How the Genomic era is shaping the dairy industry

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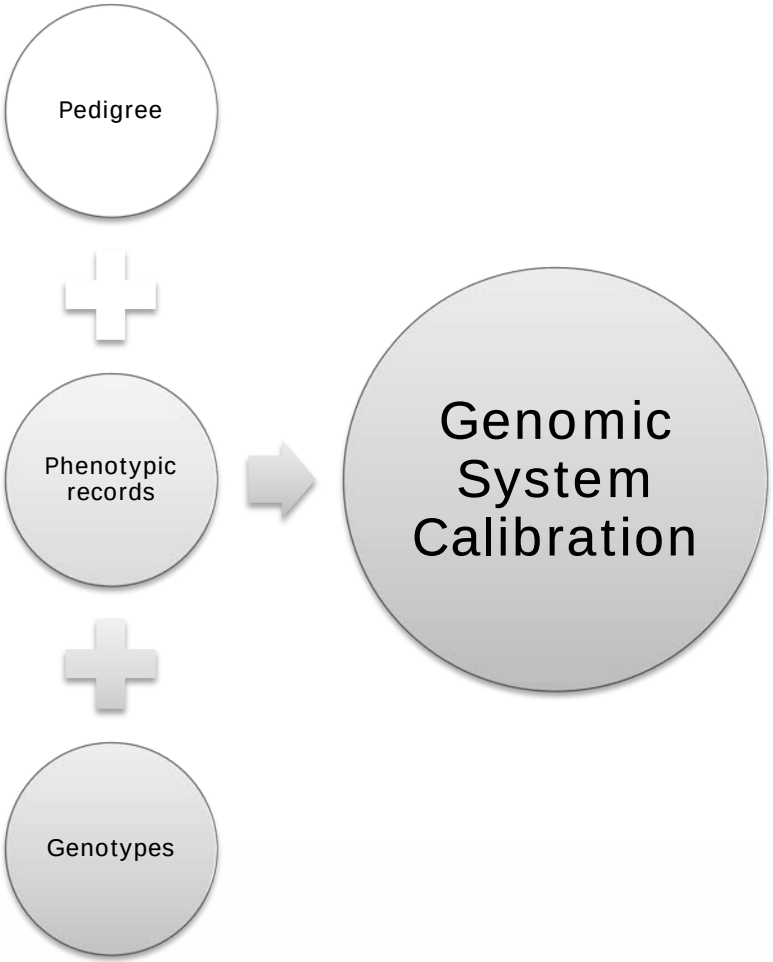
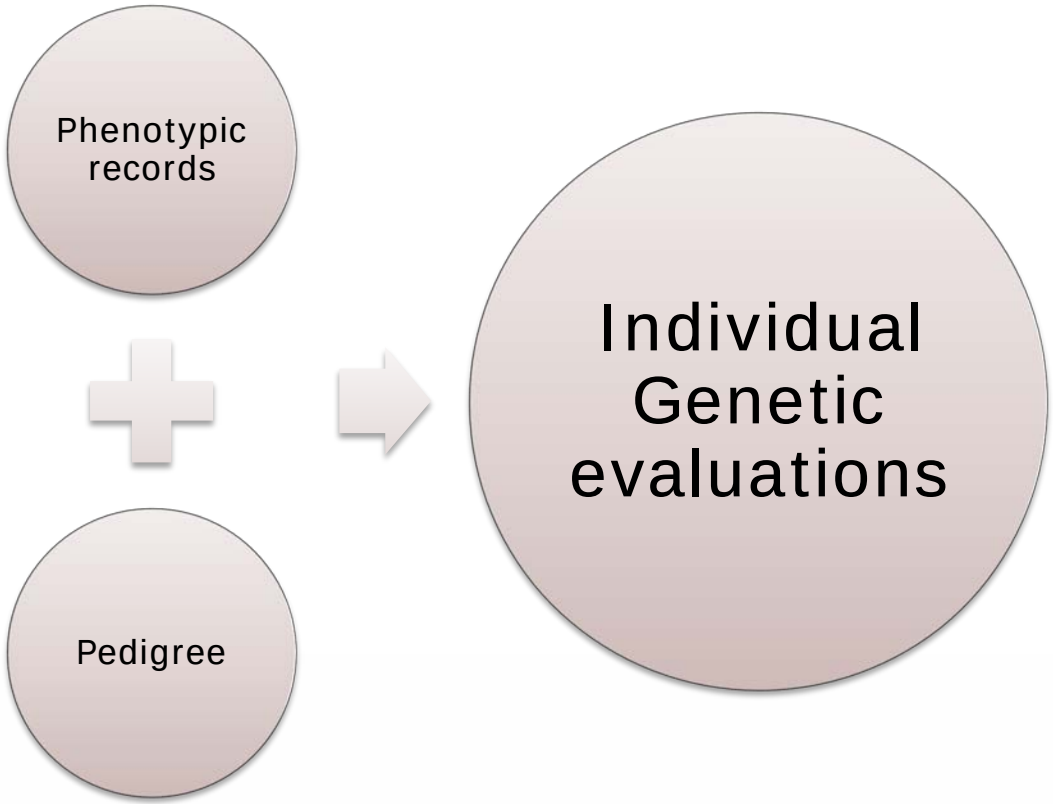
ANARB
Chairman of Intergenomics Management Committee

The way it looks now



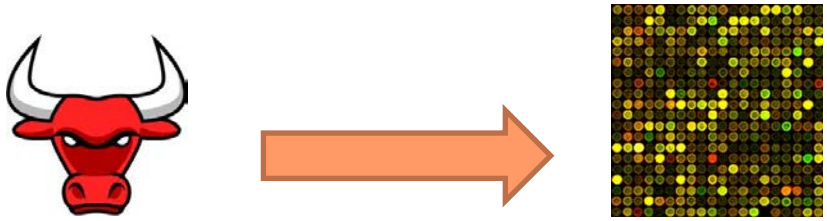
A central paradigm at stake

- Since “ever”



What we evaluate?

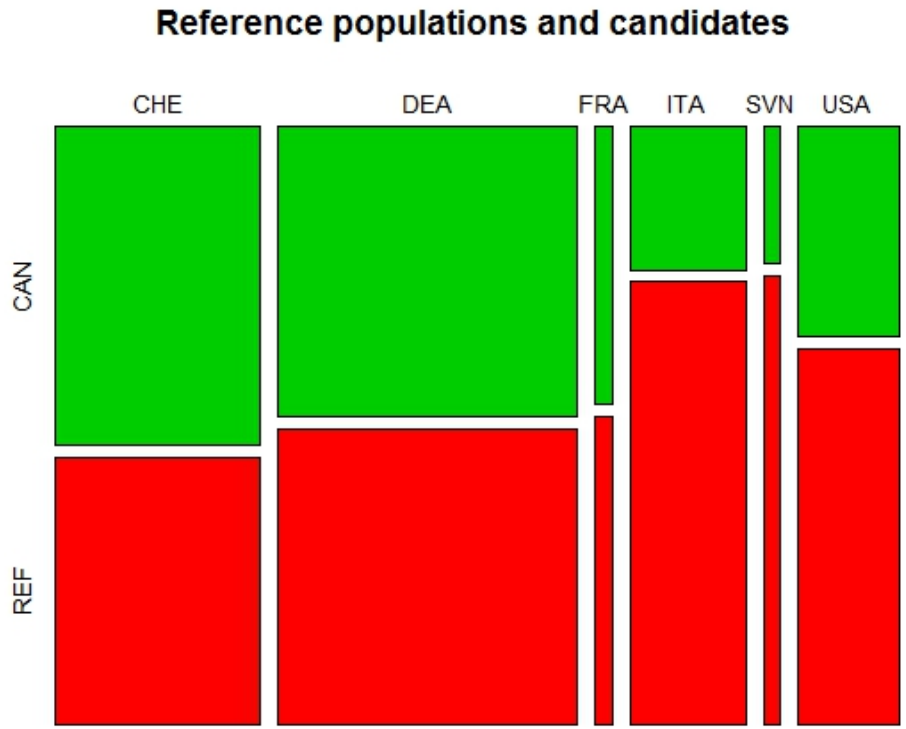
- Used to evaluate animals
- Now we evaluate DNA “chunks”
- An animal is just a “collection” of DNA chunks



An International effort

- 7 countries involved
- Official service from Interbull since dec. 2011
- Intergenomics proofs official in 3 countries
- In 4 countries national computations on international data
- The future: a family of Intergenomics certified systems of evaluations

Size, after all, matters..

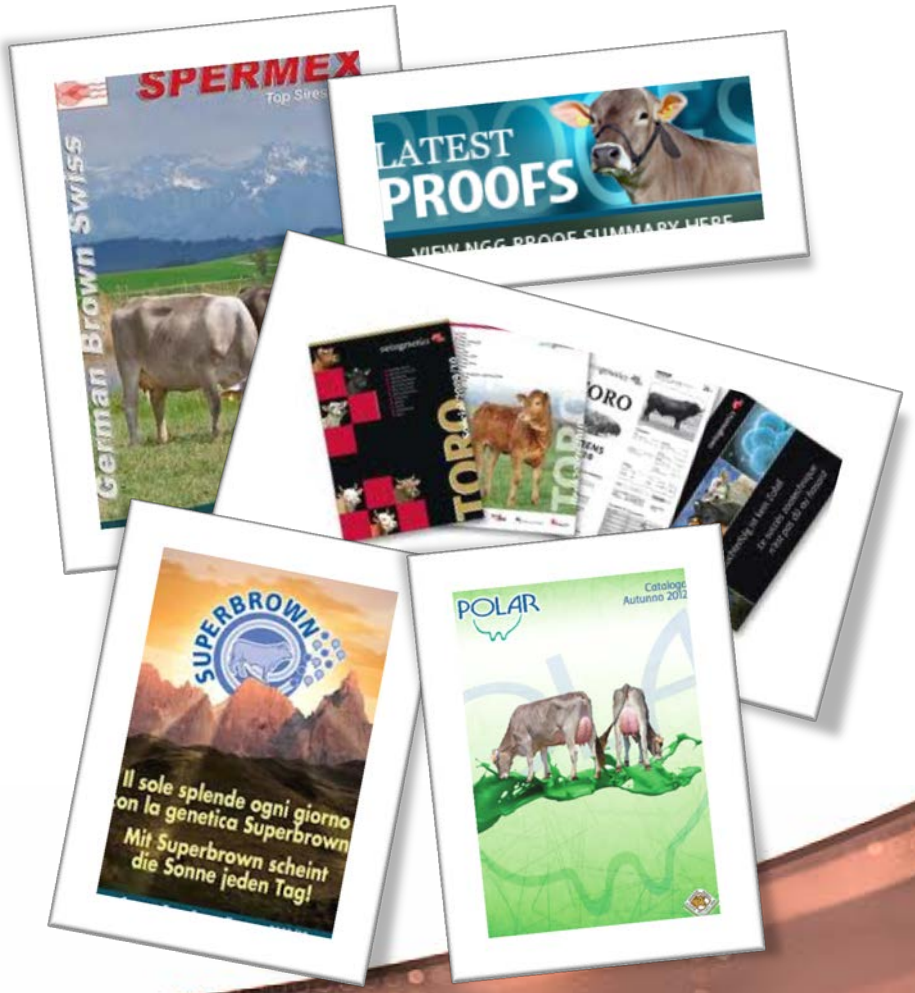


Why are all part of Intergenomics?

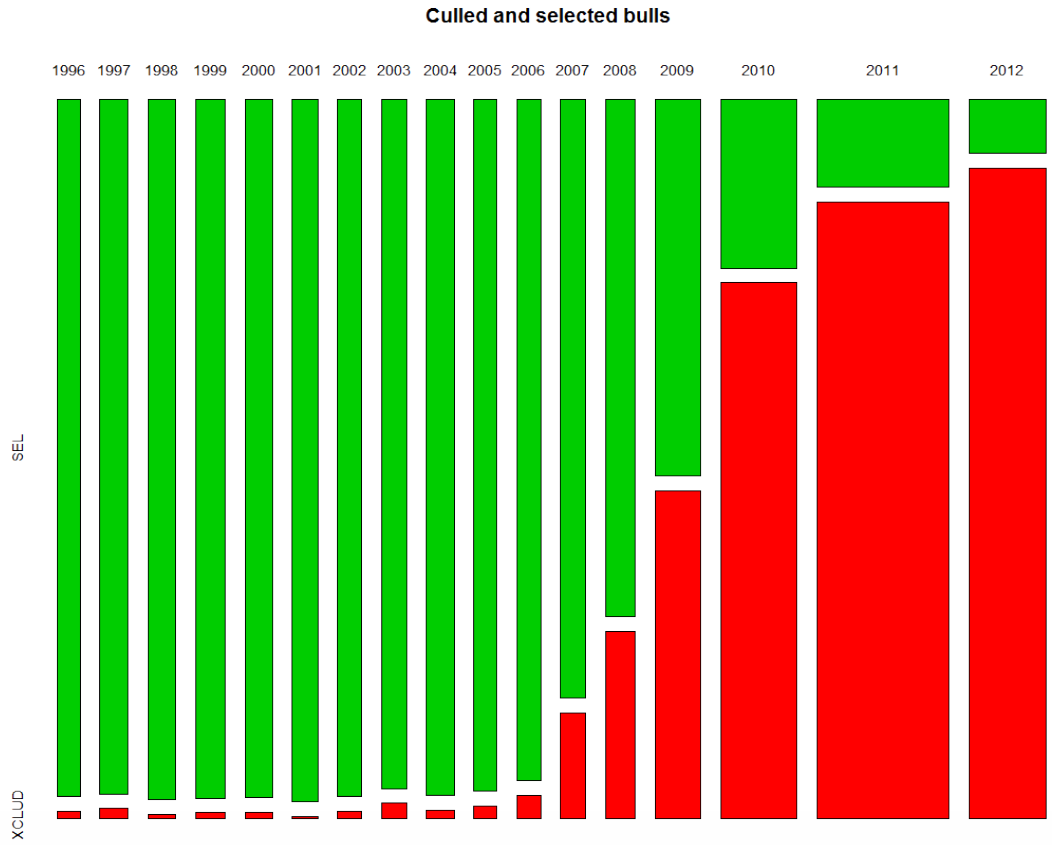
- Technical reasons
  - Genotype exchange + common computations
  - Best possible estimation of foreign bulls values on national scale

Why are all part of Intergenomics?

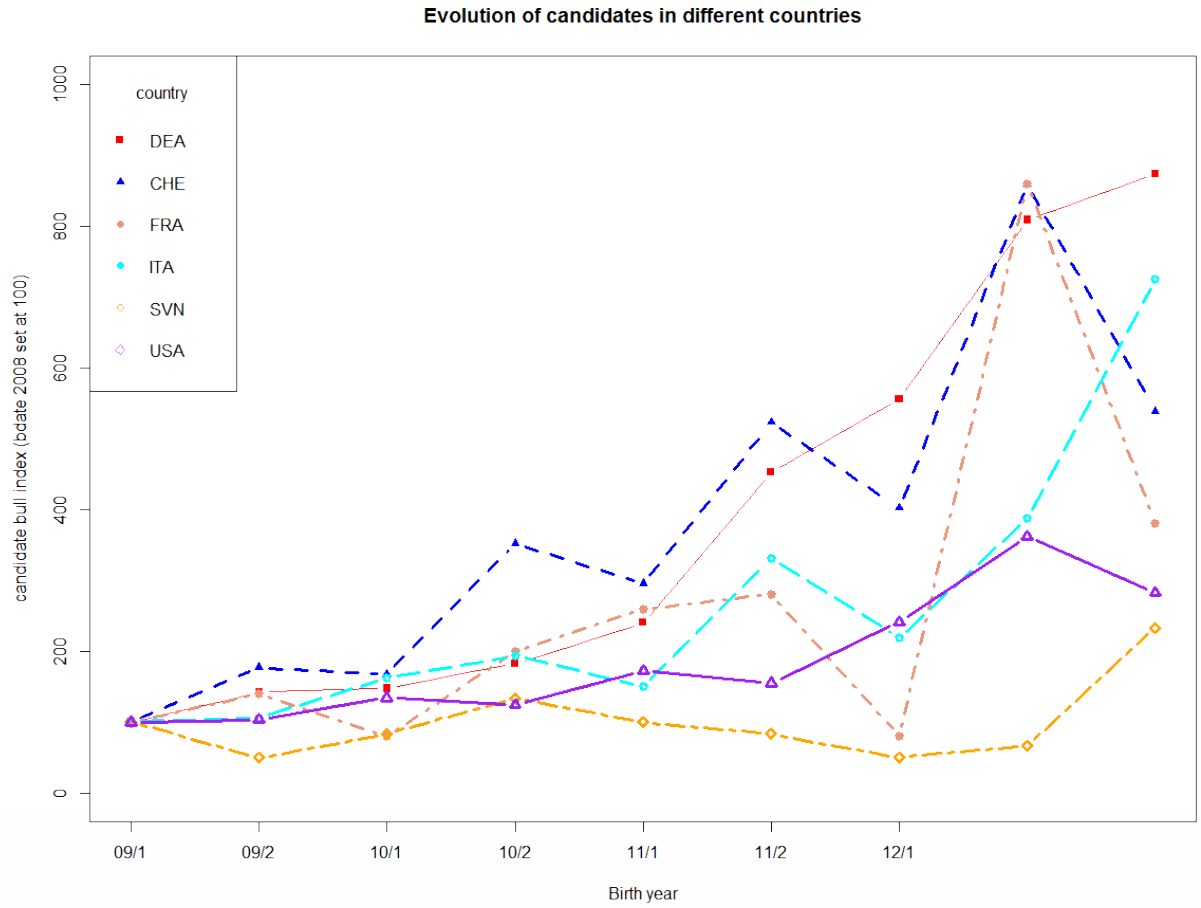
- practical reasons
  - The only way to have national genomic sires in foreign lists (important in order to export semen)



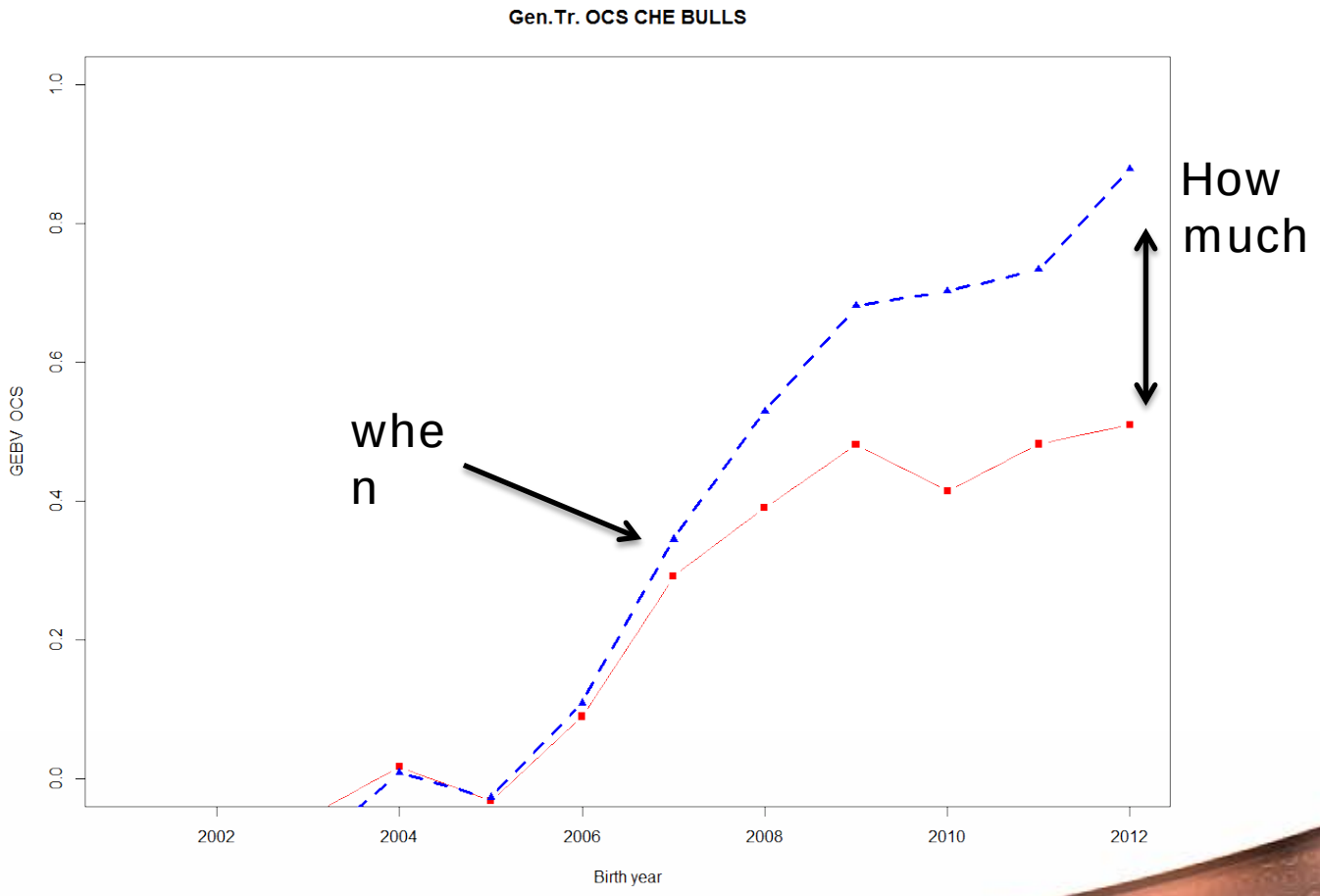
The industry reacted fast



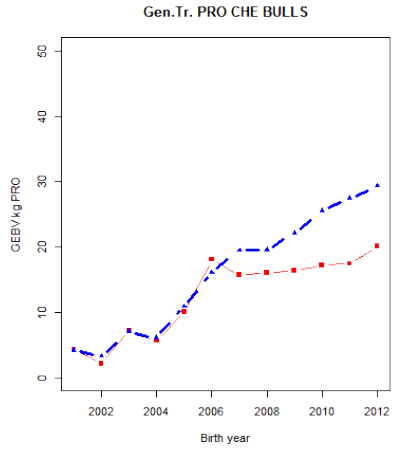
Different trends in different countries

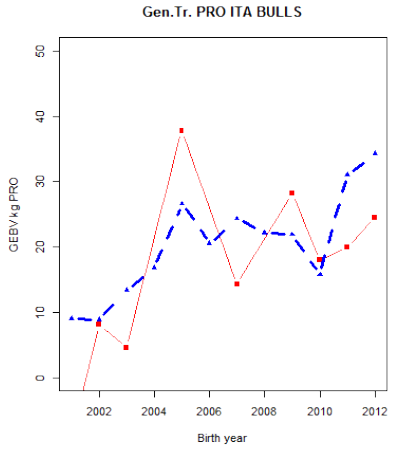


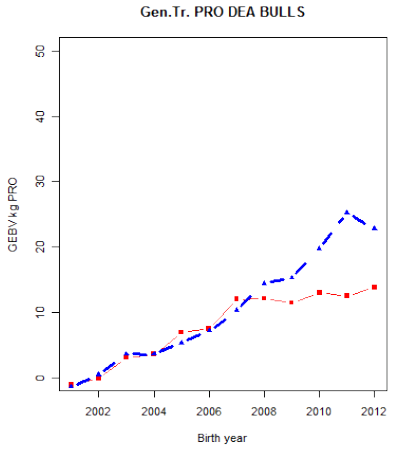
Which intensity of selection?

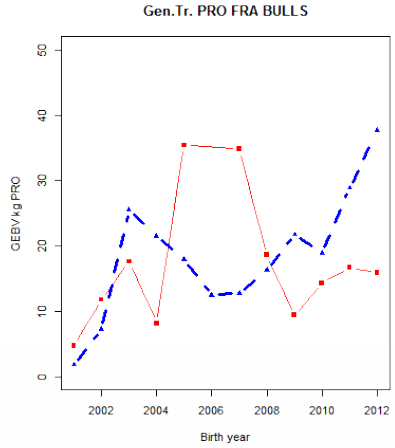


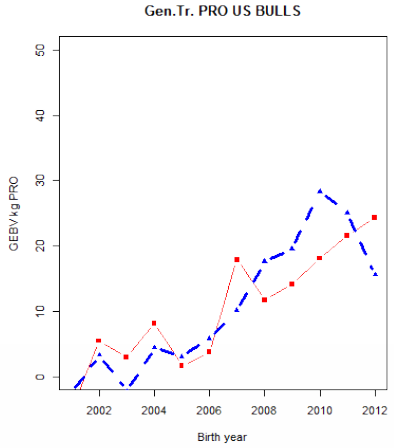
Which intensity of selection? Protein



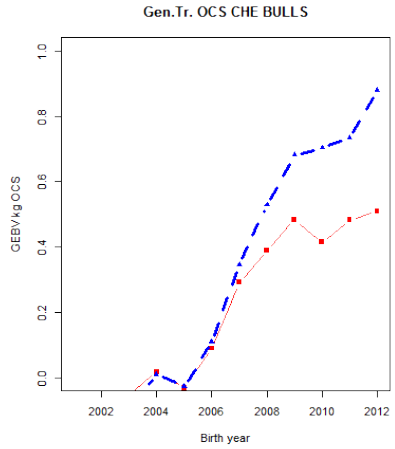


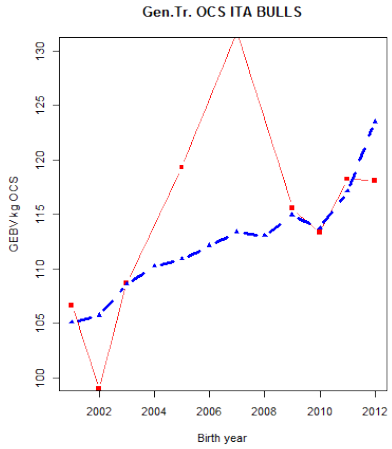


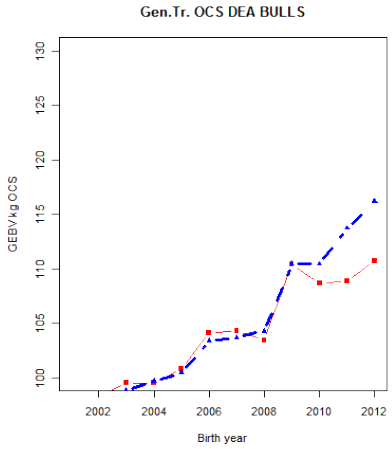


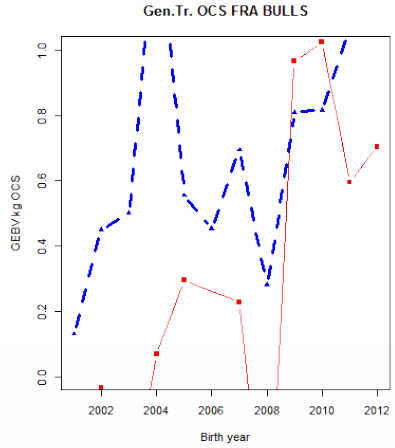


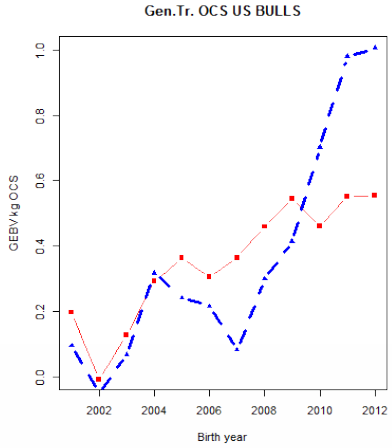
Which intensity of selection? Final Score



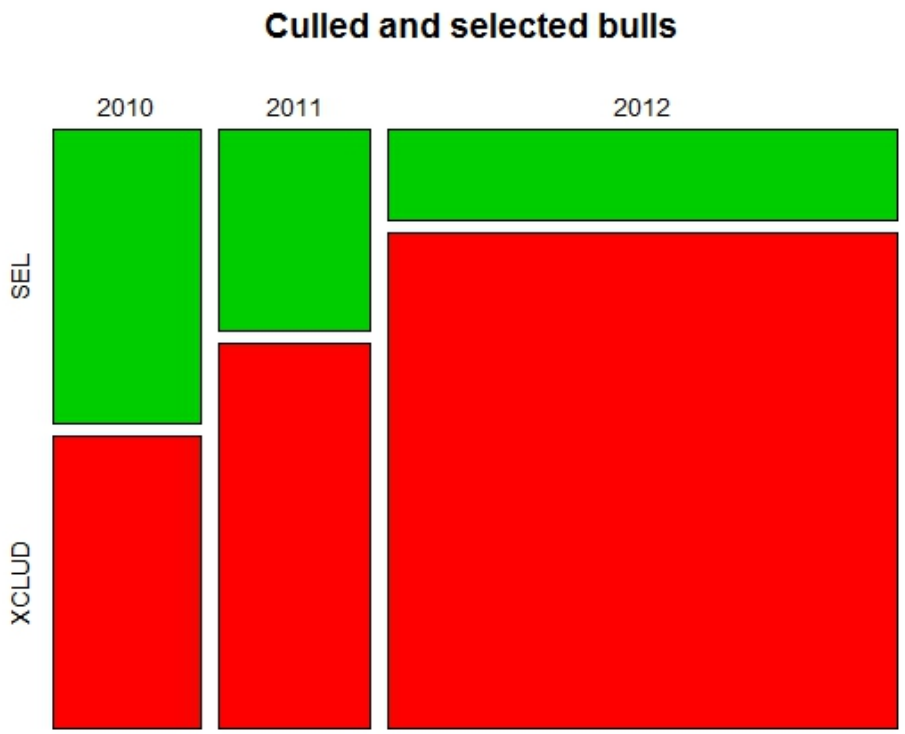




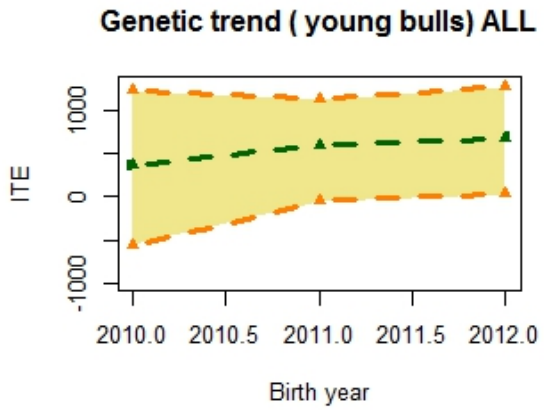


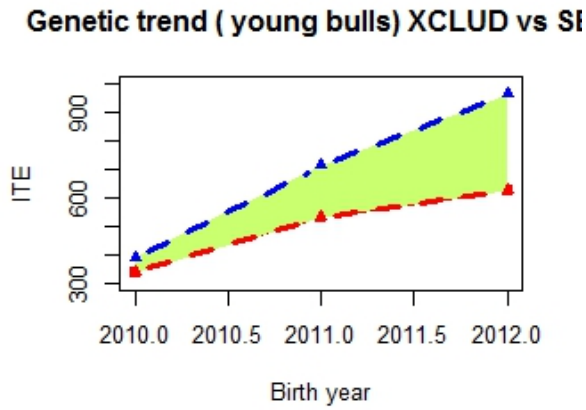


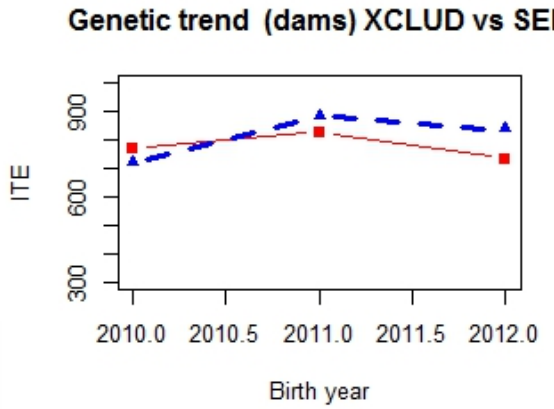
A detailed example: ITA
(all data including very young bulls)

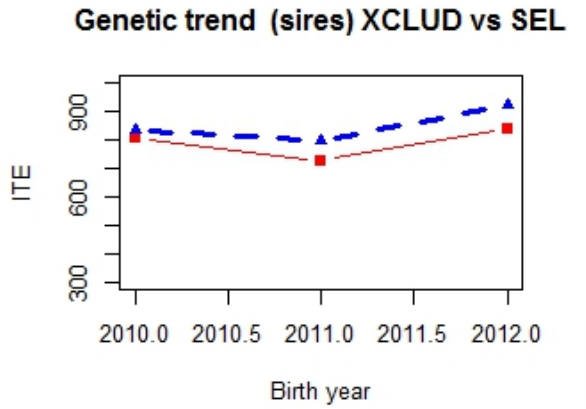


Genetic trends

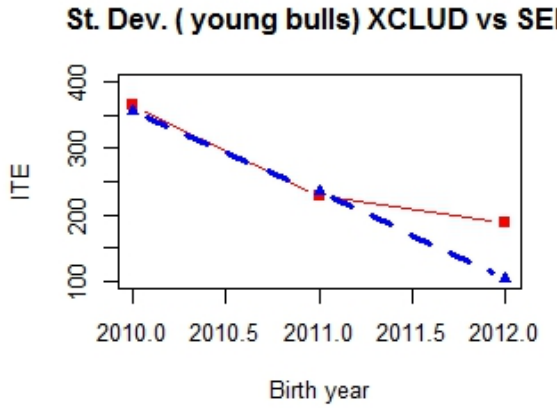


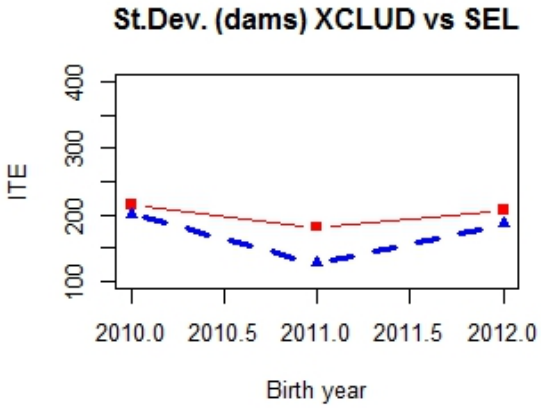


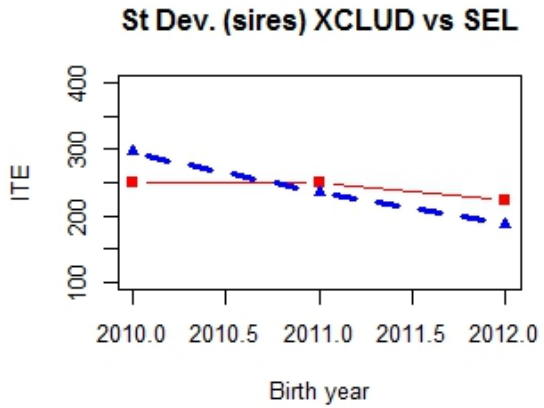




A uniform group of selected bulls







Same proof (protein kg), different sires?

ELENCO TORI PROVATI IN ITALIA

15 record visualizzati su **1554** totali

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Nome	Matricola	ITE	Rank	At%	Latte	Gr kg	Gr %	Pr Kg
HURAY	DE000935830301	1207	99	95	1524	52	-0.11	
MOIADO	ITBZ0000582001	1165	99	99	715	43	0.20	44
MIKE	IT021001490006	1074	99	90	1106	61	0.22	
HENRY	IT021001490949	1071	99	89	1070	11	-0.41	42
MILKSTAR	IT021001423860	1065	99	90	1695	77	0.12	62
HUCOS	DE000912484731	1058	99	97	1075	8	-0.45	36
HUSSLI	DE000808024689	1052	99	98	1165	48	0.01	50
PRONTO	US000000191184	1019	99	99	783	29	-0.03	27
NESTA	IT024000366344	1006	99	96	410	3	-0.20	
POSTER	IT022000130210	993	99	97	760	33	0.04	43
ETMARK	IT021001495174	979	99	87	706	18	-0.14	
ALCIONE	IT022990015688	974	99	88	1052	16	-0.34	35
POTERE	IT072990060978	970	99	89	918	35	-0.02	42
HUNTO	DE000936043055	969	98	91	648	18	-0.11	36
PROSTAR	DE000937661793	967	98	88	958	33	-0.08	32

=visualizza dati toro =foto toro/figlia =p

Lista completa

ANARB

intergenomics 2.0

- Genotype INPUT
  - NOW: mandatory to send ITB all genotypes of bulls older that 12 months
  - 0.5 ALL genotypes will be sent to ITB
- Genotype OUTPUT
  - NOW: only genotypes in ref population are sent back to countries
  - 2.0 ALL genotypes will be sent to countries
- INTERGENOMICS® label
  - NOW: Every GEBV computed from Intergenomics pool of genotypes is already partially international
  - 2.0 INTERGENOMICS ® label will appear on ALL genomic evaluation systems if
    - Based on Intergenomics genotype pools
    - Subjected to a specific quality control done by Intergenomics Technical group and ITBC

Conclusions

- Genomics is changing the rules of the game
- intergenomics is providing an innovative tool, in place and working
- The industry is reacting FAST 
- The use of GEBVs are producing so far expected outcomes
- The future is open to 

ideas

Thanks for the attention