

# Thoroughbred Breeding in North America

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I recently wrote an article related to Iowa Thoroughbred breeding, which was published by the Iowa Thoroughbred Breeders and Owners Association. Several people viewed and commented on it, and many messaged me asking for more information. As a result, I extracted a couple tables from my spreadsheets which illustrate broader comparisons of the breeding data.

Core data was extracted from a report associated with an October 2017 Jockey Club public news release of 2017 mares bred by state and province. While all Jockey Club 2017 registration reports were not in when the report was published, history reflects that the report was over 90% complete. I compared the 2017 preliminary report results to the 2016 and 2015 mares bred reported in the public Jockey Club State Fact Books for the 28 states and provinces which had at least 50 mares bred in the 2017. Following is the mares bred data.

<b>State or Province (50 or more Mares Bred)</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
KY	17275	17862	17616
CA	2356	2599	2721
FL	2073	2812	3044
NY	1326	1522	1596
LA	1235	1453	1743
ON	810	876	914
MD	768	923	799
NM	605	823	979
PA	563	529	707
IN	554	527	528
OK	537	796	870
TX	453	526	790
WV	405	443	690
AR	389	420	394
OH	330	434	376
PR	302	341	353
AB	269	319	381
WA	226	346	364
BC	178	226	246
IL	154	214	290
IA	134	109	101
OR	101	163	132
AZ	99	100	126
MI	84	101	122
CO	80	137	177
MB	73	88	106
SK	69	92	126
MN	66	131	152

The Jockey Club estimated that once all 2017 reports come in, the mares bred overall number will have dropped 5.6% in the last year. Subsequently, and based upon the recent data, I concluded that states or provinces which have experienced breeding stability or improvement are clearly bucking North American breeding trends.

Following are the same 28 states and provinces ranked by percentage change over the last two-year period.

State or Province (50 or more Mares Bred)	2016 to 2017 One Year Change	2015 to 2017 Two Year Change
IA	22.9%	32.7%
IN	5.1%	4.9%
AR	-7.4%	-1.3%
KY	-3.3%	-1.9%
MD	-16.8%	-3.9%
ON	-7.5%	-11.4%
OH	-24.0%	-12.2%
CA	-9.3%	-13.4%
PR	-11.4%	-14.4%
NY	-12.9%	-16.9%
PA	6.4%	-20.4%
AZ	-1.0%	-21.4%
OR	-38.0%	-23.5%
BC	-21.2%	-27.6%
LA	-15.0%	-29.1%
AB	-15.7%	-29.4%
MB	-17.0%	-31.1%
MI	-16.8%	-31.1%
FL	-26.3%	-31.9%
WA	-34.7%	-37.9%
NM	-26.5%	-38.2%
OK	-32.5%	-38.3%
WV	-8.6%	-41.3%
TX	-13.9%	-42.7%
SK	-25.0%	-45.2%
IL	-28.0%	-46.9%
CO	-41.6%	-54.8%
MN	-49.6%	-56.6%

Even though the final percentages will improve once the 2017 mares bred reports are complete, it is already clear that a few jurisdictions are positive outliers. Iowa and Indiana clearly lead the way in the 28 state or province study, while Arkansas, Kentucky, Maryland and Ontario deserve notice by competitively outperforming many other jurisdictions. By contrasting and comparing these results, variation among jurisdictions with vastly different breeding systems may be effectively understood.

In complex statistical terms, a multi-variant regression analysis related to breeding system variables in each jurisdiction can yield meaningful answers to many questions. In simpler terms, a study of the best-known methods employed by leading breeding jurisdictions will also offer clues related to answering the question, “Why are breeders compelled to breed at a statistically more significant rate in one jurisdiction than another?” Based upon my analysis, the issues are multi-dimensional and inter-related.

Understanding variation in breeding, and all things for that matter, can be a key to discovery. I hope the broader comparative analysis data answers a few of the questions I have been asked, and also helps folks understand why I see the Iowa breeding system in a positive light.