

Select Sires' Experiences with SNP Parentage Testing

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Select Sires, Inc.

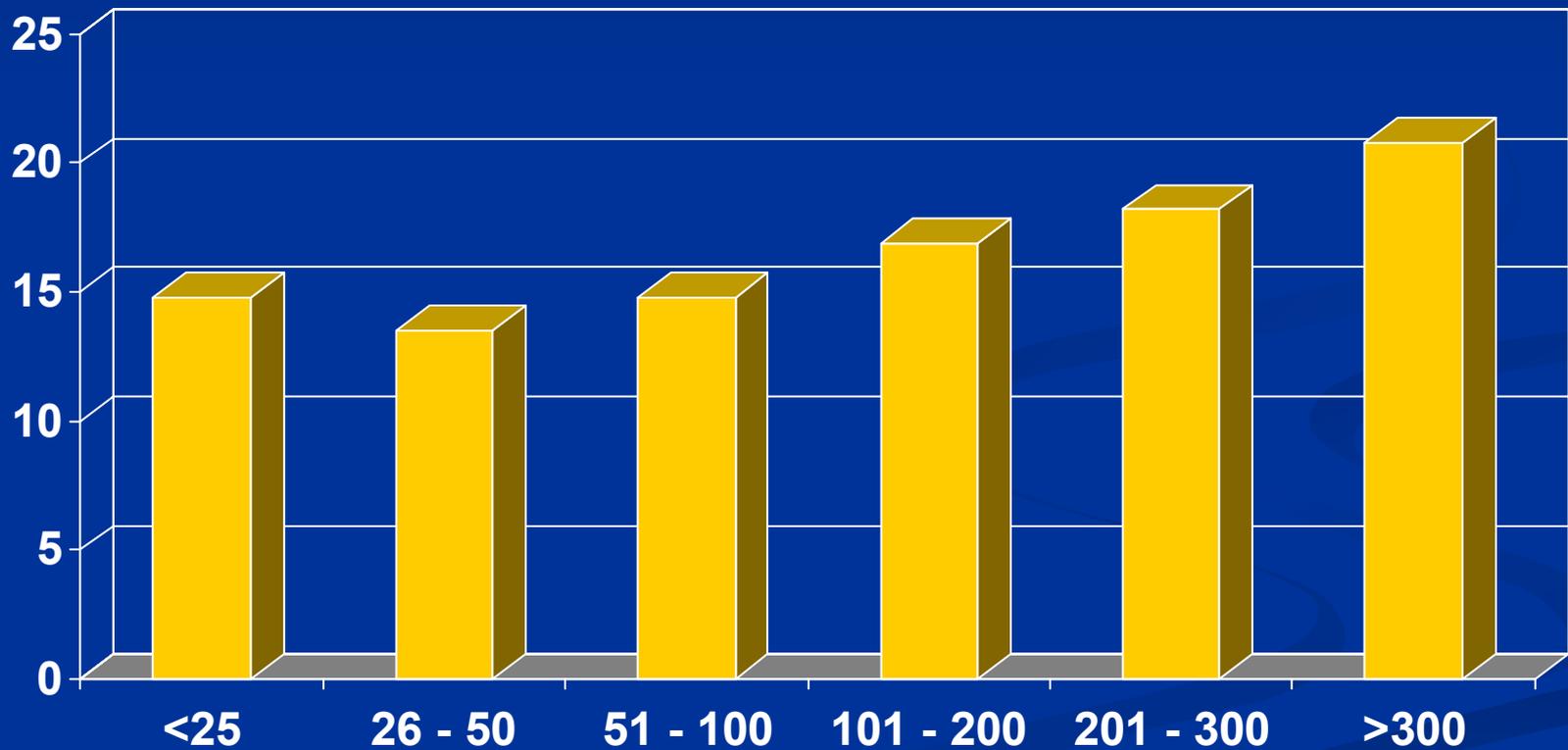
USDA Sire Mis-ID Research

- Herd heritability had 40% correlation with rate of sire mis-ID.
- Estimated 15% sire mis-ID rate.
- Mis-ID rate was higher in larger herds.



Misidentification and Herd Size

■ Predicted Misidentification



Parentage Verification Research

- Reviewed literature and made theoretical estimate of impact on sire BV estimates.
 - Assumed PT size of 57 daughters.
 - Parentage ID error rate of 11%.
 - 30% heritability.
 - Showed ID errors **reduced** the standard deviation of **sire EBV by 9%**.

Visscher, et al., 2002, J Dairy Sci 85:2368-2375



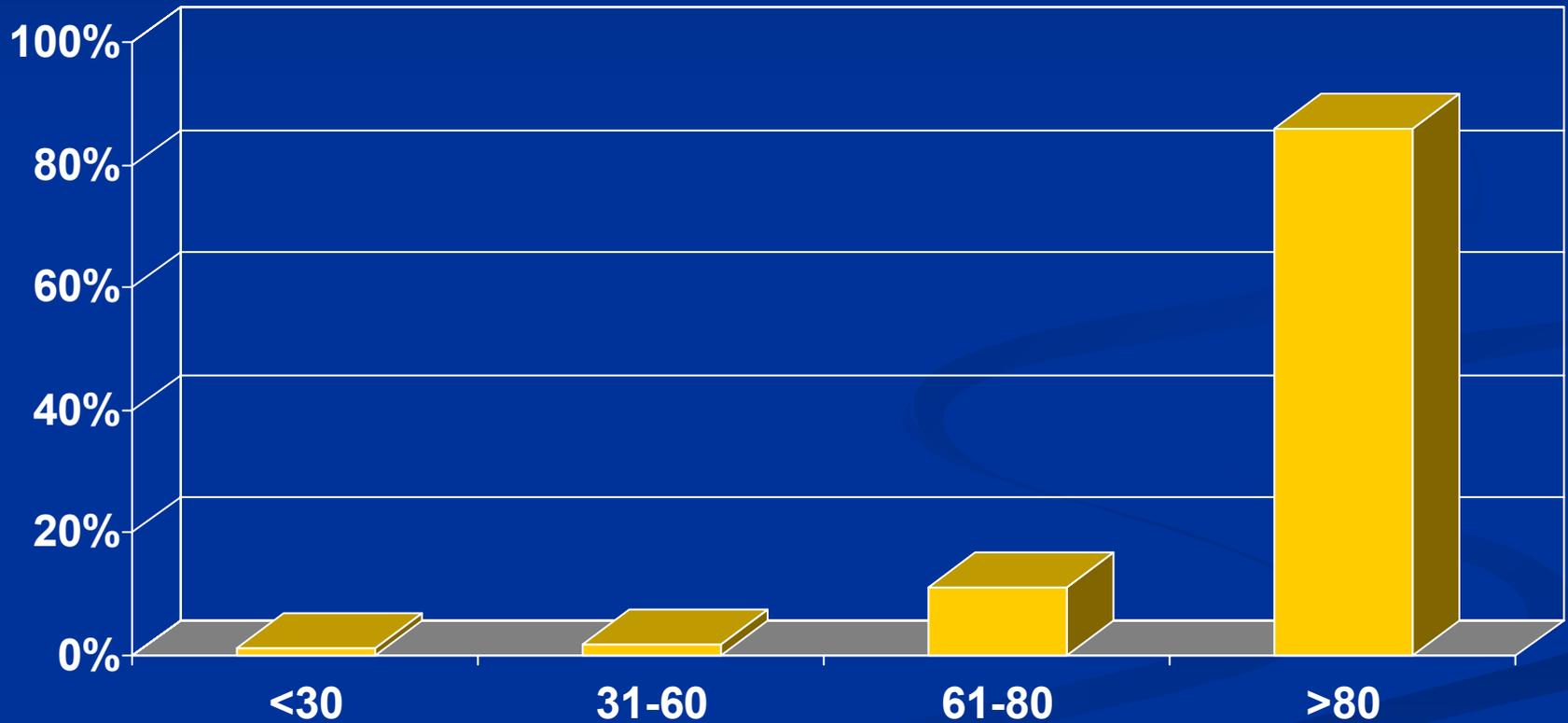
Parentage Verification

- Mission: Verify sire ID in daughters of the most promising bulls currently being progeny tested.
- Started Sep. 1, 2007 and is continuing.
- Tested 8,491 animals.



Number of Loci per Sample

■ # of Usable Genotypes



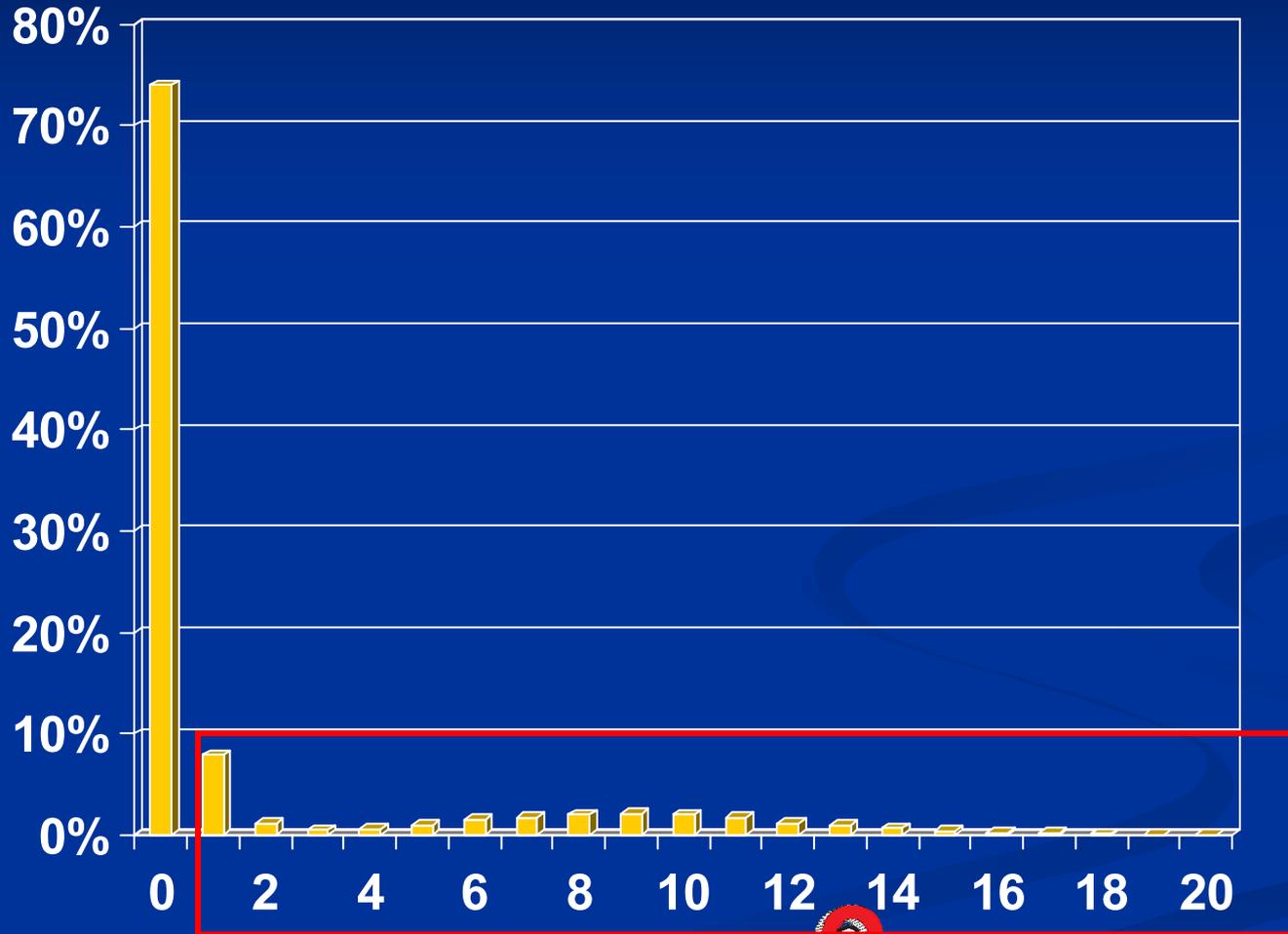
Results by Sample Type

	Nasal Swab	Ear Tag	Total
%No Result	3.5%	1.2%	1.3%
Avg. # of Loci	79	85	85



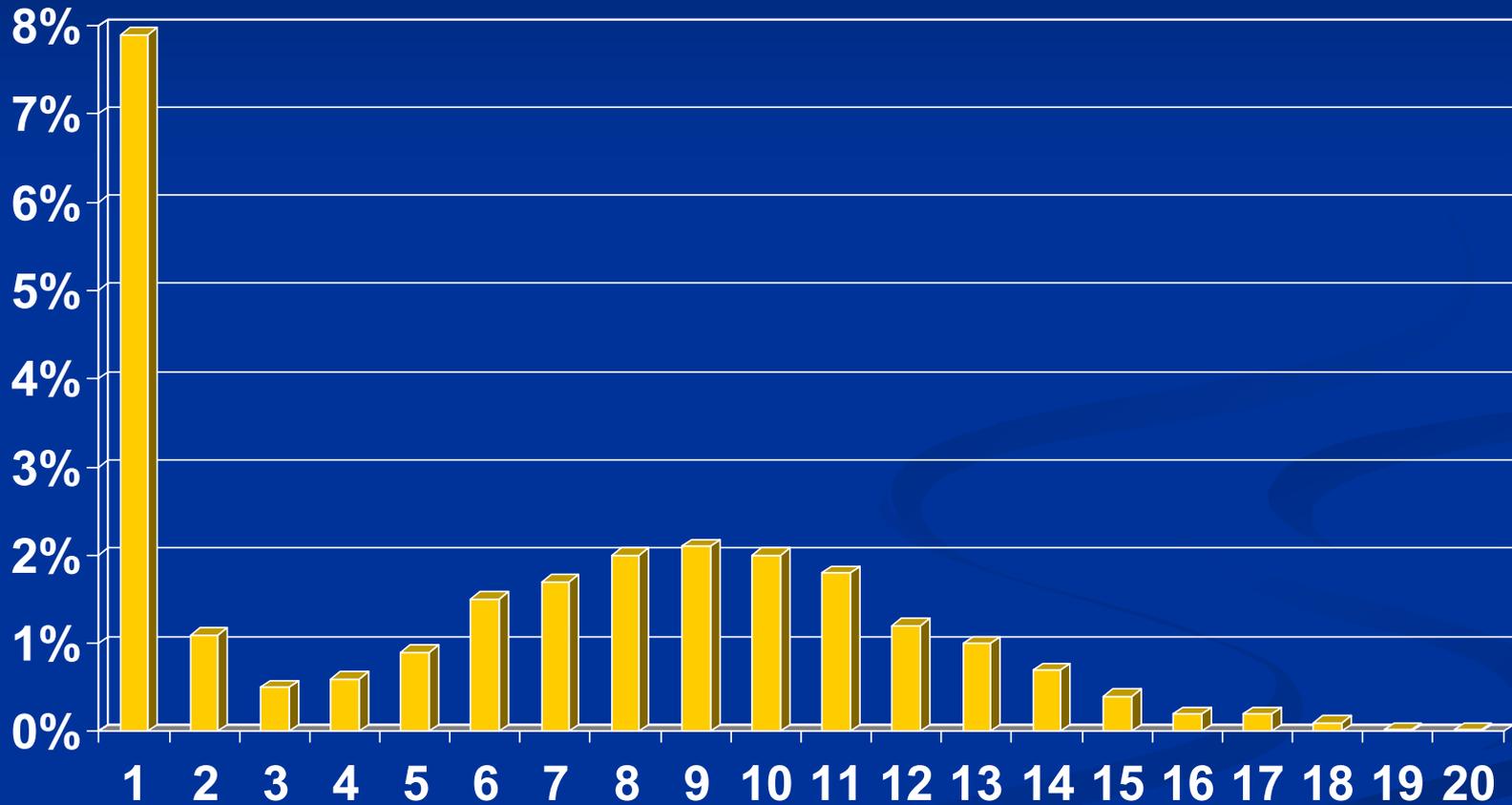
Distribution of Results

■ # of Exclusions



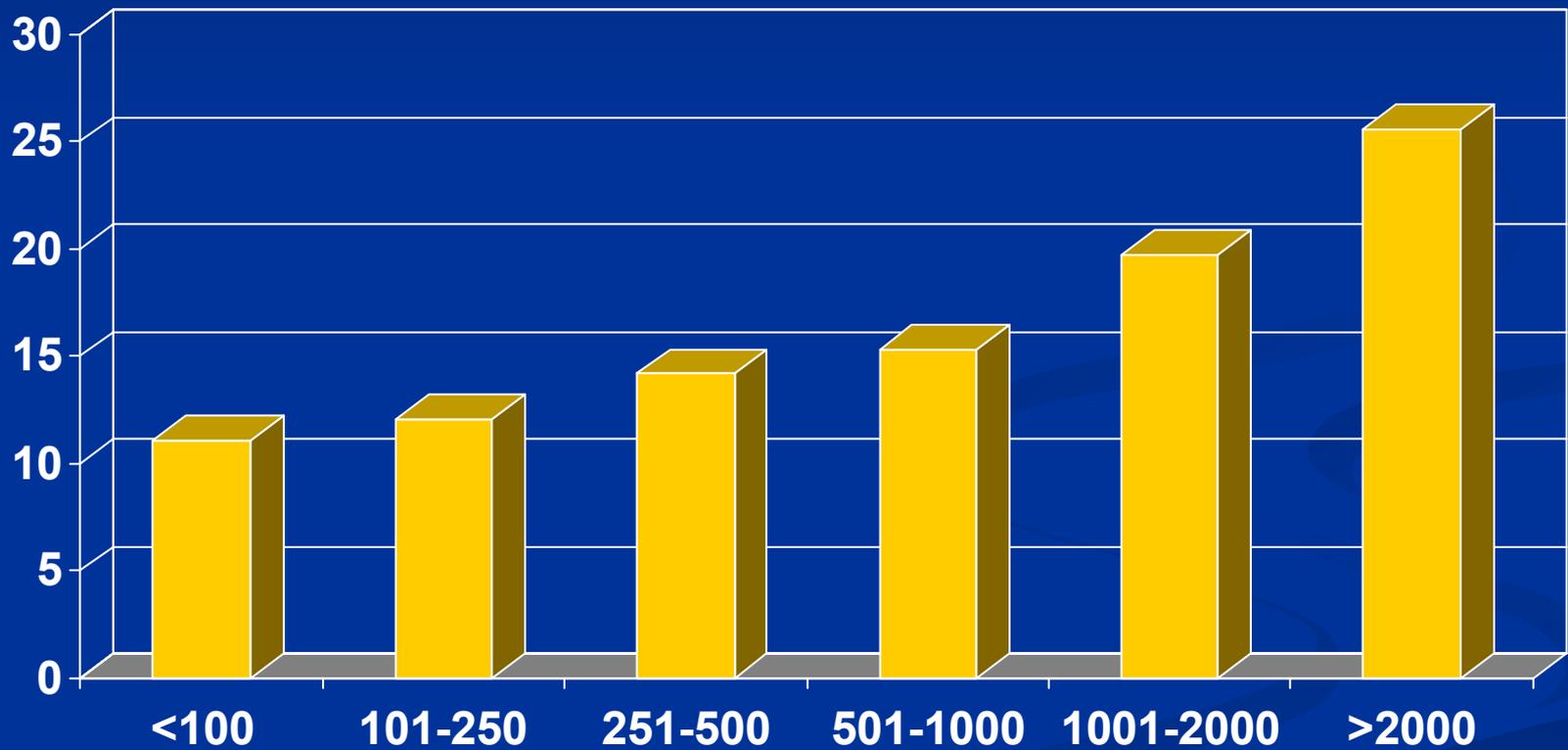
Distribution of Results

■ # of Exclusions



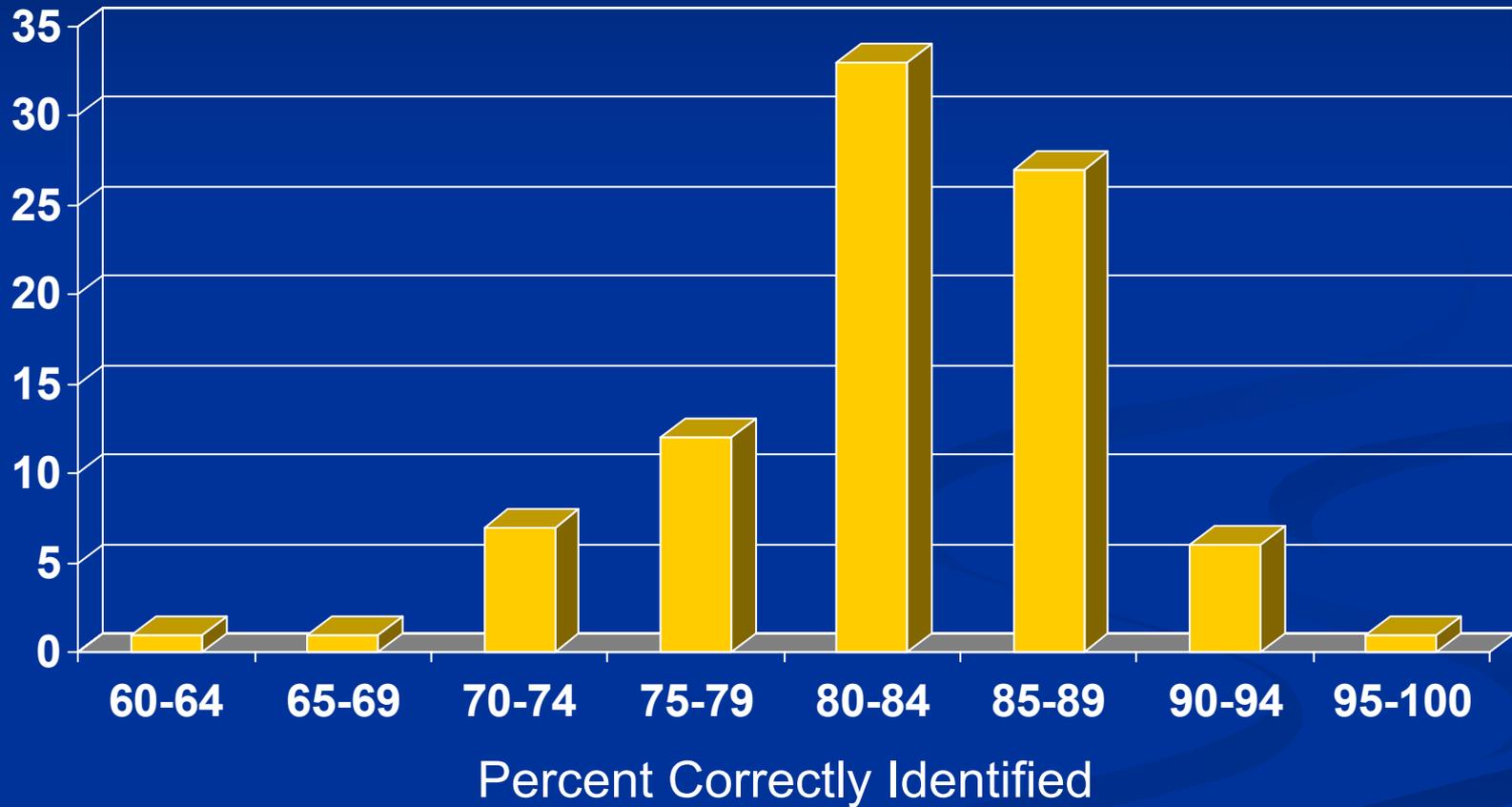
Mis-ID by Herd Size

■ % Misidentification



ID Accuracy by Sire

■ # of bulls



Lessons Learned

- Samples from Typi-Fix tags worked better than nasal swabs.
- Farmer collection doesn't work.



Record Correction

- For records where the reported sire doesn't qualify, change sire ID to unknown.
- For registered cows, work through the Holstein Assoc. to follow up with breeder and get record corrected.
- Record correction takes patience and persistence.
 - Need official ID!
 - Need a 2nd herd visit to get the records corrected at the farm level.



Producer Acceptance

- Only a few negative reactions.
- Most producers want to know “how they’re doing”.
- Several examples of where test results have led to valuable management changes!



Thank you!