Pedigree
Questions & Answers

HOLSTEIN FOUNDATION
Est. 1980

Table of Contents

UPDATED AUGUST 2020

Introduction 3
Parts of a Pedigree 4
Test Your Pedigree Knowledge 12
Practicing Pedigree Comparisons 14
"Rank These Heifers" Exercise 16

This workbook was developed to present a basic explanation of official Holstein pedigree formats and give readers basic skills in comparing and evaluating pedigrees. More comprehensive information on genetic evaluations and their calculations are available from each breed association. **Also, view the Holstein Foundation's *"Understanding Genetics and the Sire Summaries"* workbook for a more detailed explanation.**

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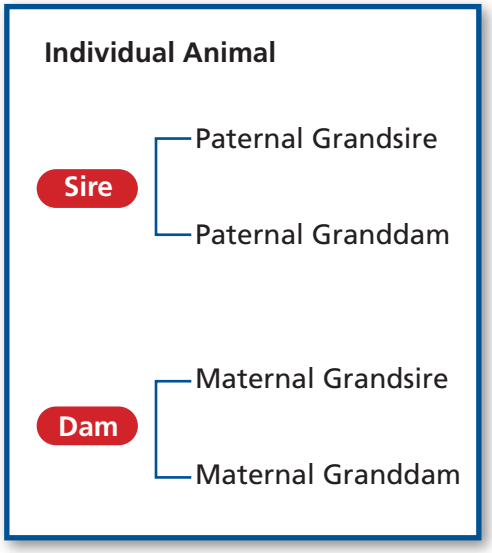
What is a Pedigree?

A pedigree is a record of an animal's ancestry, presented in a standard format. Information about the **sire**, the father of the animal, is listed on the top half of the pedigree, known as the "paternal side." Information about the **dam**, the mother of the animal, is printed on the bottom half of the pedigree, known as the "maternal side."



Three-Generation Pedigree Format

A three-generation pedigree includes the animal, sire and dam, and paternal and maternal grandparents. A four-generation pedigree would also include great-grandparents, and a five-generation pedigree would also include information about the great-great-grandparents.

Official Holstein pedigrees combine ancestry, performance and genetic information all into one easy-to-use document. Whether you're making mating decisions or trying to decide which sale animal might have a place on your farm, pedigrees give you the information and details you need to know. Official pedigrees also serve as a verified source of information, essential for the comfort of any potential buyer.

What are Pedigrees Used For?

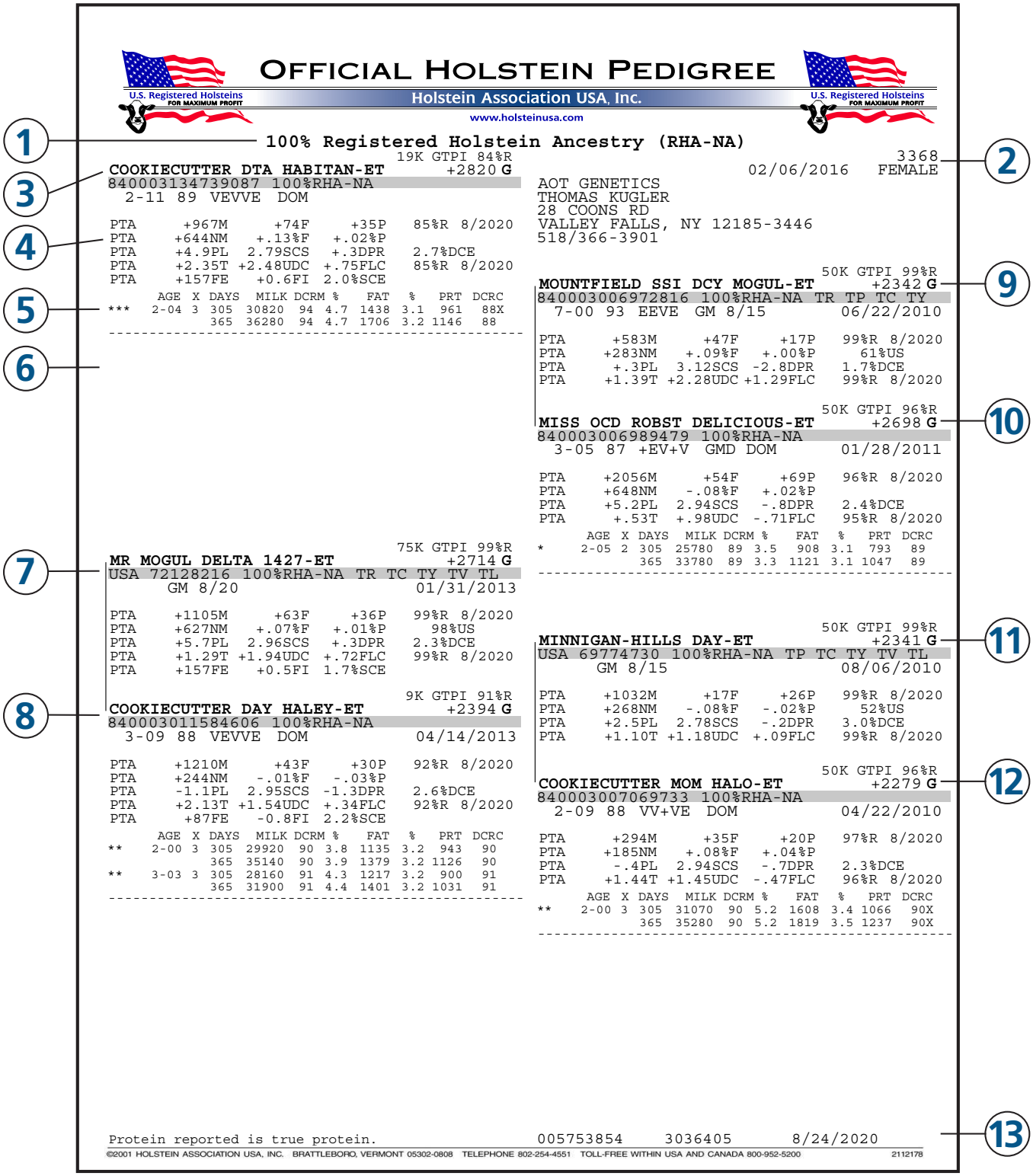
Pedigrees provide detailed performance and genetic information about an animal and its ancestors, which has many uses. The pedigree values that measure the ability of the sire and dam to transmit their traits can help you predict the calf's future performance.

When selecting an animal to buy, different people will have different factors they look for on a pedigree, depending on what their goals are. Someone looking for a show calf will pay more attention to the calf's birthdate, the dam and sire's classification scores, any show winnings on the pedigree, along with Predicted Transmitting Abilities (PTAs) for Type, Udder and Feet and Leg composites. Someone looking for an exceptional milk cow will likely look at the TPI values on the pedigree, PTAs for Milk, Fat and Protein, as well as all production records on the pedigree. When investing a great deal of money in an animal, some might prefer the calf and her dam to be genomic tested so her PTAs have a higher reliability and are less likely to change with subsequent genetic evaluations. There are many examples, but all have one thing in common – analyzing a calf's pedigree will help provide insight into future performance. When beginning the search for your ideal project animal, first decide what information is most important to you.

Pedigrees also come in handy when making mating decisions on your animals. They allow you to review the animal's ancestry to avoid inbreeding, as well as get a total picture of the genetic strengths and weaknesses of the animal and her family. You can look for trends in milk production, classification score, TPI values, or other areas where you might want to improve the animal, then select a mate that will correct some of her weaknesses.

Parts of an Official U.S. Registered Holstein Pedigree

Pedigrees contain a wealth of important information on a single page. While each animal is different, their information is all presented in the same format, making it easy to evaluate and compare animals. Follow along with the pedigree below to learn about the information presented in each section of the pedigree. The following sections describe pedigrees issued by Holstein Association USA. For more specific information about other breeds, contact the breed association responsible for issuing the pedigree.



OFFICIAL HOLSTEIN PEDIGREE

U.S. Registered Holsteins FOR MAXIMUM PROFIT — Holstein Association USA, Inc. — U.S. Registered Holsteins FOR MAXIMUM PROFIT

www.holsteinusa.com

1 — 100% Registered Holstein Ancestry (RHA-NA)

2 — 3368 FEMALE 02/06/2016

AOT GENETICS
THOMAS KUGLER
28 COONS RD
VALLEY FALLS, NY 12185-3446
518/366-3901

3 — COOKIECUTTER DTA HABITAN-ET 19K GTPI 84%R +2820 G
840003134739087 100%RHA-NA
2-11 89 VEVVE DOM

4 — PTA +967M +74F +35P 85%R 8/2020
PTA +644NM +.13%F +.02%P
PTA +4.9PL 2.79SCS +.3DPR 2.7%DCE
PTA +2.35T +2.48UDC +.75FLC 85%R 8/2020
PTA +157FE +0.6FI 2.0%SCE

5 — 6

	AGE	X	DAYS	MILK	DCRM %	FAT	%	PRT	DCRC
***	2-04	3	305	30820	94 4.7	1438	3.1	961	88X
			365	36280	94 4.7	1706	3.2	1146	88

7 — MR MOGUL DELTA 1427-ET 75K GTPI 99%R +2714 G
USA 72128216 100%RHA-NA TR TC TY TV TL
GM 8/20 01/31/2013

PTA +1105M +63F +36P 99%R 8/2020
PTA +627NM +.07%F +.01%P 98%US
PTA +5.7PL 2.96SCS +.3DPR 2.3%DCE
PTA +1.29T +1.94UDC +.72FLC 99%R 8/2020
PTA +157FE +0.5FI 1.7%SCE

8 — COOKIECUTTER DAY HALEY-ET 9K GTPI 91%R +2394 G
840003011584606 100%RHA-NA
3-09 88 VEVVE DOM 04/14/2013

PTA +1210M +43F +30P 92%R 8/2020
PTA +244NM -.01%F -.03%P
PTA -1.1PL 2.95SCS -1.3DPR 2.6%DCE
PTA +2.13T +1.54UDC +.34FLC 92%R 8/2020
PTA +87FE -0.8FI 2.2%SCE

	AGE	X	DAYS	MILK	DCRM %	FAT	%	PRT	DCRC
**	2-00	3	305	29920	90 3.8	1135	3.2	943	90
			365	35140	90 3.9	1379	3.2	1126	90
**	3-03	3	305	28160	91 4.3	1217	3.2	900	91
			365	31900	91 4.4	1401	3.2	1031	91

9 — MOUNTFIELD SSI DCY MOGUL-ET 50K GTPI 99%R +2342 G
840003006972816 100%RHA-NA TR TP TC TY
7-00 93 EEVE GM 8/15 06/22/2010

PTA +583M +47F +17P 99%R 8/2020
PTA +283NM +.09%F +.00%P 61%US
PTA +.3PL 3.12SCS -2.8DPR 1.7%DCE
PTA +1.39T +2.28UDC +1.29FLC 99%R 8/2020

10 — MISS OCD ROBST DELICIOUS-ET 50K GTPI 96%R +2698 G
840003006989479 100%RHA-NA
3-05 87 +EV+V GMD DOM 01/28/2011

PTA +2056M +54F +69P 96%R 8/2020
PTA +648NM -.08%F +.02%P
PTA +5.2PL 2.94SCS -.8DPR 2.4%DCE
PTA +.53T +.98UDC -.71FLC 95%R 8/2020

	AGE	X	DAYS	MILK	DCRM %	FAT	%	PRT	DCRC
*	2-05	2	305	25780	89 3.5	908	3.1	793	89
			365	33780	89 3.3	1121	3.1	1047	89

11 — MINNIGAN-HILLS DAY-ET 50K GTPI 99%R +2341 G
USA 69774730 100%RHA-NA TP TC TY TV TL
GM 8/15 08/06/2010

PTA +1032M +17F +26P 99%R 8/2020
PTA +268NM -.08%F -.02%P 52%US
PTA +2.5PL 2.78SCS -.2DPR 3.0%DCE
PTA +1.10T +1.18UDC +.09FLC 99%R 8/2020

12 — COOKIECUTTER MOM HALO-ET 50K GTPI 96%R +2279 G
840003007069733 100%RHA-NA
2-09 88 VV+VE DOM 04/22/2010

PTA +294M +35F +20P 97%R 8/2020
PTA +185NM +.08%F +.04%P
PTA -.4PL 2.94SCS -.7DPR 2.3%DCE
PTA +1.44T +1.45UDC -.47FLC 96%R 8/2020

	AGE	X	DAYS	MILK	DCRM %	FAT	%	PRT	DCRC
**	2-00	3	305	31070	90 5.2	1608	3.4	1066	90X
			365	35280	90 5.2	1819	3.5	1237	90X

13 — Protein reported is true protein. 005753854 3036405 8/24/2020

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1. 100% Registered Holstein Ancestry (RHA-NA)

The first line, centered on a pedigree, shows the percentage Registered Holstein Ancestry (RHA) and an indicator of whether the animal is of North American (RHA-NA) or International (RHA-I) descent.

During the period of 1852 through 1905, 8,800 Holstein animals were imported to the United States from the Netherlands. Holstein Association USA records on Registered Holsteins trace back to those 8,800 animals. The % RHA represents the percent of bloodlines known to traceback to those original imported animals.

All Registered Holsteins have a % RHA calculated. This percentage is calculated by averaging the % RHA of the parents and then rounding down to the nearest whole number. The % RHA is then printed on their registration certificate. Holstein Association USA bylaws dictate the rules for % RHA to honor the integrity of the Holstein breed's heritage.

100% RHA-NA:
The "NA" stands for North American. These are animals whose entire ancestry can be traced to the origin of the U.S. or Canadian herdbook.

100% RHA-I:
The "I" stands for International. These are animals whose entire ancestry can be traced to the origin of an approved foreign herdbook, or whose ancestry contains a combination of North American and foreign lineage.

0-99% RHA-NA:
These are animals of entirely North American lineage whose entire ancestry cannot be traced to the origin of the U.S. or Canadian herdbook.

0-99% RHA-I:
These are animals of entirely or partly foreign lineage whose entire ancestry cannot be traced to the origin of the respective herdbook(s).

2. 02/06/2016 3368 FEMALE

Animal Barn Name: This can be an animal's short name, or herd management number, as supplied by the breeder of the animal at the time of registration. Habitan's herd management number is 3368.

Birthdate: Habitan was born on February 2, 2016 (02/06/2016)

Animal Gender: Habitan is a female.

3.

```
                                    19K GTPI 84%R
COOKIECUTTER DTA HABITAN-ET            +2820 G
840003134739087 100%RHA-NA
  2-11 89 VEVVE  DOM
```

Line 1: Percentile Ranking, Total Performance Index® (TPI®) Type and Reliability Value

P-Value indicates the percentile ranking of a young animal, based on their TPI. The percentile ranking compares registered animals of the same gender, born in the same year, and are only displayed for animals that are three years of age or younger. P-values are assigned for the top 50% of animals born in a given year and are labelled P5 through P9. For example, a heifer with a P9 on her pedigree indicates that she is in the 90th percentile (top 10%) of heifers born in the same year as her. Since our example animal, Habitan, is older than 3 years, she does not have a P-Value on her pedigree anymore.

TPI Type is an indicator of what type of information is included in an animal's genetic evaluation. The following abbreviations are the different variations you might see on a pedigree:

- **PTPI** stands for Pedigree Total Performance Index. Females with a PTPI designation have not been genomic tested and do not have a required classification and/or are not enrolled in Holstein Association USA's production records program. Bulls with a PTPI are not genomic tested and also do not have any daughter information included in their genetic evaluations.
- **CTPI** stands for Cow Total Performance Index. Only females will have a CTPI and it indicates that they are not genomic tested, but they do have a required classification score and a milk record completed under an official testing program.
- **GTPI** stands for Genomic Total Performance Index. This indicates that the animal has been genomic tested, and they may or may not have a required classification score or official production record (for females), or for bulls, may or may not have milking daughter information included in their genetic evaluation. For animals with a GTPI, you will see an indicator of the genomic chip density they were tested on (ex: 19K/19,000 SNPs in the example above) appearing before the GTPI label.
- **TPI** stands for Total Performance Index. You will only see this abbreviation on pedigrees of bulls that have not been genomic tested, but do have milking daughter information included in their genetic evaluation.

Line 2: Registered Name and TPI Value

Registered Name always includes the prefix of the breeder of the animal (owner of the dam at the time the calf was conceived), and may not exceed the 27-character limit set by Holstein Association USA naming rules. Suffixes required on the animal's name must be included in the 27-character limit. Following are some suffixes you may see on pedigrees:

- **-RED** indicates the animal has red coat color
- **-TW** indicates the animal is a twin
- **-TRI** indicates the animal was part of a set of triplets
- **-ET** indicates the animal is the result of embryo transfer
- **-ETS** indicates the animal is the result of a split embryo
- **-ETN** indicates the animal is a clone

Total Performance Index (TPI) value is an indicator of an animal's ability to transmit superior traits. TPI is a selection index calculated by Holstein Association USA. You can learn more about TPI in the Holstein Foundation's Understanding Genetics & the Sire Summaries workbook.

Line 3: Nation Code, Registration Number, RHA and Official Genetic Condition Results

Nation Code indicates the country an animal is registered in. Animal registered in the United States will have a country code of either "USA" or "840". 840 is the International Organization for Standardization number code for the United States.

Registration Number is the number that officially identifies the animal in the Holstein Association US database. For animals with a Nation Code of 840, on a pedigree you will see two zeros between the 840 and the animal's registration number. In this example, Habitan's Nation Code is 840, and her Registration Number is 3134739087. Numbers starting with an 840 should correspond with a USDA official ear tag that is in the animal.

Official Genetic Condition Results appear after the RHA value if the animal has been tested and the results are on file with Holstein Association USA. These two-letter codes are associated with a number of genetic conditions that exist in the Holstein breed. In this example, Habitan does not have any genetic condition results on file with the Holstein Association, but if you look at her sire, you will see an example of how these codes are presented on a pedigree. You can learn more about genetic conditions in the Holstein Foundation's Understanding Genetics & the Sire Summaries workbook.

Line 4: Age at Classification, Final Score, Major Breakdowns and Recognitions (if applicable)

Age at Classification is listed in years and months. In this example, Habitan was two years and 11 months old at the time of classification.

Her **Final Score** was 89, putting her in the Very Good category.

To arrive at a **Final Score**, each animal receives a score for several individual traits, which fall into categories known as **Major Breakdowns**. The current classification breakdowns were introduced in 2004; classification scores assigned before that date are underlined on pedigrees. The five major breakdowns are:

- Front End & Capacity = 15% of Final Score. In this example, we can see that Habitan scored Very Good (V) in this category
- Dairy Strength = 20%
- Rump = 5%
- Feet & Legs = 20%
- Udder = 40%

Pedigrees show which category of score each major breakdown received:

E = Excellent (90 to 100 points)
V = Very Good (85 to 89 points)
+ = Good Plus (80 to 84 points)
G = Good (75 to 79 points)
F = Fair (65 to 74 points)
P = Poor (50 to 64 points)

Multiple E designations will be found after the major breakdowns if the cow has earned any. Cows may receive Multiple E designations if classified Excellent subsequent times in the following age brackets; 2E and higher are listed on pedigrees:

1E = up to 6 years old
2E = 6 to 9 years old
3E = 9 to 12 years old
4E = 12 to 15 years old
5E = 15 to 18 years old
6E = any subsequent three year period

Recognitions are the last item found on this line, if the cow has earned either Gold Medal Dam (GMD) or Dam of Merit (DOM) honors. In this example, Habitan has been named a Dam of Merit. Learn more about either of these recognitions on the Holstein Association USA web site.

4.

```
PTA      +967M      +74F      +35P   85%R  8/2020
PTA     +644NM    +.13%F    +.02%P
PTA     +4.9PL   2.79SCS    +.3DPR   2.7%DCE
PTA     +2.35T +2.48UDC   +.75FLC   85%R  8/2020
PTA     +157FE    +0.6FI   2.0%SCE
```

This section of the pedigree contains the animal's genetic PTA values for several traits. PTA stands for Predicted Transmitting Ability, which is an expression of the level of genetic superiority an animal is expected to transmit to its offspring for a given trait.

For young animals, PTA values are estimated by average the sire's and dam's PTA values for each trait. When the values listed are based on parental averages, it is indicated by the # symbol.

Line 1: PTAs for Pounds of Milk (M), pounds of Fat (F), pounds of Protein (P), along with the reliability value (%R) for the animal's production valuation, and the month/year of the evaluation listed.

Line 2: PTAs for Net Merit (NM), Fat Percent (%F) and Protein Percent (%P). For bulls with milking daughters in their genetic evaluations, this line will also include the percentage of U.S. daughters in his evaluation.

Line 3: PTAs for Productive Life (PL), Somatic Cell Score (SCS), Daughter Pregnancy Rate (DPR) and Daughter Calving Ease (DCE).

Line 4: PTAs for Type (T), Udder Composite (UDC) and Feet & Leg Composite (FLC), along with the reliability value (%R) for the animal's type valuation, and the month/year of the evaluation listed.

Line 5: PTAs for Feed Efficiency (FE), Fertility Index (FI) and Sire Calving Ease (SCE).

Learn more about Predicted Transmitting Abilities and other related topics in the Holstein Foundation's *Understanding Genetics & the Sire Summaries* workbook.

5.

```
       AGE  X DAYS   MILK DCRM %    FAT   %   PRT  DCRC
***   2-04 3 305  30820  94  4.7 1438  3.1  961   88X
             365  36280  94  4.7 1706  3.2 1146   88
-------------------------------------------------
```

This portion of the pedigree contains information about the cow's milk production records and are listed for every female on the pedigree (which available), always listed below the PTA information. Herds must be enrolled in an option of Holstein Association USA's TriStar℠ production records program to have production records printed on pedigrees.

Several columns of information provide key data about a cow's lactations.
The first column includes an indicator for the level of the TriStar program the herd was enrolled in when the cow made the record, such as Custom (*), Deluxe (**), Premier (***) or Automated Milk Records (AMR), for all records made after January 1997. Records started before January 1997 will have an indicator of which type of testing program the cow was enrolled in.

- AGE = Age of the cow when the record was started, listed as years and months of age, like the classification score.
- X = number of times per day the cow was milked
- DAYS = length of the listed lactation, in number of days
- MILK = pounds of milk produced

- DCRM = Data Collection Rating for pounds of milk
- % = perfect fat for the lactation
- FAT = pounds of fat for the lactation
- % = percent protein for the lactation
- PRT = pounds of protein for the lactation
- DCRC = Data Collection Rating for components

Any "X" at the end of a row of production information indicates that the record contains some extreme test-day data. A second row of production information for a lactation is only listed if the cow's lactation lasted longer than 305 days (up to 365 days) for that lactation. Once a cow produces more than 100,000 pounds of milk, her total production information appears on the pedigree and is labelled "LIFE."

State and National leader records for milk, fat and protein production are labelled on the line below the outstanding record. The designation indicates the placing (1st, 2nd or 3rd); where the record was made (either the state abbreviation or NAT for a national record); and category (MILK, FAT or PROTEIN).

6. Other Recognitions

The space below the production records is used to list other recognitions, including National Show placings, All-National and All-American recognitions, Elite Performer and Star of the Breed honors.

7.

```
                                        75K GTPI 99%R
MR MOGUL DELTA 1427-ET                       +2714 G
USA 72128216 100%RHA-NA TR TC TY TV TL
      GM 8/20                            01/31/2013

PTA     +1105M      +63F      +36P    99%R 8/2020
PTA     +627NM    +.07%F    +.01%P      98%US
PTA     +5.7PL   2.96SCS   +.3DPR    2.3%DCE
PTA     +1.29T +1.94UDC  +.72FLC    99%R 8/2020
PTA     +157FE    +0.5FI  1.7%SCE
```

This section contains information on the Sire (father) of the subject animal.

8.

```
                                        9K GTPI 91%R
COOKIECUTTER DAY HALEY-ET                    +2394 G
840003011584606 100%RHA-NA
  3-09  88  VEVVE  DOM                   04/14/2013

PTA     +1210M      +43F      +30P    92%R 8/2020
PTA     +244NM    -.01%F    -.03%P
PTA     -1.1PL   2.95SCS  -1.3DPR    2.6%DCE
PTA     +2.13T +1.54UDC  +.34FLC    92%R 8/2020
PTA      +87FE    -0.8FI  2.2%SCE
      AGE  X DAYS  MILK DCRM %   FAT  %   PRT DCRC
**    2-00 3 305  29920  90 3.8 1135 3.2  943  90
             365  35140  90 3.9 1379 3.2 1126  90
**    3-03 3 305  28160  91 4.3 1217 3.2  900  91
             365  31900  91 4.4 1401 3.2 1031  91
-----------------------------------------------------
```

This section contains information on the Dam (mother) of the subject animal.

9.

```
                                        50K GTPI 99%R
MOUNTFIELD SSI DCY MOGUL-ET                +2342 G
840003006972816 100%RHA-NA TR TP TC TY
  7-00 93 EEVE  GM 8/15                 06/22/2010

PTA      +583M      +47F     +17P    99%R 8/2020
PTA     +283NM    +.09%F   +.00%P      61%US
PTA      +.3PL   3.12SCS  -2.8DPR    1.7%DCE
PTA     +1.39T +2.28UDC +1.29FLC    99%R 8/2020
```

This section contains information on the Paternal Grandsire (father's father) of the subject animal.

10.

```
                                        50K GTPI 96%R
MISS OCD ROBST DELICIOUS-ET                +2698 G
840003006989479 100%RHA-NA
  3-05 87 +EV+V  GMD DOM                01/28/2011

PTA     +2056M      +54F     +69P    96%R 8/2020
PTA     +648NM    -.08%F   +.02%P
PTA     +5.2PL   2.94SCS   -.8DPR    2.4%DCE
PTA      +.53T   +.98UDC  -.71FLC    95%R 8/2020
      AGE  X DAYS  MILK DCRM %   FAT   %   PRT DCRC
*    2-05 2 305  25780  89 3.5   908 3.1  793   89
            365  33780  89 3.3  1121 3.1 1047   89
--------------------------------------------------
```

This section contains information on the Paternal Granddam (father's mother) of the subject animal.

11.

```
                                        50K GTPI 99%R
MINNIGAN-HILLS DAY-ET                      +2341 G
USA 69774730 100%RHA-NA TP TC TY TV TL
      GM 8/15                           08/06/2010

PTA     +1032M      +17F     +26P    99%R 8/2020
PTA     +268NM    -.08%F   -.02%P      52%US
PTA     +2.5PL   2.78SCS   -.2DPR    3.0%DCE
PTA     +1.10T +1.18UDC  +.09FLC    99%R 8/2020
```

This section contains information on the Maternal Grandsire (mother's father) of the subject animal.

12.

```
                                        50K GTPI 96%R
COOKIECUTTER MOM HALO-ET                   +2279 G
840003007069733 100%RHA-NA
  2-09 88 VV+VE  DOM                    04/22/2010

PTA      +294M      +35F     +20P    97%R 8/2020
PTA     +185NM    +.08%F   +.04%P
PTA      -.4PL   2.94SCS   -.7DPR    2.3%DCE
PTA     +1.44T +1.45UDC  -.47FLC    96%R 8/2020
      AGE  X DAYS  MILK DCRM %   FAT   %   PRT DCRC
**   2-00 3 305  31070  90 5.2  1608 3.4 1066  90X
            365  35280  90 5.2  1819 3.5 1237  90X
--------------------------------------------------
```

This section contains information on the Maternal Granddam (mother's mother) of the subject animal.

13.

```
Protein reported is true protein.                 005753854     3036405       8/24/2020
```

Included here is a label for the type of protein value listed on the pedigree (true or crude), along with two Holstein Association USA processing numbers, and the date the pedigree was issued.

ASUKA

OFFICIAL HOLSTEIN PEDIGREE

U.S. Registered Holsteins FOR MAXIMUM PROFIT

Holstein Association USA, Inc.

www.holsteinusa.com

99% Registered Holstein Ancestry (RHA-I)

1423
12/23/2019 FEMALE

P6 19K GTPI 82%R
APPLE-PTS ASUKA-RED-ET +2262 **G**
840003147207117 99%RHA-I TC TL TD

PTA	-839M	+20F	-2P	78%R 4/2020
PTA	+83NM	+.19%F	+.09%P	
PTA	-.6PL	3.09SCS	-.2DPR	10.4%DCE
PTA	+2.85T	+2.79UDC	+2.28FLC	77%R 4/2020
PTA	+33FE	-1.0FI	11.4%SCE	

P7 49K GTPI 98%R
MR LR EDG ARVIS 18196-ET +2204 **G**
840003125201960 100%RHA-NA RC TC TY TV
06/12/2014

PTA	-563M	+2F	+0P	96%R 4/2020
PTA	+59NM	+.09%F	+.06%P	37%US
PTA	-.2PL	2.99SCS	+1.1DPR	7.7%DCE
PTA	+1.87T	+2.23UDC	+1.64FLC	95%R 4/2020

49K GTPI 89%R
FARNEAR TBR ARIA ADLER-ET +2172 **G**
USA 72437575 99%RHA-I
6-01 95 EEEEE 2E 03/02/2013

PTA	-436M	+19F	-1P	85%R 4/2020
PTA	+20NM	+.13%F	+.05%P	
PTA	-1.4PL	3.00SCS	-1.1DPR	9.0%DCE
PTA	+2.56T	+2.09UDC	+1.15FLC	84%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-03	2	365	32440	94	5.0	1609	3.4	1107	94
***	3-11	2	283	34240	94	5.1	1736	3.2	1098	94
	3RD IA FAT									
***	4-10	2	320	35490	93	4.5	1614	3.4	1199	93
***	5-11	2	365	38770	94	4.1	1608	3.3	1262	94
	LIFE		1440	149470		4.7	6960	3.3	4980	

P6 75K GTPI 83%R
FARNEAR ALTITUDE-RED-ET +2268 **G**
840003128013348 99%RHA-I TC TY TV TL TD
03/14/2017

PTA	-57M	+16F	+10P	80%R 4/2020
PTA	+47NM	+.06%F	+.04%P	100%US
PTA	-.7PL	3.00SCS	-.9DPR	9.6%DCE
PTA	+2.97T	+2.48UDC	+1.63FLC	79%R 4/2020
PTA	+16FE	-1.0FI	12.7%SCE	

50K GTPI 99%R
CARROUSEL REGIMENT-RED-ET +1339 **G**
USA 128891296 100%RHA-NA TV TL
10/12/1999

PTA	-1365M	-38F	-32P	99%R 4/2020
PTA	-502NM	+.05%F	+.04%P	26%US
PTA	-3.5PL	3.23SCS	-2.1DPR	13.5%DCE
PTA	-.17T	-.24UDC	-.75FLC	98%R 4/2020

12K GTPI 99%R
KHW REGIMENT APPLE-RED-ET +1865 **G**
USA 135511521 100%RHA-NA CV TL TD
13-07 96 EEEEE 4E DOM 05/03/2004

PTA	-2222M	+4F	-28P	96%R 4/2020
PTA	-210NM	+.35%F	+.16%P	
PTA	-3.4PL	3.13SCS	-2.1DPR	12.0%DCE
PTA	+2.44T	+2.13UDC	+2.68FLC	97%R 4/2020
PTA	-16FE	-3.6FI	11.4%SCE	

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
*	2-02	2	305	24430	95	4.6	1113	3.4	823	95
			365	28930	95	4.5	1297	3.4	979	95
*	4-01	2	305	30200	95	4.8	1442	3.5	1054	95
			365	35750	95	4.7	1682	3.5	1247	95
*	5-03	2	305	27490	95	5.0	1368	3.7	1030	95
			365	30810	95	5.0	1527	3.7	1154	95
**	7-00	2	305	28370	94	4.9	1397	3.3	930	94
			365	33280	94	5.0	1654	3.4	1128	94
***	9-01	2	305	31120	95	4.3	1324	3.2	1004	95
			365	36750	95	4.3	1582	3.3	1211	95
***	10-11	2	305	27390	95	4.4	1210	3.3	900	95
			365	31780	95	4.5	1440	3.3	1062	95
	LIFE		2898	240640		4.7	11394	3.6	8559	

ALL-AMERICAN JR 2Y COW 2006
H.M. ALL-AMERICAN JR 3Y COW 2007
1st INTERNATIONAL JR 2Y COW 2006

IMP GTPI 99%R
KAMPS-HOLLOW ALTITUDE-ET +1952 **G**
USA 129136431 100%RHA-NA RC CV TL
7-09 95 EEEEE 2E DOM 01/11/2000

PTA	-1557M	-21F	-22P	96%R 4/2020
PTA	-85NM	+.15%F	+.10%P	
PTA	+.9PL	2.98SCS	+.9DPR	8.1%DCE
PTA	+1.38T	+1.01UDC	+2.29FLC	95%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-00	2	305	24510	95	3.8	922	3.5	858	95
			365	28830	95	3.8	1097	3.5	1013	95
**	4-03	2	305	25860	91	4.2	1090	3.1	792	91
			365	30430	92	4.2	1267	3.1	956	92
**	7-00	2	305	34450	92	4.5	1562	3.2	1098	92
			365	39690	92	4.7	1849	3.3	1310	92
	LIFE		1844	144460		4.4	6295	3.5	5015	

Protein reported is true protein. 005745029 3028273 7/28/2020

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Test Your Pedigree Knowledge

Use the pedigree for Apple-Pts Asuka-Red-ET on the following page to complete the exercise.

1. What is Asuka's p-value?
2. What is her sire's TPI?
3. What does PTA stand for on a pedigree?
4. What is her dam's final score and age at classification?
5. What is Farner TBR Aria Adler-ET's relationship to Asuka?
6. What maternal female relative has the highest GTPI?
7. What is her sire's reliability for PTA Type?
8. What is her dam's PTA for pounds of protein?
9. What is the name of the granddam that is a Dam of Merit?
10. Of the three bulls listed on the pedigree, which has the highest PTA Milk?
11. What is Asuka's herd management number?
12. What is the country code, registration number and % Registered Holstein Ancestry of her maternal grandsire?
13. When was Asuka born?
14. How many pounds of milk did her dam produce in her first 305-day lactation?
15. What is Asuka's PTA for Feed Efficiency?
16. What is her sire's PTA for Udder Composite?
17. Which version of genomic test was Asuka tested with?
18. What is her maternal granddam's % Registered Holstein Ancestry?
19. What is her sire's PTA for Productive Life?
20. How many animals on this pedigree have red coat color?
21. What does SCS stand for on a pedigree?

(Answers on page 22)

Practicing Pedigree Comparisons

Answer these questions using the following two pedigrees.

1. Which heifer's paternal granddam has lifetime production records?
2. Which heifer is a Red & White Holstein?
3. Which heifer is sired by the bull with a higher TPI value?
4. Which heifer's dam has the higher Udder Composite?
5. Which heifer has a polled dam?
6. Which heifer has a higher PTA Type?
7. Which maternal granddam has the highest first lactation 305-day milk production record?
8. Which heifer has the younger dam?
9. Which heifer has been genomic tested?

A.

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www.holsteinusa.com

99% Registered Holstein Ancestry (RHA-I)

PTPI 44%R
OAKFIELD WRROR PRINCESS-RED +1904 — 6021 — 03/04/2020 FEMALE
840003208034279 99%RHA-I

PTA -474M# -18F# -12P# 41%R 4/2020
PTA -1.8PL# 3.06SCS# -2.3DPR# 10.2%DCE#
PTA +3.12T#+2.09UDC#+1.69FLC# 40%R 4/2020
PTA -64FE# -2.7FI#12.5%SCE#

P7 49K GTPI 99%R
DYMENTHOLM MR APP AVALANCHE-TW +2172 **G**
CAN 11957107 99%RHA-I RC CV TY TL TD
05/08/2014

PTA -23M +7F +1P 98%R 4/2020
PTA -49NM +.03%F +.01%P 39%US
PTA -1.8PL 2.90SCS -3.0DPR 9.5%DCE
PTA +3.84T +2.92UDC +2.46FLC 98%R 4/2020

12K GTPI 84%R
TRIPLECROWN-JW DOOR WISP-ET +1883 **G**
840003128860372 99%RHA-I RC TL TD
06/01/2015

PTA -408M -19F -13P 82%R 4/2020
PTA -256NM -.01%F +.00%P
PTA -2.2PL 2.79SCS -2.4DPR 9.4%DCE
PTA +3.00T +1.67UDC +1.43FLC 78%R 4/2020

75K GTPI 83%R
MR BLONDIN WARRIOR-RED-ET +2057 **G**
840003139655530 99%RHA-I TP TC TY TV TL
09/25/2017

PTA -87M -1F -1P 79%R 4/2020
PTA -129NM +.01%F +.01%P 100%US
PTA -2.3PL 2.86SCS -2.5DPR 9.9%DCE
PTA +3.35T +2.16UDC +1.56FLC 78%R 4/2020
PTA -37FE -2.5FI 12.8%SCE

19K GTPI 86%R
ROCKLAN-ZBW DEFNT PAIGE-ET +1757 **G**
840003126362571 100%RHA-NA RC TC TL TD
3-11 92 EEVEE 12/10/2015

PTA -860M -35F -23P 83%R 4/2020
PTA -314NM -.01%F +.01%P
PTA -1.2PL 3.25SCS -2.0DPR 10.4%DCE
PTA +2.88T +2.01UDC +1.81FLC 82%R 4/2020
PTA -91FE -2.8FI 12.1%SCE

	AGE	X	DAYS	MILK	DCRM %		FAT	%	PRT	DCRC
***	2-01	2	305	20340	94	3.9	787	3.2	654	94
			322	21160	94	3.9	827	3.2	686	94
***	3-02	3	305	27000	94	3.8	1035	3.2	866	93
			341	29950	94	3.9	1162	3.3	981	93

1st NORTH-E FALL NATL SR 2Y COW 2018

50K GTPI 99%R
SCIENTIFIC B DEFIANT-ET +1641 **G**
USA 141123484 100%RHA-NA RC TP TC TY TV
4-08 87 EVV+ 01/23/2011

PTA +26M -55F -14P 99%R 4/2020
PTA -418NM -.20%F -.05%P 71%US
PTA -1.5PL 3.22SCS -2.8DPR 9.6%DCE
PTA +2.79T +1.59UDC +1.06FLC 99%R 4/2020

13K GTPI 89%R
MS-SRP ABSOLUTE PRO-RED-ET +1449 **G**
USA 69517435 100%RHA-NA TL TD
5-02 93 EEEEE 06/08/2010

PTA -1541M -44F -29P 85%R 4/2020
PTA -579NM +.06%F +.07%P
PTA -5.4PL 3.49SCS -3.5DPR 13.3%DCE
PTA +2.36T +1.56UDC +1.92FLC 86%R 4/2020

	AGE	X	DAYS	MILK	DCRM %		FAT	%	PRT	DCRC
CAN	2-03	2	305	16779		4.2	710	3.6	599	
			311	16989		4.2	721	3.6	607	
**	3-11	2	305	25700	88	4.4	1139	3.2	826	88
			365	30030	88	4.4	1322	3.3	978	88

Protein reported is true protein. 005745029 3028316 7/28/2020

10. Which heifer has a dam that is classified Excellent?
11. Which heifer is the youngest?
12. Which dam has the higher PTA Protein Percent?
13. Which sire has the higher PTA for Net Merit?
14. Which heifer has an ancestor on her pedigree that won her class at a National Holstein Show?
15. Which heifer has an ancestor on her pedigree that was registered in Canada?
16. Which heifer has an ancestor on her pedigree that is a tested carrier of Complex Vertebral Malformation (CVM)?
17. Which heifer is 100% Registered Holstein Ancestry?
18. Which heifer's dam is classified Very Good in her Udder major breakdown?
19. Which heifer has a higher PTA Milk?
20. Which heifer has an ancestor on her pedigree who was born a twin?

B.

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100% Registered Holstein Ancestry (RHA-NA)

2499
03/14/2019 FEMALE

P9 19K GTPI 83%R
WORMONT RUBICON RANSOM 2499 +2485 **G**
840003202985070 100%RHA-NA RC TP TC TL

PTA	+738M	+55F	+36P	79%R 4/2020
PTA	+476NM	+.09%F	+.05%P	
PTA	+4.2PL	2.93SCS	-.9DPR	6.0%DCE
PTA	+.68T	-.29UDC	+.68FLC	79%R 4/2020
PTA	+129FE	-0.6FI	8.4%SCE	

50K GTPI 99%R
MOUNTFIELD SSI DCY MOGUL-ET +2402 **G**
840003006972816 100%RHA-NA TR TP TC TY
7-00 93 EEVE GM 8/15 06/22/2010

PTA	+672M	+51F	+20P	99%R 4/2020
PTA	+339NM	+.09%F	+.00%P	63%US
PTA	+.8PL	3.11SCS	-2.4DPR	5.8%DCE
PTA	+1.37T	+2.25UDC	+1.33FLC	99%R 4/2020

50K GTPI 97%R
SANDY-VALLEY ROBUST RUBY-ET +2532 **G**
USA 69998487 100%RHA-NA
9-01 90 EEEEV 2E 01/28/2011

PTA	+1576M	+67F	+53P	94%R 4/2020
PTA	+547NM	+.02%F	+.01%P	
PTA	+3.6PL	3.11SCS	-1.7DPR	6.6%DCE
PTA	+.23T	-.62UDC	+.56FLC	93%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
*	2-04	2	305	29450	87	3.2	950	3.1	916	87X
***	6-00	3	305	34380	101	3.3	1142	3.1	1082	83
			336	37140	101	3.4	1248	3.2	1181	83
***	7-03	3	305	31550	102	3.2	1019	3.0	936	80
	LIFE		1312	117780		3.5	4069	3.1	3675	

75K GTPI 99%R
EDG RUBICON-ET +2788 **G**
USA 72128125 100%RHA-NA TR TC TY TV TL
GM 12/19 12/20/2012

PTA	+776M	+96F	+40P	99%R 4/2020
PTA	+719NM	+.23%F	+.06%P	65%US
PTA	+5.0PL	2.90SCS	-1.7DPR	4.8%DCE
PTA	+1.29T	+.72UDC	+1.96FLC	99%R 4/2020
PTA	+195FE	-1.2FI	7.8%SCE	

75K GTPI 99%R
COGENT SUPERSHOT +2459 **G**
NLD 755898903 100%RHA-NA TY TV TL TD
GM 8/18 03/14/2013

PTA	+1668M	+23F	+50P	99%R 4/2020
PTA	+420NM	-.14%F	-.01%P	31%US
PTA	+5.1PL	2.74SCS	+1.1DPR	6.1%DCE
PTA	+.17T	+.02UDC	-.21FLC	99%R 4/2020

12K GTPI 87%R
ROLLEN-NS S SHOT RINA P-ET +2263 **G**
USA 74359505 100%RHA-NA RC PC TL TD
4-03 85 VV++V 02/10/2015

PTA	-51M	+10F	+31P	83%R 4/2020
PTA	+237NM	+.04%F	+.12%P	
PTA	+3.8PL	2.94SCS	+1.1DPR	7.7%DCE
PTA	+.50T	-.15UDC	-.38FLC	84%R 4/2020
PTA	+61FE	+0.7FI	8.8%SCE	

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
**	2-00	2	305	16270	88	3.9	632	3.6	582	88
			327	17220	88	3.9	674	3.6	620	88
*	3-00	2	305	18960	84	4.3	818	3.8	716	84
			334	20060	84	4.4	873	3.8	766	84
*	4-01	2	302	21060	83	4.0	847	3.4	718	83

9K GTPI 90%R
MS KOENEN LAD REA PP-RED-ET +1897 **G**
USA 70179809 100%RHA-NA PP TL TD
6-00 88 EE++V 10/21/2012

PTA	-1360M	-25F	-7P	86%R 4/2020
PTA	-148NM	+.10%F	+.13%P	
PTA	+.7PL	3.11SCS	+.0DPR	9.6%DCE
PTA	+1.85T	+.52UDC	+.31FLC	89%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-04	2	283	20890	93	4.7	980	3.3	697	93
**	3-04	2	305	23920	92	4.2	999	3.3	784	92
			365	26860	92	4.2	1135	3.4	910	92
***	5-05	2	305	22150	93	4.5	997	3.3	720	93
			365	25010	93	4.6	1148	3.3	833	93

Protein reported is true protein. 005745029 3028259 7/28/2020

Rank These Heifers

It is time to put your pedigree knowledge and evaluation skills to work! Assume you have your choice of these four heifers for your next project animal. Which one would you choose? Before looking at the pedigrees, first answer the following questions.

1. What are your goals for this heifer?

2. List the pedigree information and criteria you plan to consider when making your decision.

Now look at the four pedigrees on the following pages and rank them in the order that you would like to own the animals.

Rank the heifers in the order you would purchase them.

Which heifer would be your first choice and why?

WISH

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99% Registered Holstein Ancestry (RHA-I)

RUANN DOC WISH-90933 P7 55K GTPI 82%R +2313 **G** — 90933 FEMALE 09/01/2019

840003204460764 99%RHA-I

PTA	+572M	+32F	+15P	78%R 4/2020
PTA	+160NM	+.04%F	-.01%P	
PTA	-.3PL	2.81SCS	-2.4DPR	7.7%DCE
PTA	+2.98T	+1.75UDC	+.89FLC	77%R 4/2020
PTA	+41FE	-2.3FI	9.4%SCE	

MORNINGVIEW MCC KINGBOY-ET 49K GTPI 99%R +2395 **G**

USA 72044077 99%RHA-I TR TP TC TY TV TL

4-08 92 EEVE 10/19/2012

PTA	+887M	+26F	+25P	99%R 4/2020
PTA	+210NM	-.03%F	-.01%P	66%US
PTA	-.5PL	2.80SCS	+.8DPR	6.6%DCE
PTA	+2.10T	+1.53UDC	+.45FLC	99%R 4/2020

WCD-ZBW MACK DADDY-ET 10K GTPI 88%R +2529 **G**

840003012506777 99%RHA-I TR TL TD

3-10 88 VEVVV 10/29/2013

PTA	+936M	+36F	+38P	84%R 4/2020
PTA	+333NM	+.00%F	+.03%P	
PTA	+1.4PL	3.05SCS	-.7DPR	8.3%DCE
PTA	+2.40T	+1.25UDC	+2.25FLC	84%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	1-11	3	305	31000	94	3.2	984	3.1	971	84
			365	37410	94	3.1	1154	3.2	1188	84

WOODCREST KING DOC P9 75K GTPI 93%R +2690 **G**

840003132417775 99%RHA-I TR TP TC TY TV

3-04 90 EEVE 11/01/2015

PTA	+1318M	+60F	+43P	92%R 4/2020
PTA	+403NM	+.03%F	+.01%P	71%US
PTA	+.2PL	3.02SCS	-.1DPR	7.8%DCE
PTA	+3.10T	+2.23UDC	+1.91FLC	87%R 4/2020
PTA	+123FE	+0.2FI	8.8%SCE	

SIEMERS CALLEN LADYWHIP-ET 20K GTPI 85%R +2013 **G**

840003141495483 99%RHA-I

2-07 85 VV++V 06/07/2017

PTA	-170M	+9F	-11P	81%R 4/2020
PTA	-63NM	+.06%F	-.02%P	
PTA	-1.9PL	2.86SCS	-3.8DPR	8.3%DCE
PTA	+3.04T	+2.22UDC	+.48FLC	82%R 4/2020
PTA	-24FE	-3.6FI	9.0%SCE	

OCD 1STCLASS CALLEN-ET 75K GTPI 99%R +2058 **G**

840003125170885 100%RHA-NA TR TP TY TV

2-05 86 VV++ 01/14/2015

PTA	-483M	-6F	-28P	98%R 4/2020
PTA	-16NM	+.05%F	-.05%P	28%US
PTA	+.8PL	2.80SCS	+.1DPR	7.5%DCE
PTA	+2.14T	+2.23UDC	+1.00FLC	96%R 4/2020

SIEMERS D-MAN LADY-WHIP-ET 19K GTPI 85%R +2077 **G**

840003131528105 99%RHA-I

2-02 85 VV++V 09/03/2015

PTA	-92M	+8F	+0P	80%R 4/2020
PTA	-20NM	+.04%F	+.01%P	
PTA	-1.2PL	2.84SCS	-4.5DPR	7.5%DCE
PTA	+3.25T	+2.13UDC	+.85FLC	83%R 4/2020

Protein reported is true protein. 005745029 3028310 7/28/2020

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ECHO

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99% Registered Holstein Ancestry (RHA-I)

91059
09/26/2019 FEMALE

P9 55K GTPI 80%R
RUANN POSITIVE ECHO-91059 +2755 **G**
840003204460890 99%RHA-I

PTA	+1285M	+62F	+55P	77%R 4/2020
PTA	+690NM	+.04%F	+.05%P	
PTA	+5.8PL	2.88SCS	+1.4DPR	5.5%DCE
PTA	+.57T	+1.22UDC	-.77FLC	75%R 4/2020
PTA	+173FE	+1.5FI	5.7%SCE	

P9 49K GTPI 99%R
S-S-I MONTROSS DUKE-ET +2825 **G**
840003125201993 100%RHA-NA TR TP TC TY
4-09 91 EEEE GM 12/19 06/24/2014

PTA	+2395M	+116F	+79P	99%R 4/2020
PTA	+657NM	+.08%F	+.02%P	42%US
PTA	+1.3PL	2.91SCS	-3.0DPR	10.4%DCE
PTA	+1.42T	+1.11UDC	-.46FLC	98%R 4/2020

75K GTPI 86%R
SYNERGY RUBICON PERFECT-ET +2664 **G**
840003131303729 100%RHA-NA
2-09 84 +V++V 06/26/2015

PTA	-336M	+84F	+19P	83%R 4/2020
PTA	+578NM	+.35%F	+.11%P	
PTA	+3.4PL	2.89SCS	+1.2DPR	6.5%DCE
PTA	+1.03T	+.67UDC	+.87FLC	81%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-06	3	305	18390	100	5.2	958	3.7	679	92
			365	21310	100	5.3	1121	3.8	804	92

P9 75K GTPI 83%R
PROGENESIS POSITIVE +2900 **G**
CAN 12609140 100%RHA-NA TR TP TC TY TV
10/06/2016

PTA	+1420M	+112F	+60P	80%R 4/2020
PTA	+765NM	+.20%F	+.05%P	100%US
PTA	+3.2PL	2.92SCS	-1.5DPR	7.5%DCE
PTA	+1.68T	+1.31UDC	+.23FLC	78%R 4/2020
PTA	+247FE	-1.0FI	7.4%SCE	

12K GTPI 86%R
RUANN JEDI ECHO-64804-ET +2375 **G**
840003138306538 99%RHA-I TR TP TL TD
3-01 85 +V++V 09/23/2016

PTA	+1270M	+4F	+45P	82%R 4/2020
PTA	+350NM	-.15%F	+.02%P	
PTA	+4.9PL	2.84SCS	+.0DPR	6.6%DCE
PTA	+.67T	+1.03UDC	-.70FLC	83%R 4/2020
PTA	+69FE	+0.2FI	7.1%SCE	

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-00	3	305	26350	97	3.3	881	3.1	822	97
			314	26930	97	3.3	902	3.1	842	97

P9 49K GTPI 99%R
S-S-I MONTROSS JEDI-ET +2544 **G**
840003123886035 99%RHA-I TR TP TC TY TV
4-10 93 EEEE GM 8/18 05/11/2014

PTA	+2201M	+16F	+71P	99%R 4/2020
PTA	+454NM	-.23%F	+.01%P	85%US
PTA	+4.9PL	2.81SCS	+.9DPR	5.7%DCE
PTA	+.76T	+.89UDC	-1.31FLC	99%R 4/2020

6K GTPI 92%R
RUANN PLANET ECHO-672-ET +2055 **G**
USA 69018274 100%RHA-NA TY TV TL TD
3-08 86 VVV+V 07/19/2010

PTA	+673M	+2F	+26P	88%R 4/2020
PTA	+146NM	-.08%F	+.02%P	
PTA	+2.0PL	2.99SCS	-.2DPR	8.3%DCE
PTA	-.51T	-.58UDC	-1.21FLC	89%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-01	3	305	27300	97	3.6	994	3.3	908	97
			354	31520	97	3.6	1146	3.4	1056	97
***	3-02	3	305	32760	97	3.4	1116	3.3	1075	97
			365	35930	97	3.5	1254	3.3	1189	97

Protein reported is true protein. 005745029 3028313 7/28/2020

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MERLA

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P9 19K GTPI 82%R

RUANN DELTA MERLA-94553-ET +2551 **G** — 94553

840003209621763 99%RHA-I TR TC TL TD — 09/01/2019 FEMALE

PTA	+1652M	+26F	+40P	78%R 4/2020
PTA	+369NM	-.13%F	-.04%P	
PTA	+3.4PL	3.06SCS	-1.0DPR	7.9%DCE
PTA	+2.73T	+2.57UDC	+.94FLC	78%R 4/2020
PTA	+68FE	-0.5FI	7.6%SCE	

P9 75K GTPI 97%R

FARNEAR DELTA-LAMBDA-ET +2701 **G**

840003125993715 100%RHA-NA TR TP TC TY — 06/03/2015

PTA	+792M	+45F	+36P	95%R 4/2020
PTA	+497NM	+.05%F	+.04%P	74%US
PTA	+3.8PL	2.82SCS	+.4DPR	9.1%DCE
PTA	+2.41T	+2.65UDC	+.89FLC	93%R 4/2020
PTA	+110FE	+0.8FI	6.9%SCE	

12K GTPI 86%R

RUANN MONTE MERLA-62589-ET +2466 **G**

840003133420369 99%RHA-I TR TP TL TD

4-03 90 VE+VE — 03/23/2016

PTA	+1044M	+26F	+34P	82%R 4/2020
PTA	+374NM	-.05%F	+.01%P	
PTA	+3.1PL	3.04SCS	-.4DPR	5.9%DCE
PTA	+1.47T	+1.48UDC	+.32FLC	82%R 4/2020
PTA	+85FE	+0.5FI	7.2%SCE	

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-00	3	305	26640	97	3.5	943	3.1	839	97
			329	28170	97	3.6	1018	3.2	895	97
***	3-01	3	305	31070	97	3.5	1088	3.1	974	95
			365	35450	97	3.5	1258	3.1	1115	95

75K GTPI 99%R

MR MOGUL DELTA 1427-ET +2760 **G**

USA 72128216 100%RHA-NA TR TC TY TV TL

GM 12/19 — 01/31/2013

PTA	+1185M	+67F	+39P	99%R 4/2020
PTA	+665NM	+.07%F	+.01%P	98%US
PTA	+5.4PL	2.97SCS	+.5DPR	7.3%DCE
PTA	+1.32T	+1.94UDC	+.83FLC	99%R 4/2020

49K GTPI 92%R

EDG LORETTE UNO 2198-ET +2321 **G**

USA 72437745 100%RHA-NA

6-10 91 EE+EE 2E — 04/25/2013

PTA	+215M	+9F	+20P	88%R 4/2020
PTA	+206NM	+.00%F	+.05%P	
PTA	+2.2PL	2.75SCS	+.5DPR	9.8%DCE
PTA	+1.76T	+1.71UDC	-.22FLC	88%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
**	2-00	2	365	24420	92	3.5	859	3.5	858	92
***	3-02	2	320	30650	94	3.8	1165	3.4	1031	94
***	4-02	2	330	31660	95	4.1	1289	3.4	1068	95
***	5-04	2	303	25850	94	4.1	1062	3.3	865	94
	LIFE		1540	131380		3.9	5183	3.4	4450	

49K GTPI 99%R

VIEW-HOME MONTEREY-ET +2475 **G**

USA 69087180 99%RHA-I TC TY TV TL TD — 01/21/2013

PTA	+147M	+28F	+21P	99%R 4/2020
PTA	+338NM	+.08%F	+.06%P	39%US
PTA	+2.6PL	3.02SCS	-.9DPR	4.6%DCE
PTA	+2.33T	+2.02UDC	+1.15FLC	99%R 4/2020

10K GTPI 86%R

RUANN OAK MERLA-42806-ET +2256 **G**

840003013922869 99%RHA-I

2-10 83 ++G++ — 04/02/2014

PTA	+1194M	+22F	+32P	82%R 4/2020
PTA	+281NM	-.08%F	-.02%P	
PTA	+2.6PL	2.90SCS	-1.3DPR	8.2%DCE
PTA	+.15T	+.07UDC	+.22FLC	83%R 4/2020

Protein reported is true protein. 005745029 3028315 7/28/2020

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POSCH

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99% Registered Holstein Ancestry (RHA-I)

95758
11/28/2019 FEMALE

P9 19K GTPI 82%R
RUANN DOC POSCH-95758-ET +2513 **G**
840003209622968 99%RHA-I TR TC TL TD

PTA	+762M	+45F	+27P	79%R 4/2020
PTA	+338NM	+.05%F	+.01%P	
PTA	+.7PL	3.04SCS	-.1DPR	6.5%DCE
PTA	+2.43T	+1.78UDC	+1.07FLC	78%R 4/2020
PTA	+95FE	+0.2FI	8.3%SCE	

P9 75K GTPI 93%R
WOODCREST KING DOC +2690 **G**
840003132417775 99%RHA-I TR TP TC TY TV
3-04 90 EEVE 11/01/2015

PTA	+1318M	+60F	+43P	92%R 4/2020
PTA	+403NM	+.03%F	+.01%P	71%US
PTA	+.2PL	3.02SCS	-.1DPR	7.8%DCE
PTA	+3.10T	+2.23UDC	+1.91FLC	87%R 4/2020
PTA	+123FE	+0.2FI	8.8%SCE	

9K GTPI 90%R
RUANN MCCUT POSCH-30441-ET +2075 **G**
840003011579729 99%RHA-I TL TD
4-05 88 EEEVV 05/10/2013

PTA	+298M	+13F	+9P	86%R 4/2020
PTA	-19NM	+.01%F	+.00%P	
PTA	-2.2PL	3.16SCS	-1.5DPR	8.2%DCE
PTA	+2.06T	+1.27UDC	+.28FLC	86%R 4/2020
PTA	+20FE	-1.3FI	10.1%SCE	

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	1-11	3	305	29550	97	3.3	985	2.9	867	97
			365	35300	97	3.4	1207	2.9	1035	97
***	3-01	3	305	28270	98	3.5	977	3.1	880	98
			364	31350	98	3.5	1103	3.1	981	98
***	4-05	3	305	33120	97	3.8	1275	2.9	970	96
			365	38470	97	3.8	1480	3.0	1145	96
	LIFE		1130	108050		3.6	3893	3.0	3246	

49K GTPI 99%R
MORNINGVIEW MCC KINGBOY-ET +2395 **G**
USA 72044077 99%RHA-I TR TP TC TY TV TL
4-08 92 EEVE 10/19/2012

PTA	+887M	+26F	+25P	99%R 4/2020
PTA	+210NM	-.03%F	-.01%P	66%US
PTA	-.5PL	2.80SCS	+.8DPR	6.6%DCE
PTA	+2.10T	+1.53UDC	+.45FLC	99%R 4/2020

10K GTPI 88%R
WCD-ZBW MACK DADDY-ET +2529 **G**
840003012506777 99%RHA-I TR TL TD
3-10 88 VEVVV 10/29/2013

PTA	+936M	+36F	+38P	84%R 4/2020
PTA	+333NM	+.00%F	+.03%P	
PTA	+1.4PL	3.05SCS	-.7DPR	8.3%DCE
PTA	+2.40T	+1.25UDC	+2.25FLC	84%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	1-11	3	305	31000	94	3.2	984	3.1	971	84
			365	37410	94	3.1	1154	3.2	1188	84

50K GTPI 99%R
DE-SU BKM MCCUTCHEN 1174-ET +2264 **G**
USA 69990138 99%RHA-I TR TP TC TY TV TL
4-10 93 EEEE GM 8/15 11/25/2010

PTA	+326M	+28F	+13P	99%R 4/2020
PTA	+128NM	+.05%F	+.01%P	43%US
PTA	-.6PL	2.91SCS	-2.2DPR	6.2%DCE
PTA	+2.22T	+1.44UDC	+1.22FLC	99%R 4/2020

12K GTPI 94%R
RUANN ACTIVS POSCH-52901-ET +1741 **G**
USA 62449597 100%RHA-NA TR TL TD
6-10 93 EEVVE 2E 04/23/2005

PTA	+434M	-10F	-2P	91%R 4/2020
PTA	-262NM	-.09%F	-.05%P	
PTA	-3.9PL	3.16SCS	-1.8DPR	10.6%DCE
PTA	+1.01T	+.07UDC	+.07FLC	91%R 4/2020

	AGE	X	DAYS	MILK	DCRM	%	FAT	%	PRT	DCRC
***	2-01	3	305	31140	97	3.3	1037	2.7	850	91
			365	38090	97	3.3	1276	2.8	1054	91
***	3-05	3	305	32480	97	3.6	1165	3.1	1003	90
			365	36940	97	3.6	1333	3.2	1180	90
***	4-08	3	305	34370	97	3.7	1268	2.7	945	92
			365	38940	97	3.7	1432	2.8	1093	92
***	6-06	3	305	35810	97	3.9	1407	2.5	890	97
			365	41800	97	3.8	1579	2.6	1075	97
	LIFE		1808	178970		3.6	6496	2.9	5208	

Protein reported is true protein. 005745029 3028312 7/28/2020

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Answers

Test Your Pedigree Knowledge

1. P6
2. +2268
3. Predicted Transmitting Ability
4. 96 & 13 years and seven months of age
5. Paternal granddam
6. Maternal Granddam – Kamps-Hollow Altitude-ET
7. 79%
8. -28
9. Kamps-Hollow Altitude-ET
10. Sire – Farnear Altitude-Red-ET
11. 1423
12. USA 128891296 100%RHA
13. December 23, 2019
14. 24,430
15. +33
16. +2.48
17. 19K
18. 100%
19. +5.0
20. Four – Asuka (subject animal), Altitude (sire), Apple (dam), and Regiment (maternal grandsire)
21. Somatic Cell Score

Practicing Pedigree Comparisons

1. B
2. A
3. B
4. A
5. B
6. A
7. B
8. A
9. B
10. A
11. A
12. B
13. B
14. A
15. A
16. A
17. B
18. B
19. B
20. A

Educational Workbooks

A variety of educational workbooks are available at www.holsteinfoundation.org

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