

Answer on Question #54505 – Biology – Genetics

Question:

A roan bull is bred to three cows. Cow A has the same genotype as the roan bull. Cow B is red and cow C is white. What proportion of roan cows are expected in the offsprings of each group of cows?

Answer:

Color inheritance in cows and bulls is an example of codominance. Genotype of white cow is WW, genotype of red color is RR, genotype of roan color is WR.

So, the roan bull has genotype WR, while three cows have genotype WR, RR, WW. The Punnett squares are:

Roan cow Roan bull	W	R
W	WW	WR
R	WR	RR

50% of offsprings will be roan.

Red cow Roan bull	R	R
W	WR	WR
R	RR	RR

50% of offsprings will be roan.

White cow Roan bull	W	W
W	WW	WW
R	WR	WR

50% of offsprings will be roan.