Agriscience Quiz Objectives: by the end of this unit, students will be able to…

- Summarize the process by which modern breeds of livestock and other domesticated animals were created.
- Provide details on the cellular mechanisms that enable the formation of breeds of domesticated animals.
- List the two most important factors for why breeds emerged.
- Identify the key traits and describe each of the following: Holsteins, Jerseys, Brown Swiss, Ayrshires & Guernseys, Milking Shorthorn
- Identify the main purpose of breed associations and summarize how their data enables breeds to improve.
- Define and provide examples of each of the following: a) Mutation b. Random Drift c. Selection d. Crossbreeding e. Selection AND Crossbreeding
- Compare and contrast continuous and discontinuous traits, and explain how these differences affect breeding predictability.
- Define each of the following: a. Bell curve b. Heritability c. Environmental Variance d. Outlier e. Correlation
- Explain how heritability values are used to inform breeding decisions in agriculture.
- Explain the difference between negative correlation and positive correlation and connect these differences to breeding decisions in agriculture.
- Summarize the meaning of Galton's Law and explain how this would affect breeding practices.
- Define each of the following and explain their importance to breeding decisions: a. Sire Summary b. Predicted Transmitting Ability c. Standard Transmitting Ability d. Art. Insemination
- Use a sire summary report, PTA scores, and STA scores to make sire selections appropriate to the needs of a herd and the heritability of the affected traits.

R-E-W BUCKEYE-ET

TPI +1896

USA 130588960 100%RHA-NA TV TL 12-25-00
Sire: MARA-THON BW MARSHALL-ET +1701M
USA 2290977 100%RHA-NA TV TL 86 GM
Dam: MAYERLANE RUD BUBBLE-ET +1795
USA 120536177 100%RHA-NA TV 86 VV+VV GMD DOM

PRODUCTION		%	%R	SIRE	DAM	DAU	GRP
Milk	+1847		88	+1916	+1811	27319	25492
Fat	**+49**	-.07		+41	+59	984	936
Pro	**+53**	-.01		+44	+53	832	775
05-2006	90 DAUS	56 HERDS				23 %RIP	100 %US
PL	**+1.6**		66	+0.1	+1.5	SCE 6%	69 %R
SCS	**2.87**		75	2.92	3.02	DCE 6%	58 %R
NM$ +541	CM$ +537	FM$ +549				DPR -.3%	58 %R
TYPE			**%R**	**SIRE**	**DAM**	**DAU SC**	**AASC**
Type	**+2.33**		87	+2.00	+1.88	77.5	80.7
UDC	**+2.16**			+1.94	+.99		
FLC	**+2.06**			+2.35	+1.06	BD +1.52	D +1.50
05-2006	78 DAUS	54 HERDS		EFT D/H 1.7			

Breeder R-E-W Farm, CT ACTIVE
Owner The Semex Alliance, CAN 200HO4779/S: 200
Controller Semex Alliance BUCKEYE

TRAIT	STA	2	1	0	1	2
Protein	2.73	High				
Fat	2.13	High				
Final Score	3.33	High				
Productive Life	1.78	High				
Somatic Cell Score	1.77	Low				
Stature	1.92	Tall				
Strength	1.14	Strong				
Body Depth	1.21	Deep				
Dairy Form	0.91	Open Rib				
Rump Angle	0.49	Sloped				
Thurl Width	0.90	Wide				
R Legs-Side View	1.54	Straight				
R Legs-Rear View	2.52	Straight				
Foot Angle	1.45	Steep				
Feet & Legs Score	2.26	High				
Fore Attachment	2.32	Strong				
Rear Udder Height	2.93	High				
Rear Udder Width	2.35	Wide				
Udder Cleft	2.52	Strong				
Udder Depth	1.98	Shallow				
F Teat Placement	1.17	Close				
Teat Length	0.25	Short				

PURSUIT SEPTEMBER STORM-ET

TPI +1580M

CAN 6820564 100%RHA-NA RC TV TL 09-03-97
Sire: MAUGHLIN STORM-ET +1463M
CAN 5457798 100%RHA-NA B/R TV TL GM
Dam: GLEN DRUMMOND SHIMMER-ET +1210C
CAN 6185591 100%RHA-NA RC

MACE PRODUCTION		%	%R	SIRE	DAM	DAU	GRP
Milk	+433		95	+245	-455	25704	25258
Fat	**+56**	+.16		+40	+17	991	936
Pro	**+9**	-.01		+8	-13	767	758
05-2006	577 DAUS	431 HERDS				56 %RIP	37 %US
PL	**+0.7**		77	+0.7	+0.3	SCE 9%	98 %R
SCS	**2.78**		91	2.76	2.94	DCE 10%	80 %R
NM$ +284	CM$ +277	FM$ +298				DPR -1.2%	64 %R
MACE TYPE			**%R**	**SIRE**	**DAM**	**DAU SC**	**AASC**
Type	**+2.31**		89	+1.67	+1.45	81.4	84.1
UDC	**+1.57**			+1.57	+1.22		
FLC	**+2.91**			+1.68	+1.39	BD +2.19	D +2.03
05-2006	278 DAUS	209 HERDS		EFT D/H 2.6			

Breeder Pursuit Partners, CAN ACTIVE
Owner The Semex Alliance, CAN 200HO3067/200
Controller Semex Alliance SEPTEMBER STORM

Protein	0.46	High
Fat	2.43	High
Final Score	3.30	High
Productive Life	0.78	High
Somatic Cell Score	2.46	Low
Stature	2.73	Tall
Strength	1.59	Strong
Body Depth	1.78	Deep
Dairy Form	1.36	Open Rib
Rump Angle	0.44	High Pins
Thurl Width	1.56	Wide
R Legs-Side View	1.96	Straight
R Legs-Rear View	4.18	Straight
Foot Angle	2.73	Steep
Feet & Legs Score	2.66	High
Fore Attachment	2.36	Strong
Rear Udder Height	2.01	High
Rear Udder Width	1.91	Wide
Udder Cleft	0.12	Weak
Udder Depth	1.48	Shallow
F Teat Placement	1.32	Close
Teat Length	0.52	Long

Which bull would improve your herd the most?

ME (mature equivalent) milk yield	0.30
ME fat yield	0.30
ME protein yield	0.30
Fat percent	0.58
Protein percent	0.51
Lactose percent	0.43
Age at first calving	0.14
First calving interval	0.05
Lifetime actual milk yield	0.15
Lifetime actual fat yield	0.15
Lifetime actual protein yield	0.14
Days of productive life	0.13
Somatic cell score, lactation average	0.10
Lifetime net income	0.20
Productive life, USDA	0.085