

2021 Equine Infectious Anemia Cases in the United States

January 1– December 31, 2021

This document summarizes equine infectious anemia (EIA) cases and testing reported in the United States during 2021. Following guidance updates, the over 400 EIA-approved laboratories sent monthly summary testing data directly to APHIS Veterinary Services (VS). The National Veterinary Services Laboratories (NVSL) confirmed all positive cases, and the VS Equine Health Team compiled case information in collaboration with State animal health officials.

EIA test reporting is summarized on a calendar year basis. In 2021, there were 1,416,809 EIA tests conducted, resulting in detection of 103 positive horses on 54 premises (Table 1). In comparison, 2020 results included 1,337,829 tests and 29 positives on 19 premises. Figure 1 displays a map depicting reported numbers of horses and premises testing positive for EIA in 2021. Figure 2 presents a summary of EIA testing from 2002-2021. Historical data and additional information on EIA are available online at <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/equine/eia>

Table 1. Test results reported for equine infectious anemia in the United States, 2021

State	Tests Performed	Positive Horses	Positive Premises
Alabama	21,822	1	1
Alaska	602	0	0
Arizona	16,946	5	3
Arkansas	33,398	0	0
California	26,848	1	1
Colorado	25,610	1	1
Connecticut	9,003	0	0
Delaware	3,541	0	0
Florida	104,654	0	0
Georgia	42,154	1	1
Hawaii	438	0	0
Idaho	14,095	0	0
Illinois	26,229	1	1
Indiana	15,379	0	0
Iowa	20,574	1	1
Kansas	15,660	0	0
Kentucky	66,089	0	0
Louisiana	28,975	1	1
Maine	5,565	0	0
Maryland	23,845	0	0
Massachusetts	13,134	0	0
Michigan	33,496	0	0

Minnesota	29,274	0	0
Mississippi	19,017	1	1
Missouri	54,679	10	3
Montana	20,602	0	0
Nebraska	11,000	0	0
Nevada	12,429	0	0
New Hampshire	6,906	0	0
New Jersey	18,845	0	0
New Mexico	14,613	1	1
New York	40,654	0	0
North Carolina	54,239	0	0
North Dakota	7,818	0	0
Ohio	42,459	0	0
Oklahoma	61,035	1	1
Oregon	7,936	1	1
Pennsylvania	48,753	0	0
Rhode Island	1,711	0	0
South Carolina	37,999	0	0
South Dakota	9,784	0	0
Tennessee	53,435	12	2
Texas	181,597	58	30
Utah	9,968	5	3
Vermont	5,739	0	0
Virginia	44,904	2	2
Washington	8,638	0	0
West Virginia	11,901	0	0
Wisconsin	37,076	0	0
Wyoming	15,622	0	0
Puerto Rico	100	0	0
U.S. Virgin Islands	19	0	0
U.S. Totals	1,416,809	103	54

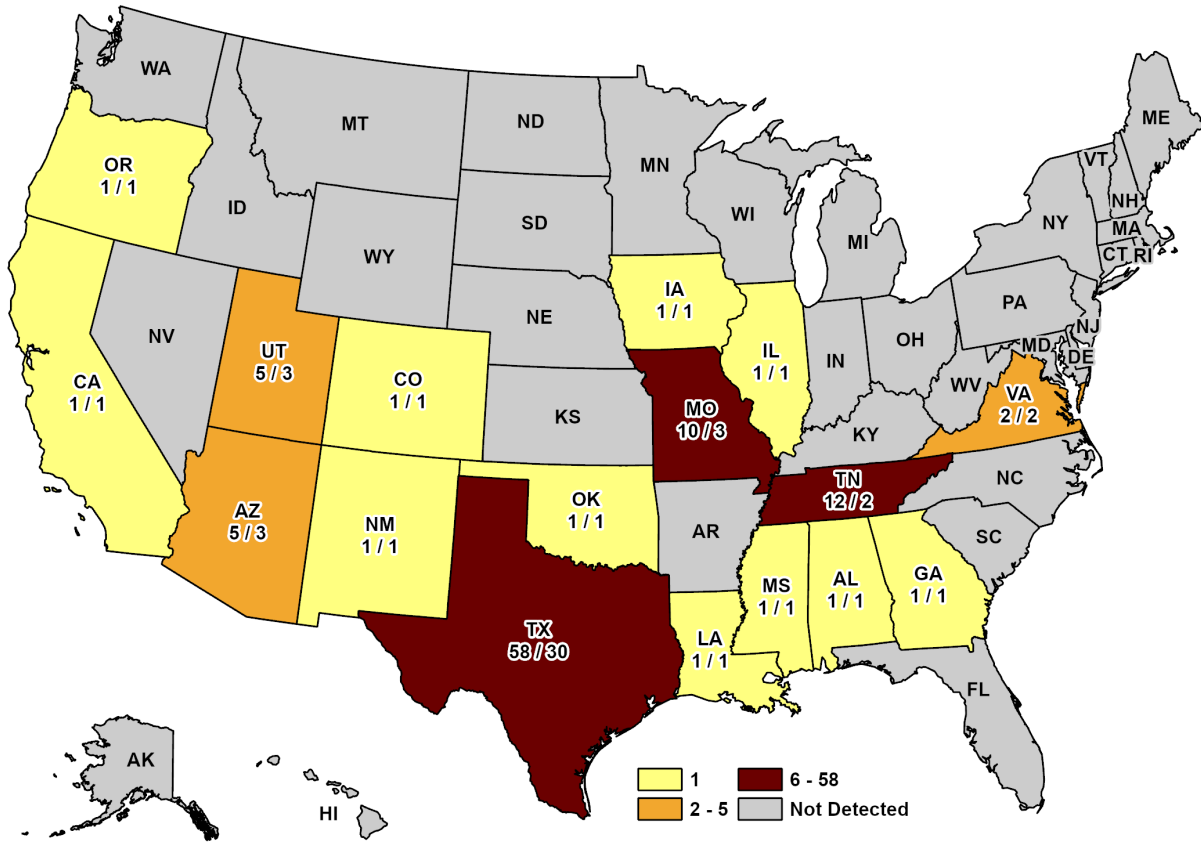


Figure 1. Reported numbers of horses and premises testing positive for EIA, 2021

Although the current prevalence of EIA in the U.S. equine population remains very low, at an estimated national level of around 0.004 percent, the epidemiology of EIA-positive cases has shifted in recent years. Previously, most EIA cases occurred from natural transmission by biting fly vectors in untested and undertested populations; now, there are increasing cases of iatrogenic transmission (a disease resulting from medical activity).

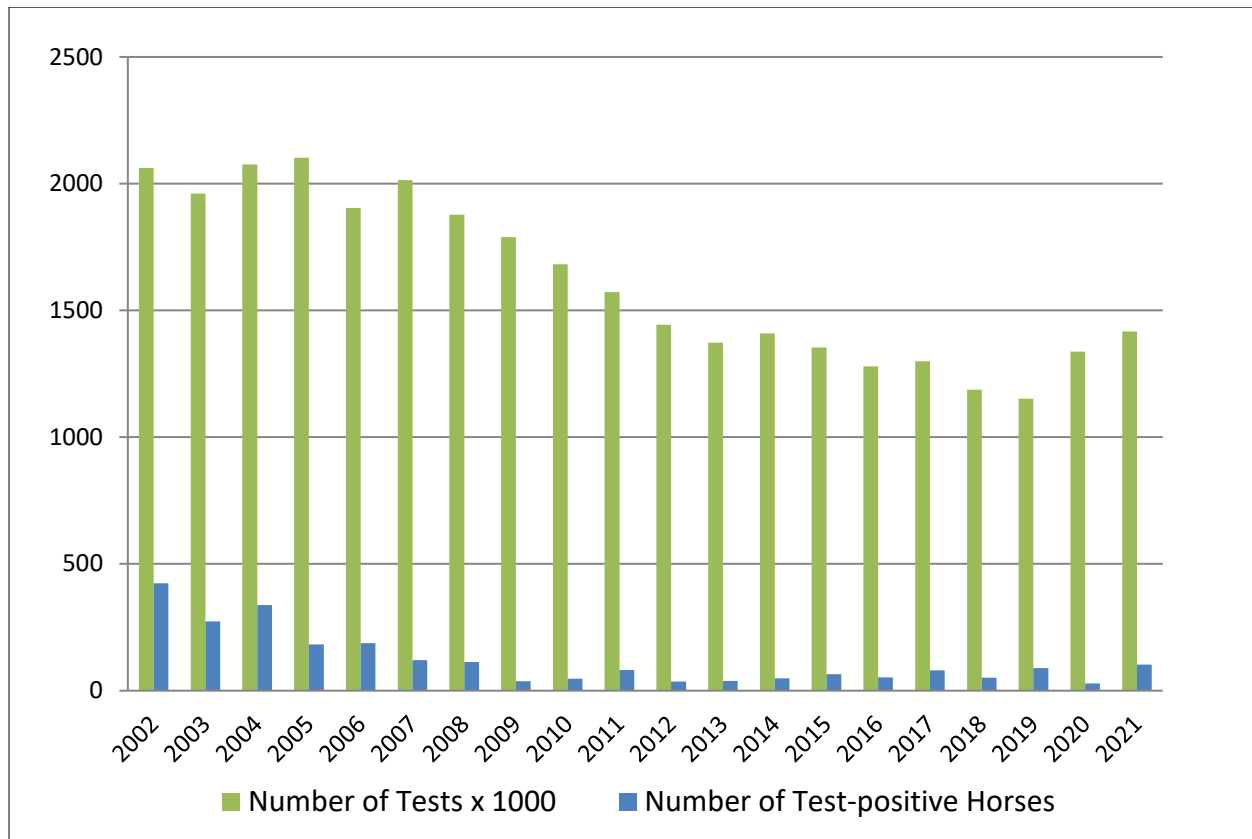


Figure 2. Reported numbers of EIA tests and positive cases in the United States, 2002-2021

In 2021, there were 84 confirmed cases of EIA in either current or former Quarter Horse racehorses where iatrogenic transmission was determined as the method of spread. Two (2) of these horses were racing Paint horses. Iatrogenic transmission in this equine population is occurring through unhygienic practices by horse trainers and owners. These practices include re-using needles, syringes, and IV sets; administering blood transfusions from untested donor horses; using illegal blood products from other countries; and contaminating multi-dose drug vials with infectious blood.

Some of the iatrogenic transmission cases in the Quarter Horse racehorse population occur in horses participating in unsanctioned racing. However, recognized crossover cases between unsanctioned and sanctioned racing in some parts of the United States also happen. Likewise, there are cases in sanctioned Quarter Horse racehorses with no apparent connection to unsanctioned racing. EIA-positive cases in this emerging high-risk population are frequently found in clusters, indicating a horse trainer or owner repeatedly used unhygienic practices that caused the disease spread to multiple horses. These cases are preventable by good hygienic practices and basic biosecurity measures. Thus, increased education and outreach to trainers and owners of Quarter Horse racehorses are necessary to mitigate the continued spread of EIA.

Of the remaining 19 positive EIA cases identified in the United States during 2021, 11 originated from untested/undertested herds where natural transmission was likely occurring over a long period, five (5) horse cases involved suspected or confirmed illegal movements into the U.S. from Mexico, and three (3) horse cases came from unknown/undetermined sources.

Following changes in APHIS guidance for EIA-approved laboratories, more comprehensive EIA testing data is now available. Figure 3 captures the number of EIA tests performed in 2021 by month. April, March, and May were the busiest months of EIA testing in 2021.

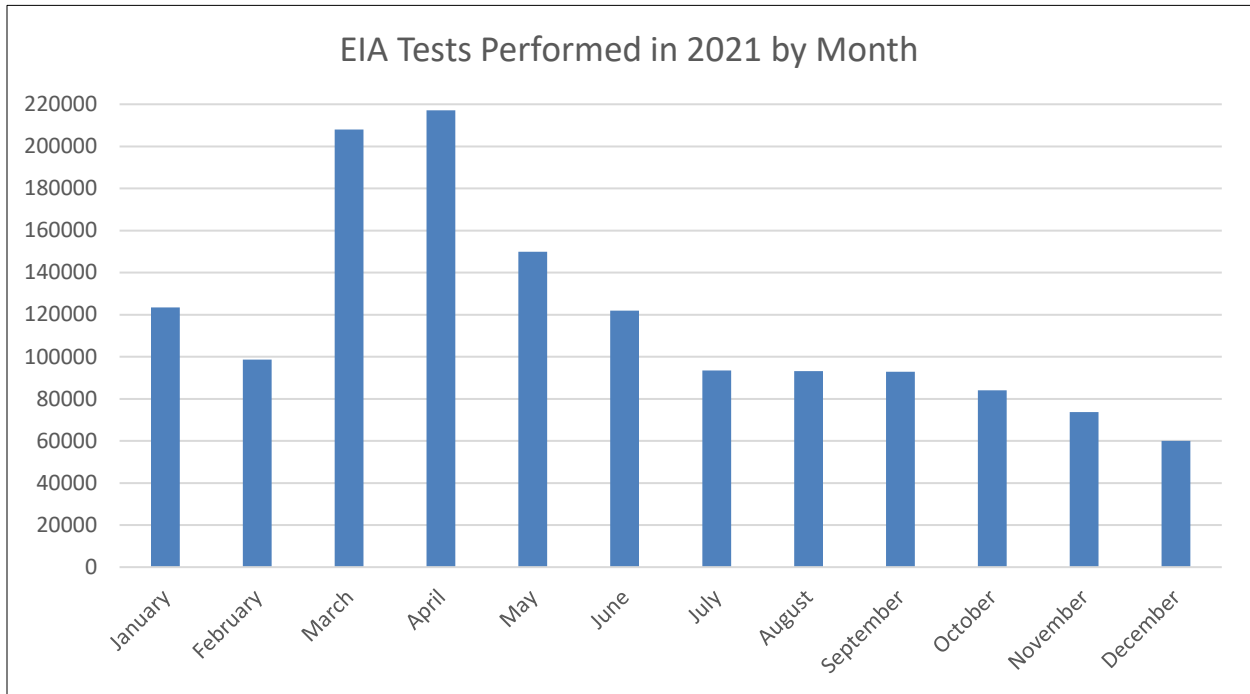


Figure 3. Reported numbers of EIA tests performed in the United States in 2021 by month

The two EIA test types authorized for use by approved laboratories in the United States are the agar gel immunodiffusion (AGID) tests (commonly called Coggins tests) and the enzyme-linked immunosorbent assay (ELISA) tests. Figure 4 depicts the number of AGID tests performed throughout the U.S. in 2021, compared to the number of ELISA tests performed. Both test assays were used in 2021 with nearly equal frequency.

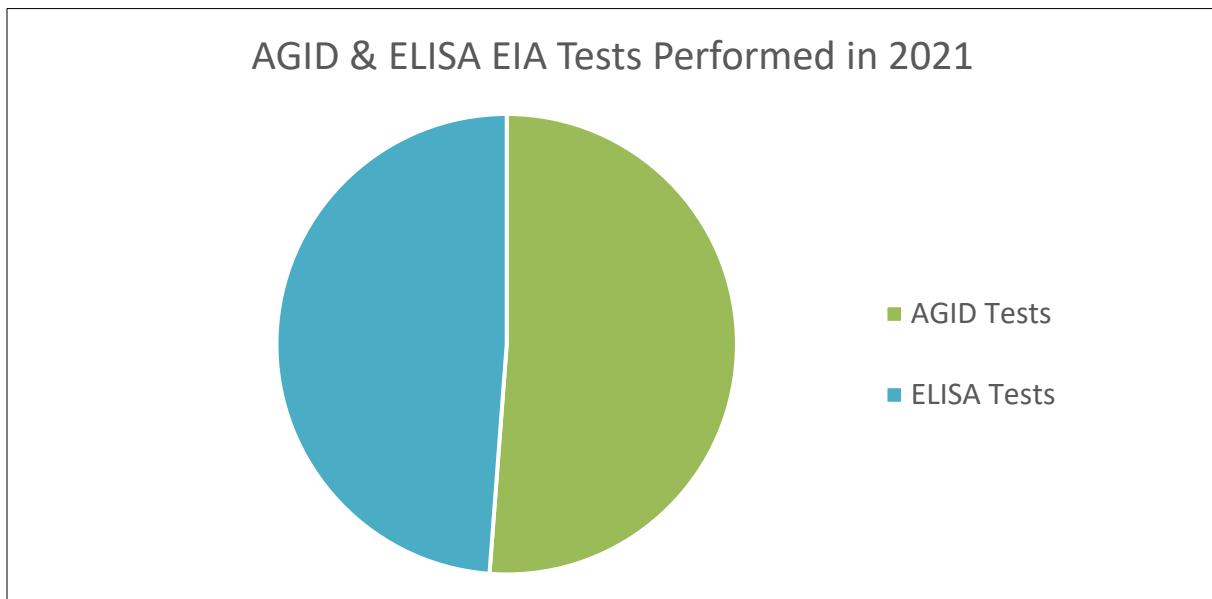


Figure 4. Reported numbers of AGID and ELISA EIA tests performed in the United States in 2021

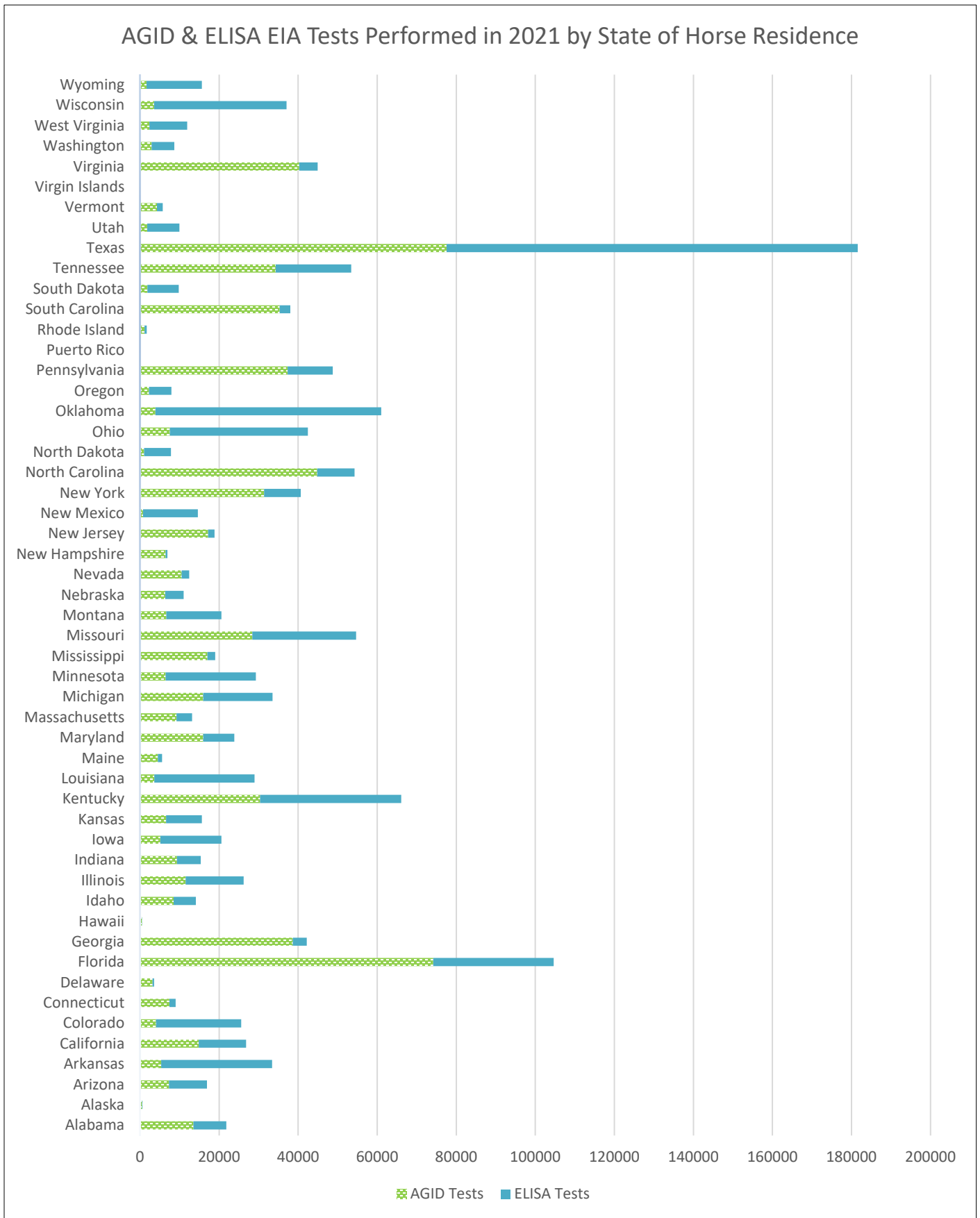


Figure 5. Reported numbers of AGID and ELISA EIA tests performed by State of horse residence in 2021

Figure 5 shows the number and type of EIA assays used to test resident horses in each State. Twenty-five States, along with Puerto Rico and the Virgin Islands, reported fewer than 20,000 EIA tests performed on their horse populations in 2021. Twenty-one States reported between 20,000 and 60,000 EIA tests performed on their horse populations in 2021. And four (4) States—Florida, Kentucky, Oklahoma, and Texas—reported over 60,000 EIA tests performed on their horse populations in 2021. Testing on horse populations in 21 States occurred using an ELISA assay more frequently than the AGID assay. In comparison, testing on horse populations in 29 States, as well as Puerto Rico and the Virgin Islands, occurred more often using the AGID assay than an ELISA assay.