

ANNUAL REPORT  
OF THE  
POTATO CERTIFICATION ASSOCIATION OF NEBRASKA  
ALLIANCE, NEBRASKA  
FOR THE *2021* CROP

Official State Agency for the Seed Potato Certification Authorized  
By the Institute of Agriculture & Natural Resources  
Under Nebraska State Law

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Jennifer Dillinger – Assistant Manager

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Gary Leever, Adrian Gonzalez, Brandon Roland, John Wickman, Ivan Gomez, Elijah Harris, Omar Garcia, Jaden Kelley, Daniel Anderson.....Shipping Point Inspections-Nebraska and Wyoming

Adrian Gonzalez, Brandon Roland, Gary Leever, Terry Weisgerber, Chris Wright, Jaden Kelly, Elijah Harris, Daniel Anderson, Mike Kaus, Tyler Kaus, Thomas Thorton.....Office, Laboratory and Bin Inspections

## ANNUAL REPORT

### 2021 CROP

## POTATO CERTIFICATION ASSOCIATION OF NEBRASKA

The Association serves as the official state agency for the certification of seed potatoes in Nebraska. This report covers activities and finances during our fiscal year July 1, 2021 through June 30, 2022. State law has assigned the responsibility for seed certification to the Vice Chancellor, Institute of Agriculture and Natural Resources, University of Nebraska. His office has designated this Association, by contract, as the agency responsible for seed potato certification in Nebraska.

### ACREAGE AND LOT INFORMATION

In 2021 6,789.20 acres were entered for certification (Figures 1 and 2), with 1,531.65 acres removed prior to the Post-Harvest Test for use in the processing industry and for other onsite-related issues. This constitutes a 425.67 acre, or 5.9%, decrease over the 2020 crop. Three hundred and seventy-two lots were entered into certification in the summer, while 345 were entered into the Post-Harvest Test. A total of 5,257.55 acres were entered into the Post-Harvest Test. More FY3 acres were planted than any other field year, which has been the case since 2017 (Figures 3,4 and 5).

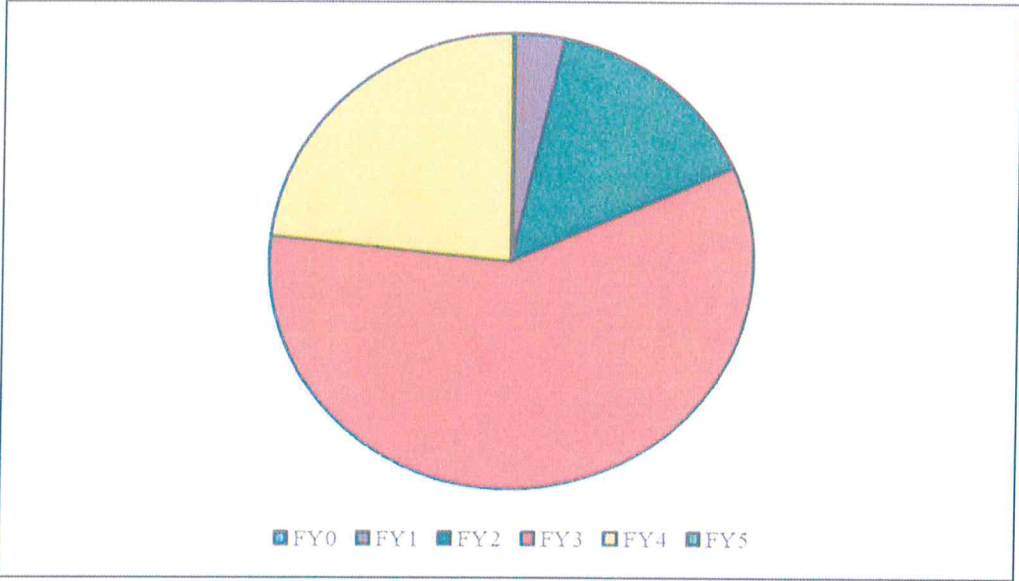


Figure 1. General description of acres entered for certification in 2021.

Figure 2. Number of acres by generation entered for certification in 2020.

Generation	Number of Acres
(PN) FY0	1.8
FY1	237.2
FY2	1041.62
FY3	4105.8
FY4	1625.36
FY5	3.7
<b>Total Acres</b>	<b>6,789.20</b>

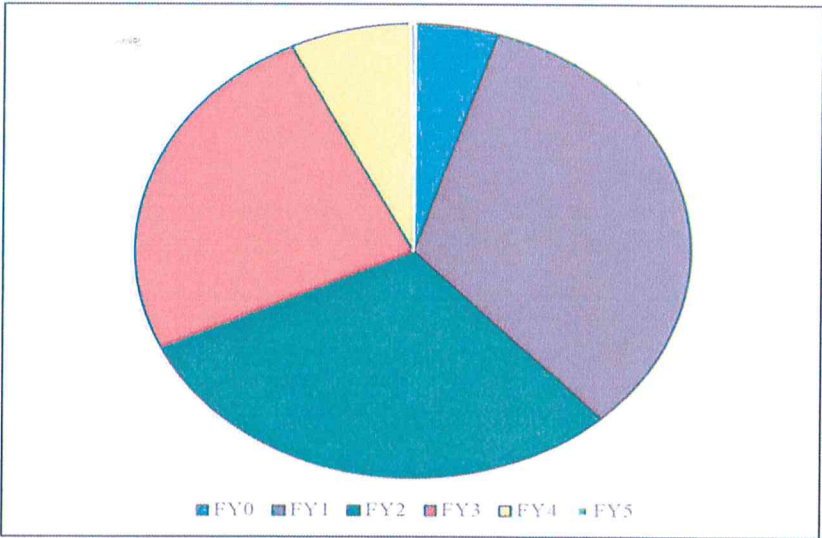


Figure 3. General description of lots entered for certification in 2021.

Figure 4. Number of lots entered for certification by lot in 2020.

Generation (PN) FY0	Number of Lots
FY1	129
FY2	110
FY3	93
FY4	28
FY5	6
<b>Total Lots</b>	<b>382</b>

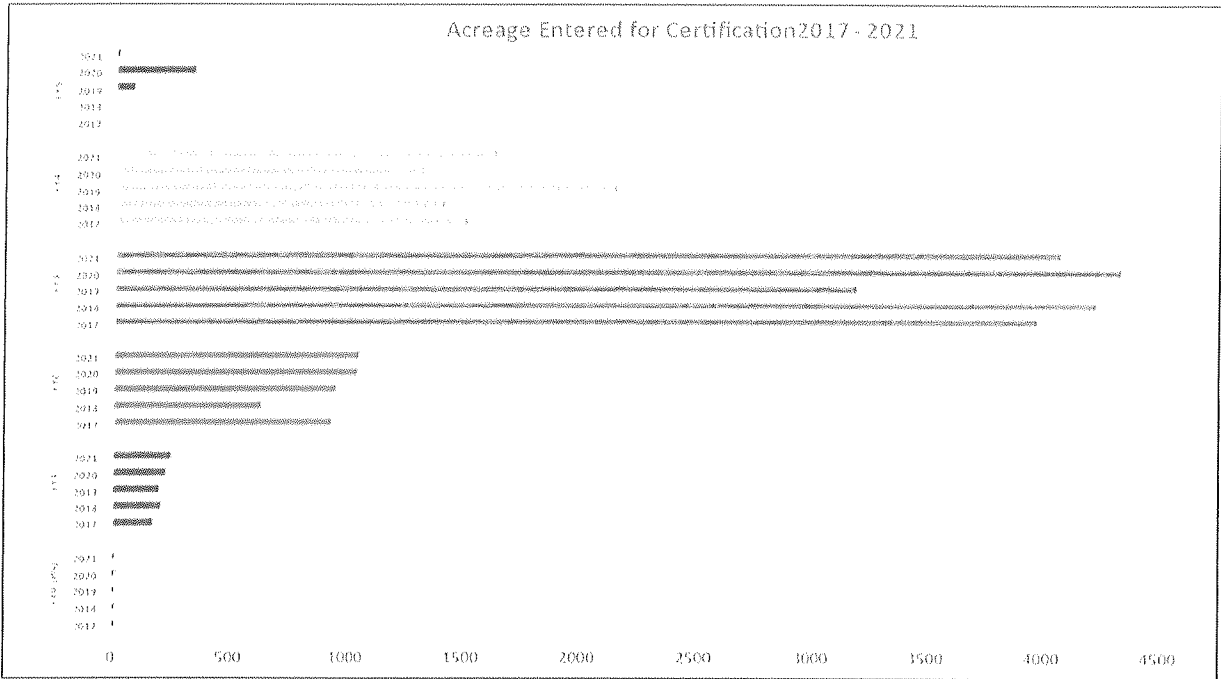


Figure 5. Acreage Entered for Certification in Nebraska from 2017-2019.

Acreages by variety type for the 2020 crop were as follows:

- Russets –2577.17 acres
- Round Whites –3,903.59 acres
- Reds – 76.06 acres
- Specialty (Purples and Yellows) – 62.97
- Long White – 175.44

Total certified seed production was 2,288,559.05 cwt. Total seed shipped for the 2021 crop was 1,995,601.77 cwt, or a 131,596.77 cwt increase of seed shipped over the 2020 crop (Figure 5).

Figure 6. General acreage description for Nebraska 2021 seed potato crop.

Year	Acres Harvested *	Production (cwt) *	Yield Per Acre *	Certified Acres Entered	Certified Acres Accepted	Certified Seed Production Net (cwt)	Certified Seed Shipped (cwt)	Truckload Shipped (@ 500 cwt)
1997	24,000	9,360,000	390	8,107	7,684	990,312	692,879	1,386
1998	26,200	9,781,000	373	7,353	7,336	896,156	506,559	1,013
1999	25,700	10,524,000	409	6,729	6,594	884,489	606,927	1,214
2000	24,700	10,127,000	410	5,140	5,047	882,713	588,975	1,178
2001	22,400	8,400,000	375	7,837	4,696	971,521	729,056	1,458
2002	21,800	8,611,000	395	6,659	6,523	1,032,327	598,442	1,197
2003	23,200	9,744,000	420	6,439	4,873	975,661	575,930	1,172
2004	21,600	9,288,000	430	6,592	5,592	1,010,605	551,163	1,091
2005	19,400	8,245,000	425	6,017	5,985	1,055,300	607,771	1,103
2006	19,400	8,730,000	450	5,707	5,707	1,133,190	695,782	1,391
2007	19,800	8,217,000	415	4,831	4,831	919,684	628,861	1,258
2008	19,400	8,245,000	425	5,431	5,431	1,136,738	659,052	1,318
2009	19,900	8,756,000	440	5,334	5,089	1,138,485	689,734	1,379
2010	18,600	7,719,000	415	4,949	4,914	1,420,690	699,588	1,399
2011	19,500	7,800,000	400	5,229	5,211	1,382,439	889,390	1,779
2012	23,300	10,369,000	445	6,166	5,311	1,497,187	954,442	1,909
2013	18,300	8,418,000	460	6,106	6,097	1,589,272	986,388	1,973
2014			294	6,121	6,015.95	1,772,872	1,398,332	2,797
2015			288	5882.25	5882.25	1,694,039	1,185,753	2,371
2016			325	5,317	5,316.79	1,726,100	1,185,744	2,371
2017			310	6,562	6,562.13	2,038,288	1,662,139	3,324
2018			340	6,437.60	6,437.60	1,830,418	1,499,638	3,153
2019			327	6,527.93	6,527.93	2,006,000	1,487,902.75	2,979
2020			376	7,214.87	7,149.57	2,635,687.92	1,864,005	3,728.01
2021			339	6,789.20	6,770.5	2,288,559.05	1,995,601.77	3,991.20

## FIELD INSPECTIONS

In 2021 Daniel Anderson was hired as a new field inspector. He came to the Potato Certification Association of Nebraska with over ten years' experience as a potato roguer for the SA Winchester Roguing Company. Mike Kaus also participated in field inspections in 2021 as a second-year field inspector. Gary Leever also conducted field inspections.

Field inspections began in June and concluded at the end of August. The 2020 growing season was exceptionally warm, with fewer rainstorms than average. The fall season following field inspections was also unusually warm.

Average height at first inspection was 16.8 inches, and 24.48 at the time of second and third inspections. Mosaic was confirmed in 18 lots, with one lot (17.32 acres) being rejected due to PVY.

## SUMMER DISEASE (VIRUS AND BACTERIAL) TESTING

In 2021, Jennifer Dillinger continued her work as a laboratory technician.

## BRR Screening

The Potato Certification Association of Nebraska did not conduct any PCR (polymerase chain reaction) tests for bacterial ring rot for the 2021 crop but did aid in the preparatory process for this test, which was conducted off-site.

## STORAGE INSPECTION

Bin Inspections are required for Certification:

### “I. CERTIFICATION

A. Certification is a voluntary agreement between the grower and the Potato Certification Association for the purpose of producing and distributing top quality seed tubers in approved and properly tagged containers to potato growers. The standards specified are enforced by the Potato Certification Association of Nebraska, as authorized by State Law (see preface of ‘Rules and Regulations for Certification of Nebraska State Seed Potatoes’). Certification of a lot is complete only when all requirements have been fulfilled in field, bin, and grade inspections, as determined by inspectors.”

Inspections for internal quality and bin inspections were done on all seed lots, even FYI lots. Storage inspections began in November and concluded in January. 2021 was the second year that The Potato Certification Association of Nebraska followed the new bin inspection protocol intended to keep the state in-line with a Memorandum of Understanding between the State Department of Agriculture and the United States Department of Agriculture. Bin inspections were not conducted on bin piles. Instead, samples were delivered to the PCAN office and inspections were conducted there. Inspection staff was trained to identify necrotic PVY, tobacco rattle virus and potato mop top virus. None of these viruses were identified during the bin inspection process.

## WINTER (POST-HARVEST) TEST

- **Grow-Out**
  - The 2021 grow-out of the post-harvest winter test was conducted near Waialua, Hawaii at Twin Bridge Farms. Samples were treated with Rindite and were dipped one- to -two days prior to planting. Samples were planted on November 4<sup>th</sup> and 5<sup>th</sup> by PCAN personnel (Adam Winchester and Adrian /Gonzalez), along with aid from Western Potatoes, Inc. and personnel from Colorado Potato Certification. There were no delays in planting and weather was ideal.
  - First inspections were conducted between December 9 and December 20 with second inspections continuing until January 1, 2022. Information collected at the time of inspection included:
    - The presence of bacterial and fungal diseases
    - The presence of varietal mix
    - Chemical damage
    - The presence of viruses

- Height at emergence
- Percent emergence
- Stand uniformity
- Leaf collection for virus testing started on December 9, 2021 and continued periodically until January 1, 2022. Leaves were collected by PCAN personnel and Dane Cook, a local contact on the North Shore. Virus testing was conducted by Mike Melzer and his staff at the University of Hawaii in Honolulu, Hawaii.
- Growing conditions at Twin Bridge Farms were excellent. Average emergence was 89%.
- 345 lots were entered into the post-harvest test, accounting for 5,257.55 acres. 86,945 leaves were tested. PVY was detected in 15% of lots entered into the post-harvest test. The number of acres rejected as part of the post-harvest test has steadily increased since 2019 (see Figures 7,8, and 9), while the number of acres passed has declined from 99% in 2019 to 91% in 2022.
- Both PVY<sup>NTN</sup> and PVY<sup>N-Wi</sup> strains were identified in the post-harvest test. PVY<sup>0</sup> was not identified.
- Several lots were sprout-tested both in-state and out-of-state.

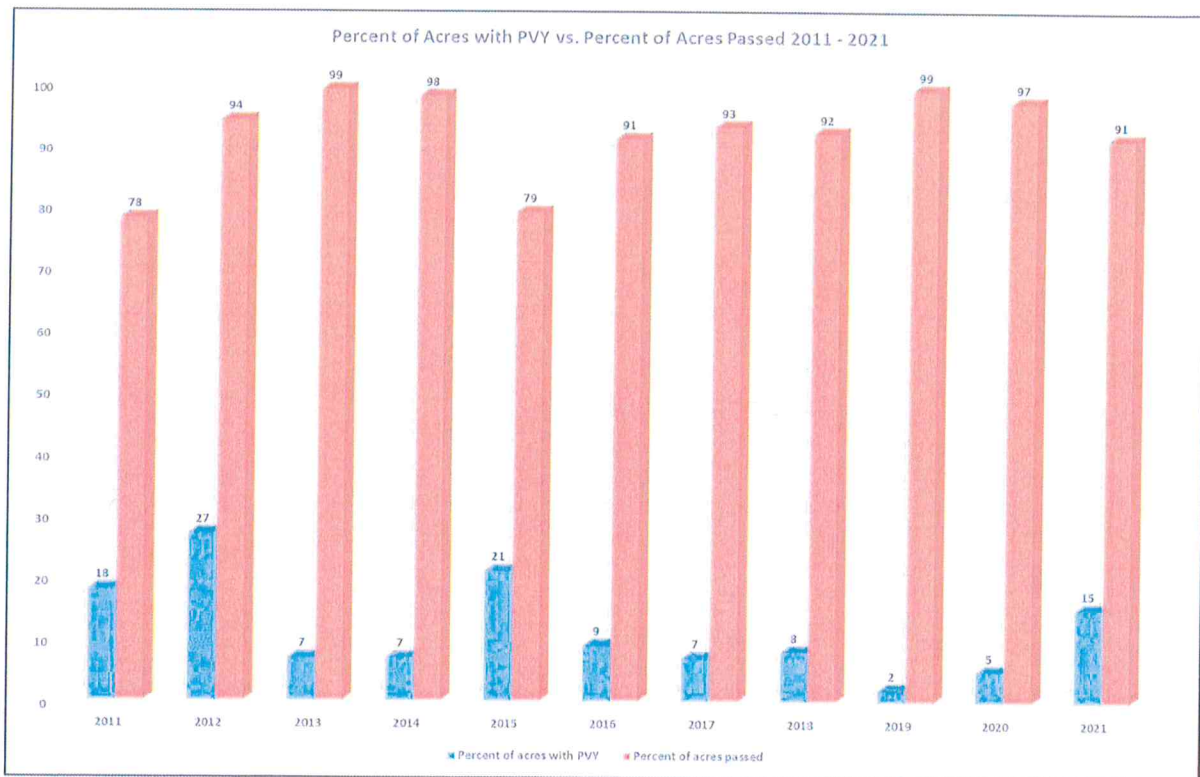


Figure 7. Percent of Acres with PVY vs. Percent of Acres Passed in the Post-Harvest Test 2011-2021

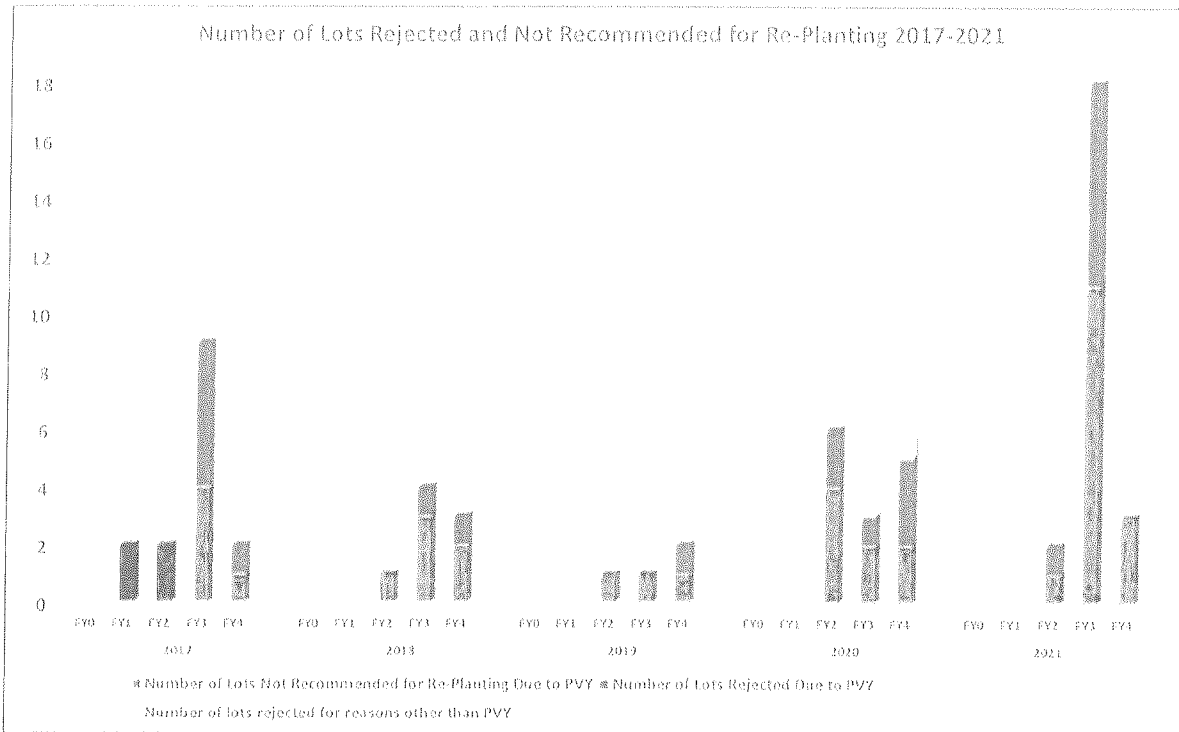


Figure 8. Number of Lots Rejected and Not Recommended for Re-Planting 2017-2021

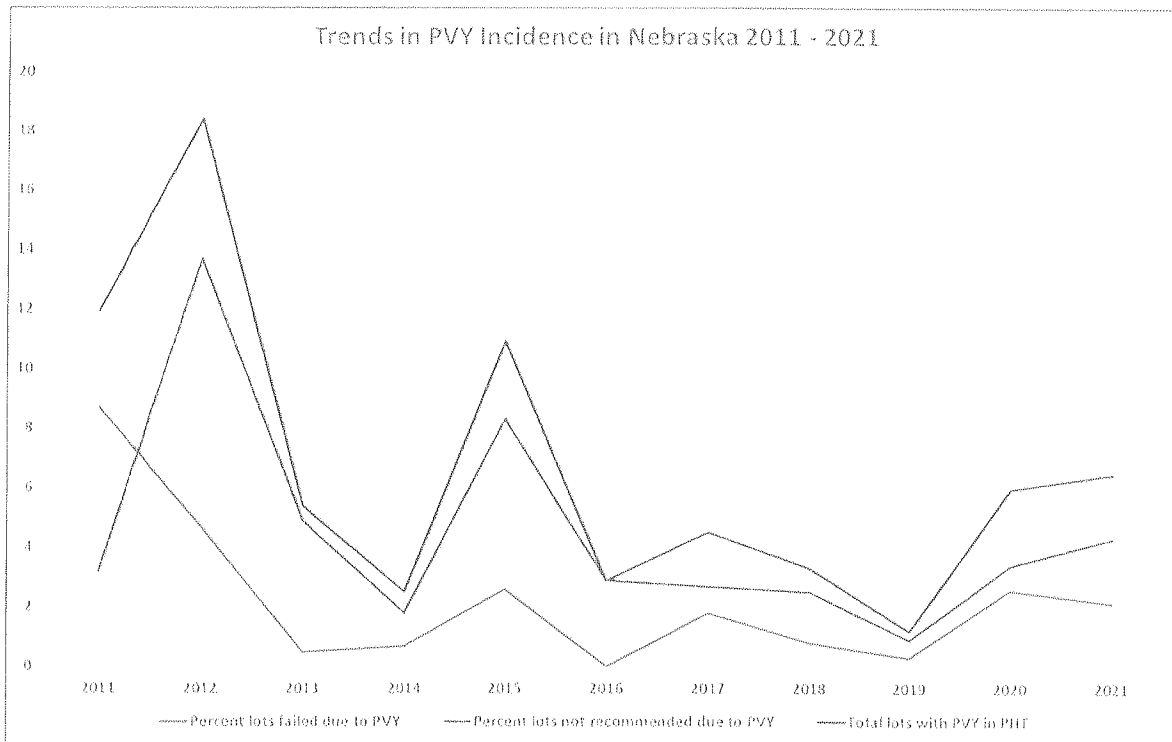


Figure 9. Trends in PVY Incidence in Nebraska 2011 to 2021.



# SHIPPING POINT INSPECTIONS

An overall description of the amount shipped by grade (figure 10) can be seen below.

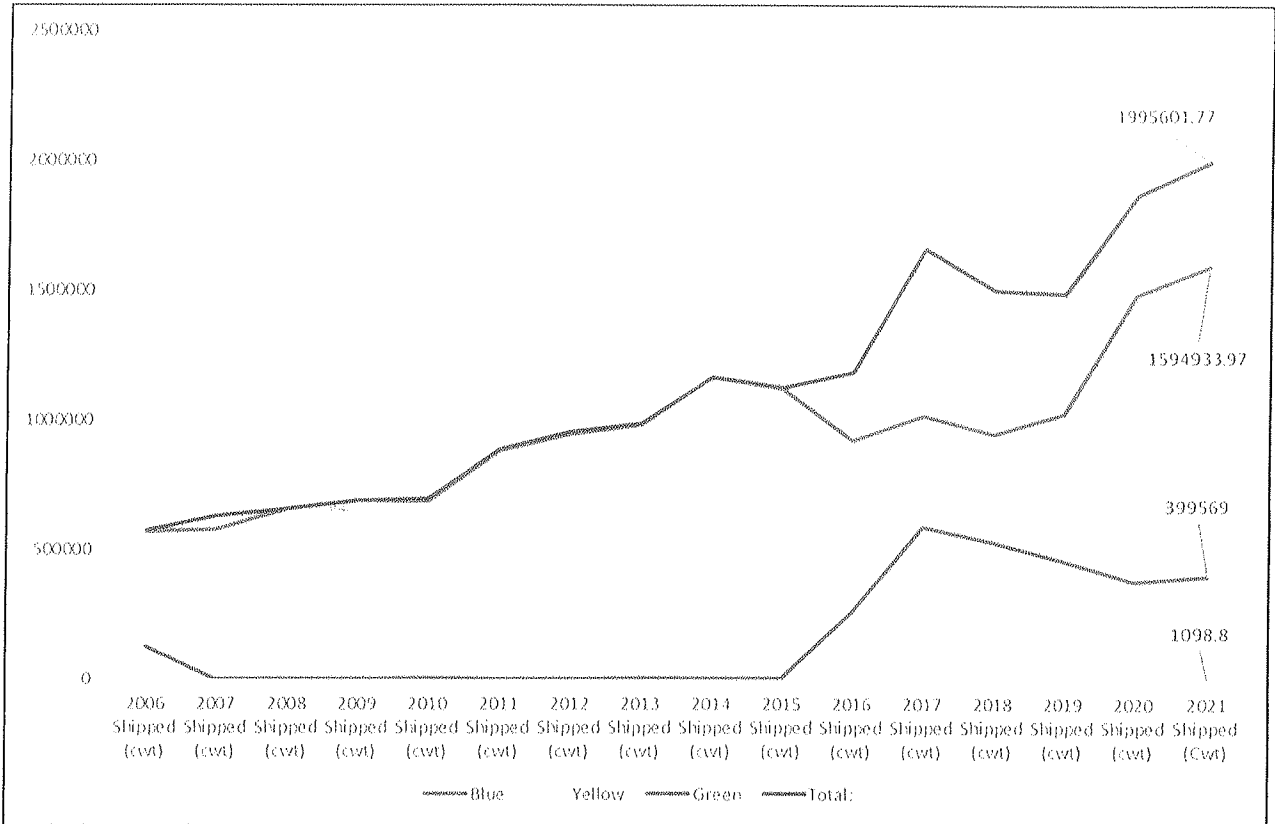


Figure 10. Summary by Grade Shipped 2006-2020

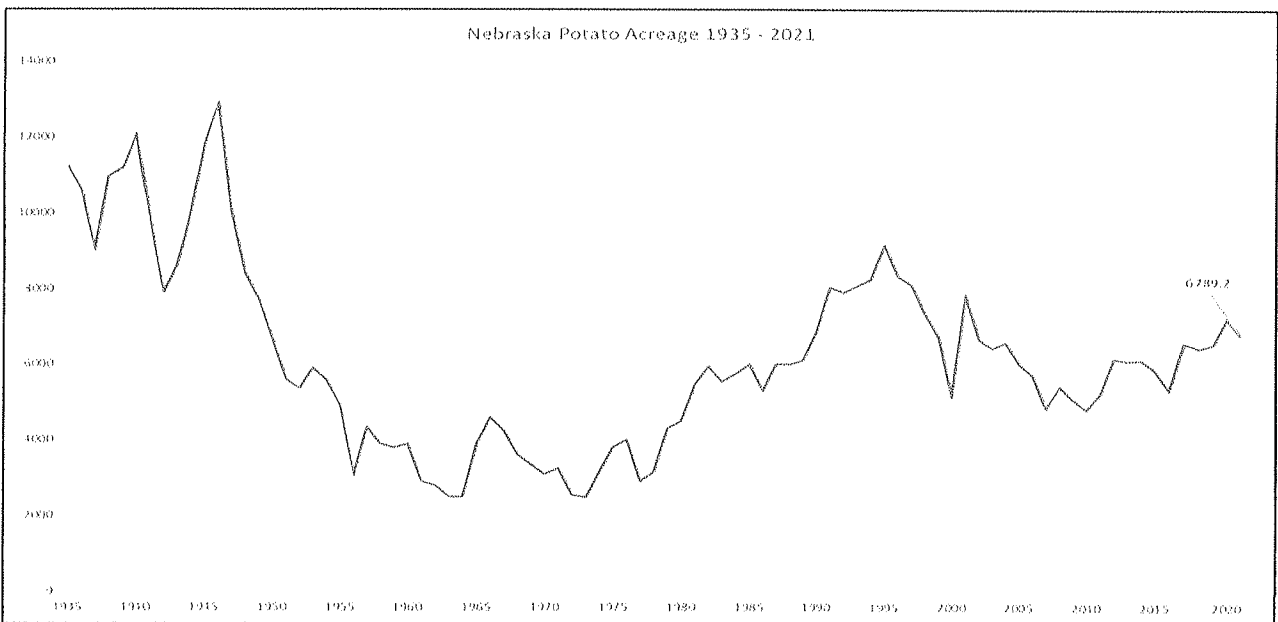


Figure 11. Nebraska Seed Potato Acreage 1935-2021