United States Department of Agriculture

Animal and Plant Health Inspection Service

Veterinary Services

2020 Vesicular Stomatitis Virus (VSV) Situation Report – July 13, 2020

Information current as of 3:00 pm MDT, 07/13/2020

On July 13, 2020, the National Veterinary Services Laboratories in Ames, Iowa, confirmed a finding of vesicular stomatitis virus (VSV) infection (Indiana serotype) on an equine premises in Newton County, Missouri. Two horses on the premises have met the confirmed case definition for a new infected state with compatible clinical signs and virus isolation positive results. **This is the 2020 VSV Index Case for Missouri.** One other horse on the same premises has met subsequent case definition with compatible clinical signs and real-time reverse transcription polymerase chain reaction (RT-PCR)-positive results for VSV (Indiana serotype).

Index Premises (Missouri): The index premises is an equine premises located in Newton County, Missouri. There are nine horses present, of which three are showing clinical signs of VSV infection (ear lesions in two horses and oral lesions in one horse) which were first noted on July 7th and 8th. There are no other susceptible species on the premises and the epidemiological investigation is ongoing.

Known competent vectors for transmission of VSV include black flies, sand flies, and biting midges (*Culicoides spp.*). Biosecurity measures and vector mitigation have been instituted to reduce the within-herd spread of the virus. The animals are being monitored and the premises will remain under state quarantine until 14 days from the onset of lesions in the last affected animal on the premises.

Additionally, since the last situation report (7/7/2020), there have been 24 new VSV-affected premises identified (16 confirmed positive, 8 suspect) in 3 states. Updates are as follows:

Kansas (12 new confirmed positive, 8 new suspect premises)

- Butler County – 3 new confirmed positive equine premises
- **Chase County (New Infected County) –** 1 confirmed positive equine premises
- Cowley County – 2 new confirmed positive, 2 new suspect equine premises
- **Miami County (New Infected County) –** 1 confirmed positive equine premises
- Montgomery County – 3 confirmed positive, 5 new suspect equine premises
- **Morris County (New Infected County) –** 1 confirmed positive equine premises
- Sedgwick County – 1 new confirmed positive equine premises
- Sumner County – 1 new suspect equine premises
- The following previously VSV-infected or suspect premises have been released from quarantine: 19 in Butler County, 3 in Cowley County, 1 in Marion County, 2 in Sedgwick County, and 3 in Sumner County.

Nebraska (2 new confirmed positive premises)

- Buffalo County – 1 new confirmed positive equine premises
- **Johnson County (New Infected County) –** 1 confirmed positive equine premises
- Since the last situation report, 1 previously VSV-infected premises has been released from quarantine in Buffalo County.

Oklahoma (2 new confirmed positive premises)

- Washington County – 2 new confirmed positive equine premises

Classification of Cases

Premises that have laboratory diagnostic confirmation of VSV are categorized as confirmed positive premises. Once a county is confirmed as VSV-positive, new equine premises presenting with clinical signs of VSV in that county are not required to be tested for confirmation of the disease, but the premises will be quarantined and classified as a suspect premises.

Quarantines

Confirmed positive and suspect premises are quarantined for at least 14 days from the onset of lesions in the last affected animal on the premises.

Summary of the Outbreak (Updated information in blue)

The 2020 VSV outbreak began on April 13, 2020, when the National Veterinary Services Laboratories (NVSL) in Ames, Iowa confirmed the first VSV-positive premises in Dona Ana County, New Mexico. Arizona, Texas, Kansas, Nebraska, Oklahoma, and Missouri subsequently broke with VSV cases which were confirmed by NVSL on April 22, 2020 (Cochise County, Arizona), April 23, 2020 (Starr County, Texas), June 16, 2020 (Butler County, Kansas), June 24, 2020 (Buffalo County, Nebraska), July 7, 2020 (Washington County, Oklahoma), and July 13, 2020 (Newton County, Missouri).

Since the start of the outbreak, **147 VSV-affected premises have been identified (109 confirmed positive, 38 suspect).** One hundred forty (140) of these premises had only equine species clinically affected and 7 premises had clinically affected cattle (McMullen, Starr, and Zapata Counties, Texas; Butler and Cowley Counties, Kansas).

Arizona has identified 19 affected premises (18 confirmed positive, 1 suspect) in 7 counties (Apache, Cochise, Gila, Maricopa, Pima, Pinal, and Santa Cruz Counties). Kansas has identified 94 affected premises (60 confirmed positive, 34 suspect) in 10 counties (Butler, Chase, Cowley, Greenwood, Marion, Miami, Montgomery, Morris, Sedgwick, and Sumner Counties). Missouri has identified 1 affected premises (1 confirmed positive) in 1 county (Newton County). Nebraska has identified 4 affected premises (4 confirmed positive) in 2 counties (Buffalo and Johnson Counties). New Mexico has identified 16 affected premises (13 confirmed positive, 3 suspect) in 6 counties (Bernalillo, De Baca, Dona Ana, Eddy, Grant and Sierra Counties). Oklahoma has identified 3 affected premises (3 confirmed positive) in 1 county (Washington County). Texas has identified 10 affected premises (10 confirmed positive, 0 suspect) in 6 counties (El Paso, Hudspeth, Kerr, McMullen, Starr, and Zapata Counties).

There have been a total of 97 previously VSV-infected or suspect premises that have completed the quarantine period and been released. To date, all VSV-quarantined premises have been released in New Mexico (since June 4, 2020) and Texas (since June 8, 2020). Fifty (50) premises remain under VSV quarantine in Arizona, Kansas, Missouri, Nebraska, and Oklahoma.

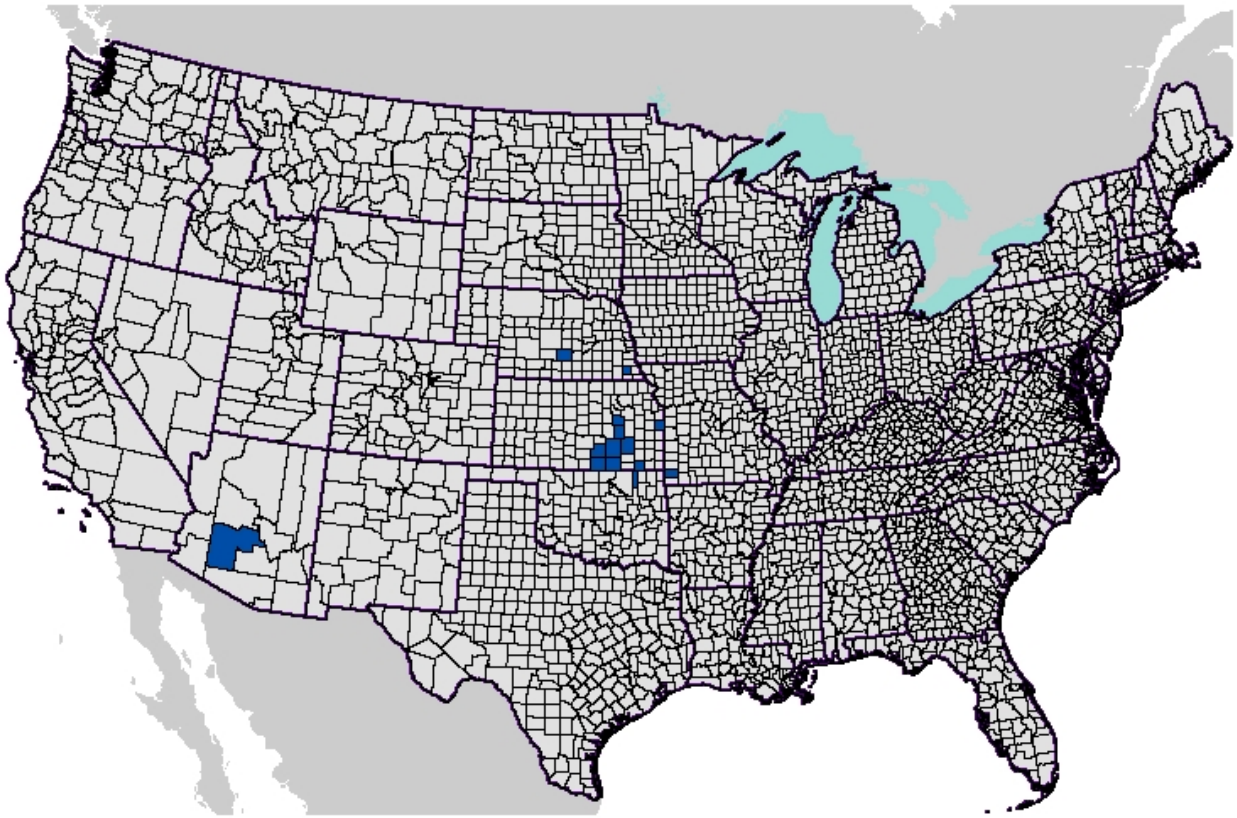
Summary of VSV-Affected Premises

Table 1. Location, number, and status of VSV-affected premises. New information in blue.

ARIZONA	Confirmed Positive Premises	Suspect Premises	Premises Released from Quarantine	Current Premises Quarantined
Apache County	2	0	2	0
Cochise County	4	0	4	0
Gila County	1	0	1	0
Maricopa County	7	1	7	1
Pima County	1	0	1	0
Pinal County	2	0	2	0
Santa Cruz County	1	0	1	0
TOTAL: 7 COUNTIES	**18**	**1**	**18**	**1**
KANSAS				
Butler County	31	21	37	15
Chase County	1	0	0	1
Cowley County	7	4	5	6
Greenwood County	2	1	0	3
Marion County	1	0	1	0
Miami County	1	0	0	1
Montgomery County	4	5	0	9
Morris County	1	0	0	1
Sedgwick County	10	0	6	4
Sumner County	2	3	3	2
TOTAL: 10 COUNTIES	**60**	**34**	**52**	**42**
MISSOURI				
Newton County	1	0	0	1
TOTAL: 1 COUNTY	**1**	**0**	**0**	**1**

NEBRASKA	Confirmed Positive Premises	Suspect Premises	Premises Released from Quarantine	Current Premises Quarantined
Buffalo County	3	0	1	2
Johnson County	1	0	0	1
TOTAL: 2 COUNTIES	**4**	**0**	**1**	**3**
NEW MEXICO				
Bernalillo County	1	0	1	0
De Baca County	2	0	2	0
Dona Ana County	6	1	7	0
Eddy County	1	0	1	0
Grant County	1	0	1	0
Sierra County	2	2	4	0
TOTAL: 6 COUNTIES	**13**	**3**	**16**	**0**
OKLAHOMA				
Washington County	3	0	0	3
TOTAL: 1 COUNTY	**3**	**0**	**0**	**3**
TEXAS				
El Paso County	1	0	1	0
Hudspeth County	1	0	1	0
Kerr County	1	0	1	0
McMullen County	1	0	1	0
Starr County	4	0	4	0
Zapata County	2	0	2	0
TOTAL: 6 COUNTIES	**10**	**0**	**10**	**0**
TOTAL PREMISES ALL STATES	**109**	**38**	**97**	**50**

Map 1 (Current). Counties with Current VSV-Quarantined Premises (shaded in blue)



Map 2 (Cumulative). Counties with Premises Quarantined for VSV in 2020 (shaded in blue)

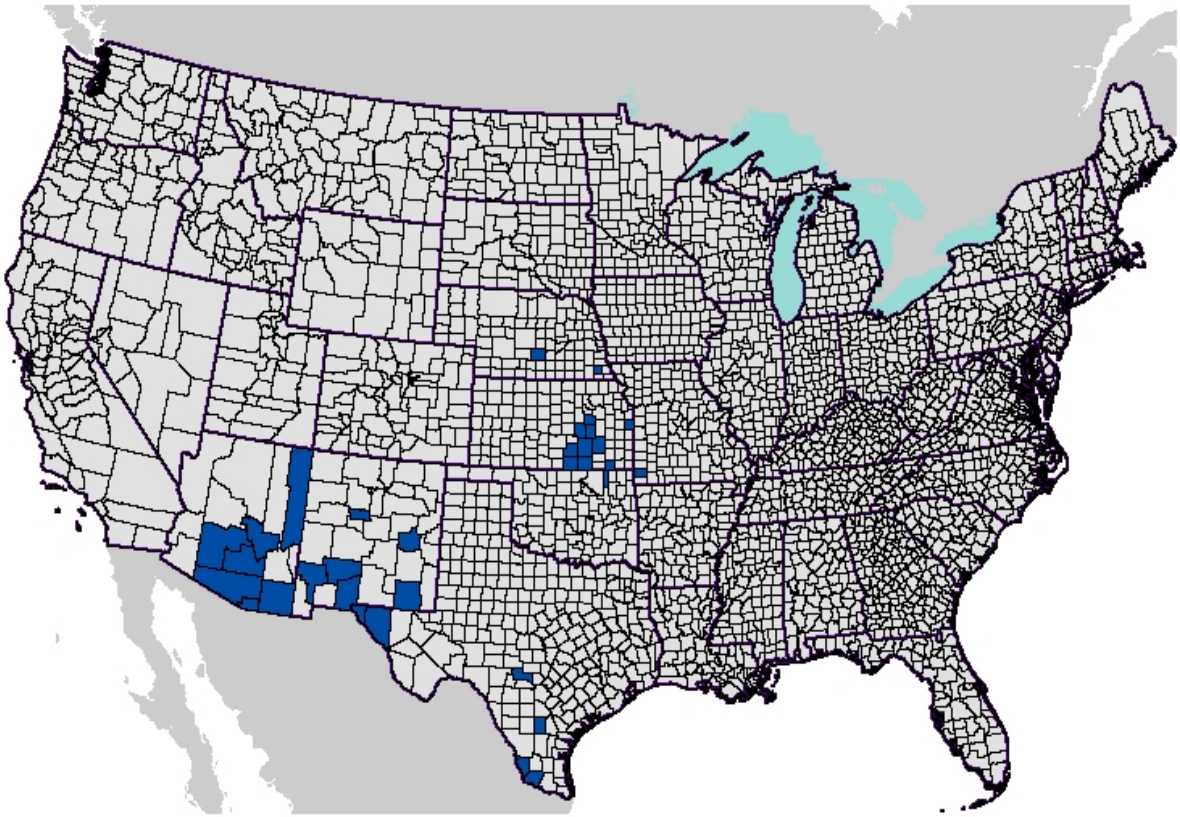


Table 2. Cumulative count of species clinically affected on VSV-positive premises.

State	Premises with clinically affected equine species	Premises with clinically affected bovine species	Premises with clinical signs in both equine and bovine species	Premises with clinical signs in other susceptible species	Total affected premises
ARIZONA	19	0	0	0	19
KANSAS	91	3	0	0	94
MISSOURI	1	0	0	0	1
NEBRASKA	4	0	0	0	4
NEW MEXICO	16	0	0	0	16
OKLAHOMA	3	0	0	0	3
TEXAS	6	4	0	0	10
TOTAL	**140**	**7**	**0**	**0**	**147**

Table 3. VSV Serotypes Identified During the 2020 Outbreak

Both VSV-Indiana (VSV-IN) and VSV-New Jersey (VSV-NJ) serotypes have been identified during the 2020 outbreak. VSV-IN occurred in the U.S. in 2019, while VSV-NJ was last isolated in the U.S. in the 2014-2015 outbreak. Both serotypes are known to circulate in endemic cycles in southern Mexico. The last U.S. outbreak involving both serotypes occurred in 1997-1998.

State	Premises with VSV-IN serotype confirmed	Premises with VSV-NJ serotype confirmed	Premises with VSV serotype unconfirmed*	Total VSV affected premises
ARIZONA	17	0	2	19
KANSAS	60	0	34	94
MISSOURI	1	0	0	1
NEBRASKA	4	0	0	4
NEW MEXICO	13	0	3	16
OKLAHOMA	3	0	0	3
TEXAS	3	7	0	10
TOTAL	**101**	**7**	**39**	**147**

*Livestock in the southwestern and Rocky Mountain regions of the U.S. have been exposed to both VSV-NJ and VSV-IN in recent outbreak years. New infection with either serotype in 2020 can cause elevated antibody titers to both serotypes if previously encountered. The current infection serotype on a premises may not be able to be confirmed if elevated antibodies to both serotypes are present in the animals and antigen detection tests (RT-PCR and virus isolation) are negative. Additionally, VSV serotype will not be known in suspect cases in which diagnostic testing does not occur.

Table 4. Timeline of Events

Date	Event
April 13, 2020	VSV index case for the U.S. confirmed at NVSL – Dona Ana County, New Mexico. New affected county confirmed – Sierra County, New Mexico
April 20, 2020	New affected county confirmed – Eddy County, New Mexico
April 22, 2020	VSV index case for Arizona confirmed – Cochise County, Arizona
April 23, 2020	VSV index case for Texas confirmed – Starr County, Texas
April 27, 2020	New affected county confirmed – Pinal County, Arizona
April 29, 2020	New affected county confirmed – El Paso County, Texas
May 4, 2020	New affected county confirmed – Grant County, New Mexico
May 6, 2020	New affected counties confirmed – Gila County, Arizona; Zapata County, Texas
May 7, 2020	New affected counties confirmed – Pima, County, Arizona; Bernalillo and De Baca Counties, New Mexico
May 19, 2020	New affected county confirmed – McMullen County, Texas
May 20, 2020	New affected county confirmed – Hudspeth County, Texas
May 21, 2020	New affected counties confirmed – Santa Cruz County, Arizona; Kerr County, Texas
May 22, 2020	New affected county confirmed – Maricopa County, Arizona
May 29, 2020	New affected county confirmed – Apache County, Arizona
June 16, 2020	VSV index case for Kansas confirmed – Butler County, Kansas
June 17, 2020	New affected county confirmed – Cowley County, Kansas
June 19, 2020	New affected county confirmed – Sedgwick, Kansas
June 24, 2020	VSV Index case for Nebraska confirmed – Buffalo County, Nebraska. New affected county confirmed – Sumner County, Kansas
July 2, 2020	New affected counties confirmed – Greenwood and Marion Counties, Kansas.
July 7, 2020	VSV index case for Oklahoma confirmed – Washington County, Oklahoma. New affected county confirmed – Montgomery County, Kansas.
July 9, 2020	New affected county confirmed – Johnson County, Nebraska.
July 10, 2020	New affected county confirmed – Morris County, Kansas
July 13, 2020	VSV index case for Missouri confirmed – Newton County, Missouri. New affected counties confirmed – Chase and Miami Counties, Kansas.