



With new genomic evaluations every month and a variety of genetic lists for Registered Jerseys based on Herd Register status, it may be difficult for breeders to know where a genetic evaluation ranks within the breed. As well, with a genetic base change in April 2020, dairy producers will need to become familiar with a whole new set of values as Predicted Transmitting Abilities (PTAs) are adjusted for bull, cow and heifer evaluations.

Fortunately, there is a quick reference tool available to sort genetic merit of heifers. Heifer Percentile Ranking Levels—commonly called P-levels—represent percentile rank for Parent Average (PA) Jersey Performance Index (JPI) for a heifer as compared to her peers born the same year. The P-level for genotyped heifers is based on Genomic JPI (GJPI).

P-levels can be found on performance pedigrees and progeny performance reports from the American Jersey Cattle Association (AJCA).

In this month's Jersey Jargon, we'll take a closer look at P-levels and explain how they can be used to compare genetic merit of young animals.

What is P-Level?

The P-level is a percentile ranking of the heifer's PA JPI, with values ranging from P0 through P9. The number corresponds to the percentile of the PA JPI. For example, a P9 heifer has a higher PA JPI than 90% of the heifers in her same birth year. In other words, heifers with P-levels of P5 or higher are above average (above 50%) for genetic merit.

Keep in mind, a heifer receives half of her PA JPI from her dam and half from her sire. Look at the genetic merit of both when making matings in order to maximize the genetic level of resulting progeny.

PA JPIs and their accompanying P-levels are updated by the AJCA with each genetic evaluation. After a heifer calves and has been in milk 45 days, she will no longer have a PA JPI, but rather will be assigned a JPI based on her own performance.

Tables showing values associated with different P-levels for heifers and bulls born 2015-2019 can be found on page 7 of the December 2019 Green Book (Jersey Genetic Summary). They can also found online at <https://greenbook.usjersey.com/>

Portals/2/2019/December/AF%26G-Reports/GBWebEdition.pdf.

A Similar Tool

Another tool that can be used to quickly identify genetic merit for bulls, cows and genotyped heifers is percentile rankings for Net Merit Dollars (NMS). Percentile is like P-level in that it provides a ranking relative to the rest of the population. Percentiles for cows and heifer are based on the current population with genetic evaluations. Percentiles for bulls are a comparison to bulls on the previous list of Active A.I. Jersey bulls.

Percentile ranking can be found on performance pedigrees and progeny reports as well, with the PTA or Genomic PTA information from the Council on Dairy Cattle Breeding (CDCB).

Genetic Base Change

Every five years, genetic evaluations of U.S. dairy cattle undergo a base change. This is a simple adjustment of the PTAs of bulls, cows and heifers for genetic progress that has been made during the most recent five-year period.

Currently, the reference animals for each breed are sire-identified cows that were born in the year 2010. These animals have average PTAs of zero for every trait

except somatic cell score, calving ease and stillbirth rate, which are centered at breed average rather than zero.

In April 2020, the reference group will become sire-identified cows that were born in the year 2015. It is important to note that the relative rankings of animals will not change. The base change is merely an exercise that keeps PTAs from getting larger and larger each year.

The CDCB anticipates that Net Merit Dollars for Jerseys will drop by 190 NMS on average with the genetic base change in April 2020. Therefore, a bull with a NMS of +600 today would have a NMS of +410 following the April genetic evaluations.

For more information on P-levels or percentile rankings, contact Cari Wolfe, AJCA Director of Research and Program Development, at 614/322-4453 or cwolfe@usjersey.com.

FEMALE	
PROGENESIS CHIEF 13745-ET	
JEB40003208854379	GT BBR 100 JH1F
BORN 08/12/2019	
AMERICAN ID EARTAG 13745 / 13745	P-LEVEL P9
	GFI 9.0%
CDCB GPTA 5 12/01/2019 ORECS 70NR 99KILE	
1374M 0.00% 66F 0.02% 53P 725CM\$ 703NM\$ 656FM\$	
7.3PL 0.9LTV 1.5DPR 3.3CCR 5.1HCR 2.84SCS 657GM\$	
AJCA 12/01/2019 GPTAT 72NR 2.3 CJUI 23.4 GJPI 66NR 223	
ST SR DF RA RW RL FA FU	
0.9 -0.3 2.0 L0.1 0.3 P0.1 S0.6 1.9	
RH RUW UC UD TP TL RTR RTS	
2.6 1.5 0.9 51.4 C1.3 L0.2	

FEMALE	
SHAN-MAR COMANCHE COMPARE-ET	
USA 067641497	
BORN 06/24/2017	
AMERICAN ID EARTAG 1497 / 1497	P-LEVEL P9
	EFI 8.8%
PA 1245M 75F 56P	
573CM\$ 542NM\$ 474FM\$	
3.1PL -1.1 JPI 43NR 160	
ST SR DF RA RW RL FA FU	
1.7 0.9 1.2 L0.6 0.6 S0.2 S0.5 0.3	
RH RUW UC UD TP TL RTR RTS	
0.5 0.9 0.1 50.4 C0.2 S0.3	

FEMALE		DHI HERD # 35-28-0997
KUTZ CHROME 14772		
JEB40003136660611	CONTROL # 14772	
BORN 04/20/2016		
AMERICAN ID EARTAG 14772 / 14772		
ELECTRONIC ID 840003136660611		EFI 7.3%
PPA 4098M 268F 164P / YD 3298M 222F 133P		
CDCB PTA 12/01/2019 2RECS 59NR 99KILE		
862M 0.14% 70F 0.04% 40P 630CM\$ 601NM\$ 541FM\$		
5.3PL -1.3LTV 1.9DPR 2.6CCR 2.5HCR 2.70SCS 580CM\$		
AJCA 12/01/2019 PTAT 52NR 1.8 JUL 12.0 JPI 50NR 191		
ST SR DF RA RW RL FA FU		
-1.0 -0.3 1.7 H0.3 0.1 S0.4 S0.2 1.2		
RH RUW UC UD TP TL RTR RTS		
1.4 1.2 0.7 S0.5 C0.9 L0.8 C1.0 B0.9		

Pedigrees for a genotyped heifer (top), non-genotyped heifer (middle) and non-genotyped cow (bottom), with P-levels highlighted in pink, GJPI or PA JPI highlighted in purple and NMS Percentile highlighted in green.