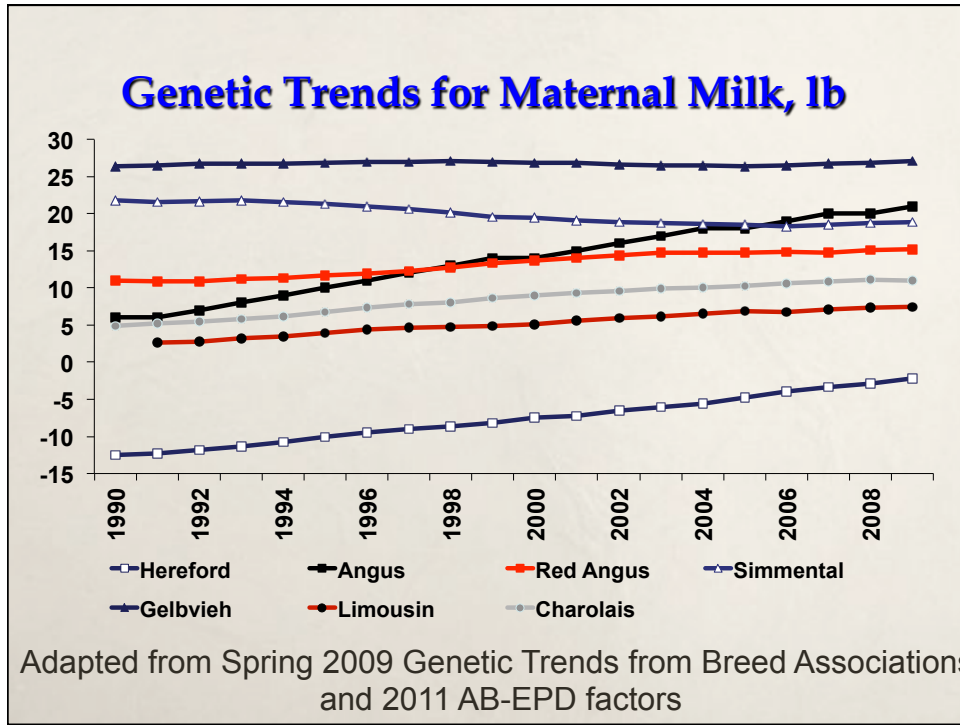


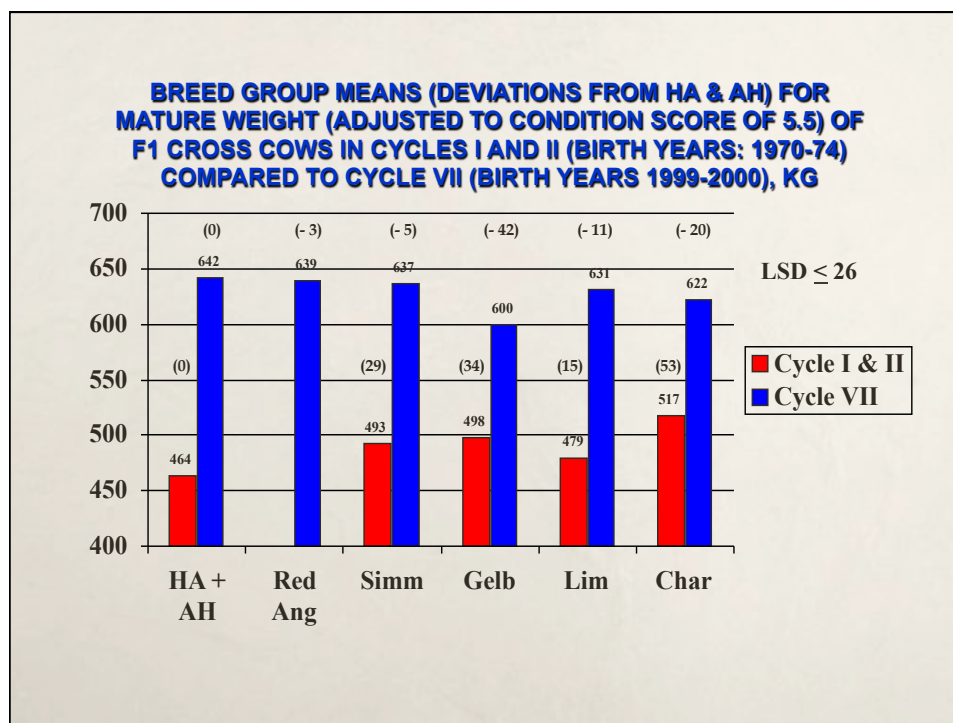
Crossbreeding Overview

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Heterosis Example

	Breed A	Breed B	Average	A × B	Heterosis
Trait 1	96	104	100	107	7%
Trait 2	102	98	100	100	0%
Trait 3	105	95	100	120	20%

Heterosis Estimates

Traits	Heterosis
Birth, weaning, yearling weights	3 to 7 %
Retail product %, marbling	0 %
Age at puberty, milk, 1st service conception, calves weaned per cow	6 to 10%
Crossbred calf weight weaned per crossbred cow exposed, longevity	20 to 30%

Crossbreeding systems Compared

Type of system	Advantage	Retained heterosis
2-breed rotation A*B rotation	16	67
3-breed rotation A*B*C rotation	20	86
Terminal cross T*A	8.5	0
Terminal cross T*(A*B)	24	100

Adapted from Ritchie et al., 1999 ; Gregory and Cundiff 1980.

Points to Ponder

- * Mature weight
 - * Weaning and yearling weight moderately to highly correlated to mature weight
 - * Increased yield comes at a cost in the cow herd
 - * Important to use terminal bulls on moderate cows
 - * Common breeds have all increased mature weight
 - * Use selection tools to moderate maternal lines
- * Heterosis in crossbred cows should increase their culling age, reduce replacement costs, and increase chances for a profitable herd
- * The notion that beef breeds should be all-purpose is common, but counterproductive
 - * Breeds are too similar, need to define a purpose
- * Heterosis is important and underutilized, but it is not a “free lunch”
 - * Greater production comes at the expense of higher inputs