



IRISH CATTLE BREEDING FEDERATION

***Ireland's beef genetic
improvement program and
hopes for INTERBEEF***

Ross Evans

Profile of beef production in Ireland

Beef herd 2011 births		
	Births	%
Total	846,714	
Pedigree registered	35,354	4%
Same sire x dam beef breed	295,799	35%
Different sire x dam beef breed	515,561	61%
Breed of sire	%	
Charolais	38%	
Limousine	32%	
Angus	8%	
Belgian Blue	8%	
Simmental	5%	
Hereford	4%	
Shorthorn	1%	
Blonde d'Aquitaine	0.9%	

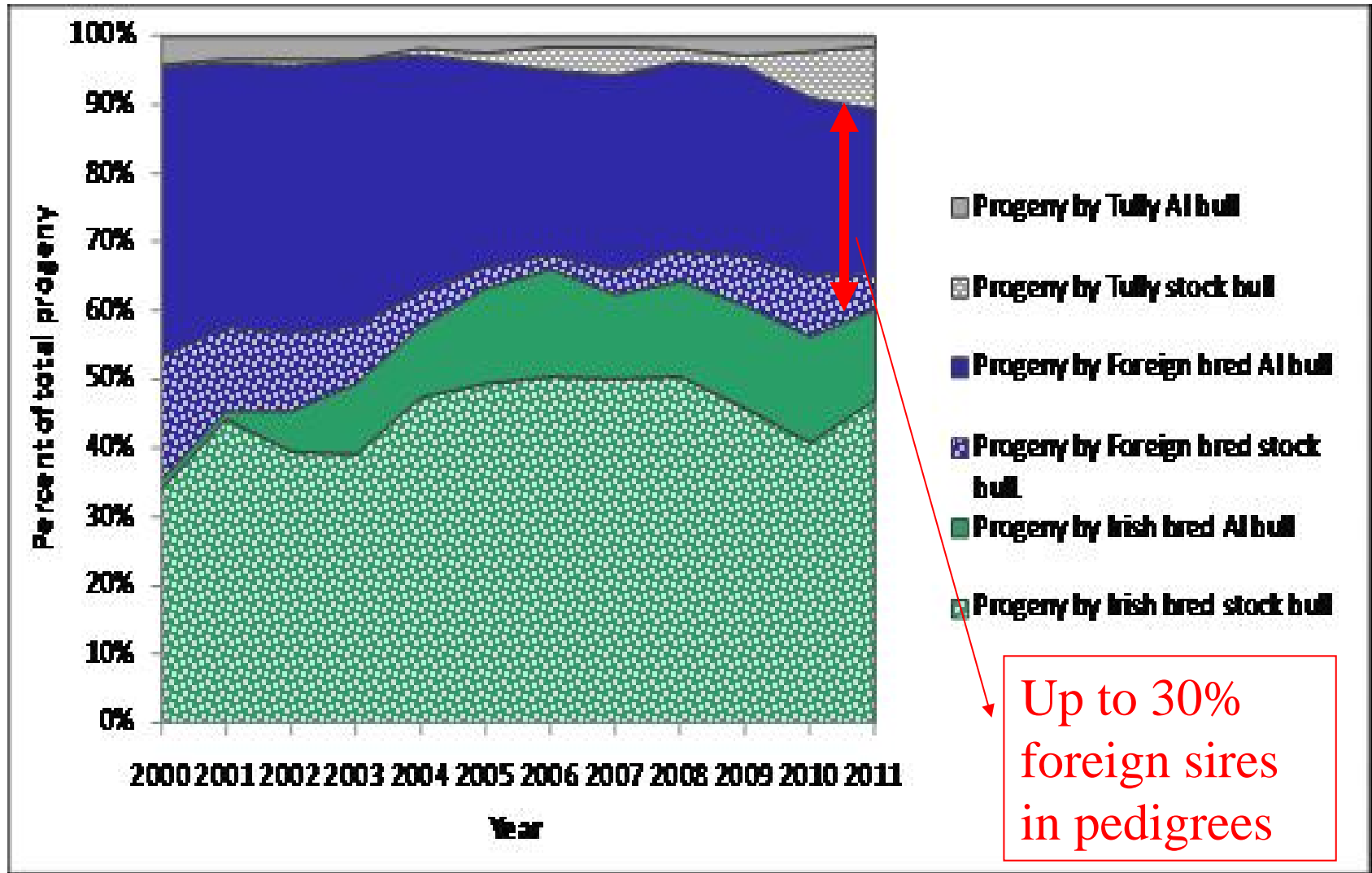
Dairy herd 2011 births		
	Births	%
Total	1,084,235	
Dairy dam x Beef sire	386,851	36%
Breed of sire	%	
Holstein-Friesian	54%	
Angus	13%	
Hereford	9%	
Limousine	6%	
Friesian	5%	
Charolais	3%	
Belgian Blue	3%	
Jersey	2%	

ICBF genetic evaluation

Category	Trait	Source of information	Data in evaluations
Calving Traits	calving ease	Farmer	3,686,371
	mortality	Farmer	3,624,756
	Gestation	Industry link up	319,840
Weanling Traits	direct weaning wt	Industry link up, farmer	514,953
	livewt	Industry link up	520,239
	Calf price per kg	Industry link up	320,359
	linear	ICBF technicians	140,991
Carcass Traits	feed intake	Tully test station	3,977
	carcass weight	Industry link up	1,283,510
	carcass conformation	Industry link up	1,283,510
	carcass fat	Industry link up	1,283,510
Maternal Traits	age first calving	Industry link up	255,102
	maternal weaning wt	Industry link up, farmer	155,349
	cow calving interval	Industry link up	344,336
	cow survival	Industry link up	443,124
	cull cow weight	Industry link up	138,314

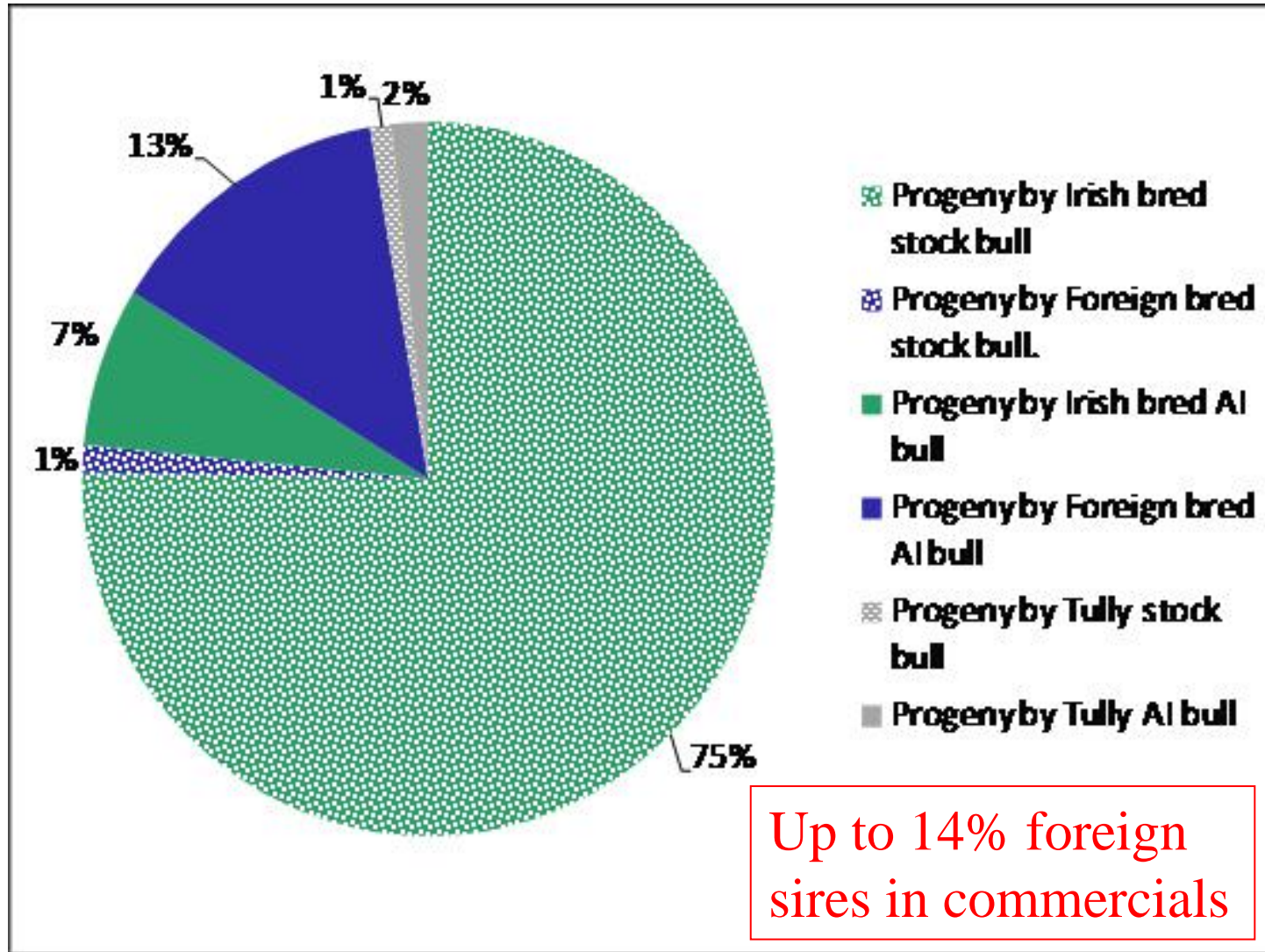
Evaluations are multi-trait & multi-breed

Origins of bulls used in pedigree herds



Up to 30% foreign sires in pedigrees

Origins of bulls used in commercial herds



Current approach to using foreign data

- Foreign ebvs (where available) are integrated into the Irish evaluation as correlated traits (MIX99)
- Direct and maternal weaning weight
 - FRA 7 breeds, UK 4 breeds
- Muscle and Skeletal
 - FRA 7 breeds
- Ultrasound Muscle
 - UK 4 breeds

Participation in INTERBEEF

- Spring 2012:
 - animals with weaning weight: 500,000
 - pedigree file created: 1,250,000
 - Loaded to INTERBEEF database
 - 24 date of birth anomalies IRL & FRA
 - Status: to be rectified

Wish list from INTERBEEF

1. Access to INTERBEEF pedigree file to correct foreign animal pedigrees and dates of birth
2. Access to ebvs for a representative sample from each country exporting germplasm to Ireland: currently high likelihood of selection bias
3. International evaluation including Irish data available to Irish beef farmers

Technical issues for home national evaluation centres

- INTERBEEF evaluations likely performed by trait and by breed
- National evaluation centres have different evaluation structures
 - Some centres: single trait evaluations
 - Other centres: multi-trait evaluations
- How to integrate ebvs from single trait INTERBEEF evaluation into multi-trait domestic evaluation with >20 traits?
 - Correlated trait?

Genomic selection

- 2,500 Illumina HD genotypes from AA, BB, HE, LM, CH, SM
- Across-breed (one step) genomic selection approach
- Within breed genomic predictions are good (but room for improvement)
- Need an international approach
 - Accurate (international) phenotypes
 - Large database of genotypes
- Sequencing of founder animals as part of international initiative
 - Genomes Canada Project / Ben Hayes database

Thanks for listening!

