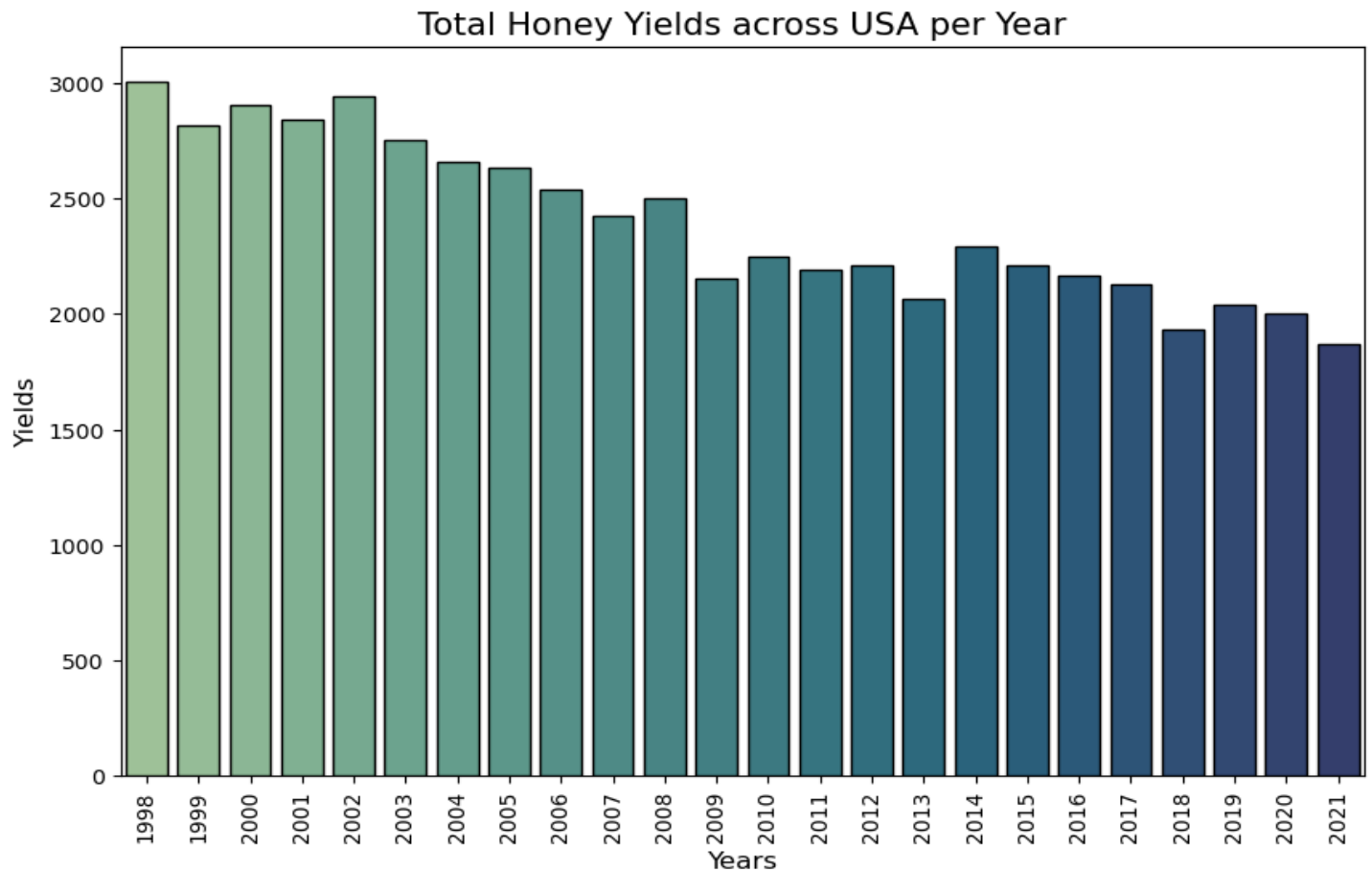


Assignment- Advance Python [Major] by Saurabh Shahi

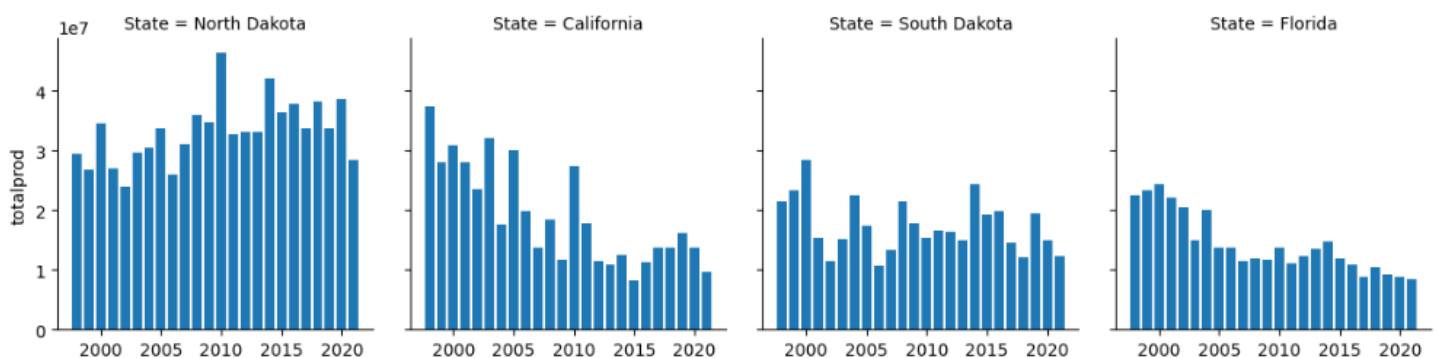
Q1. How has honey production yield changed from 1998 to 2021?

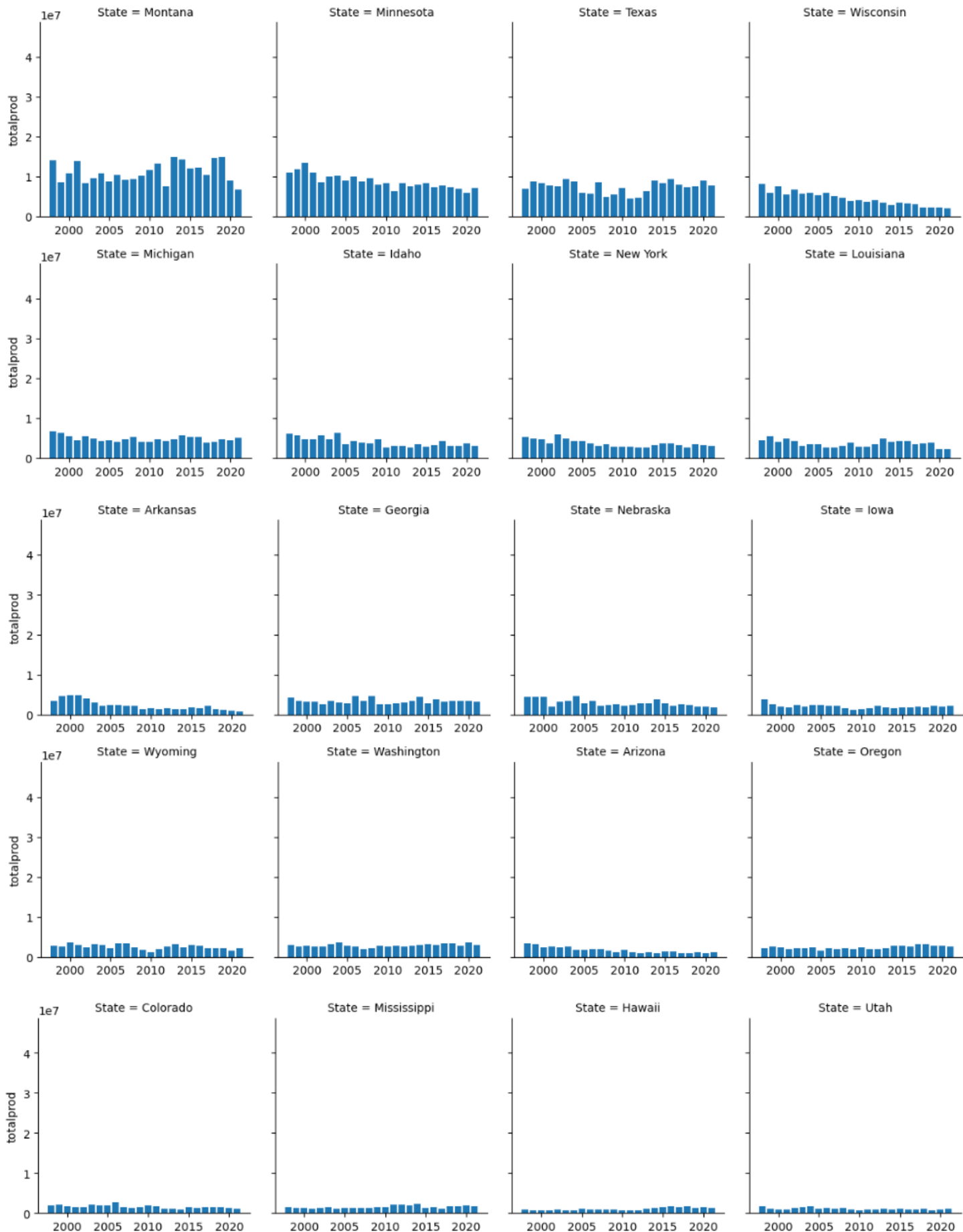
Sol 1. We can clearly see that honey yields have been dropping continuously. Though during some years yields increased in comparison to previous year, but altogether it has dropped. In 1998 total yields in USA were 3008 which has dropped to 1868 in the year 2021.

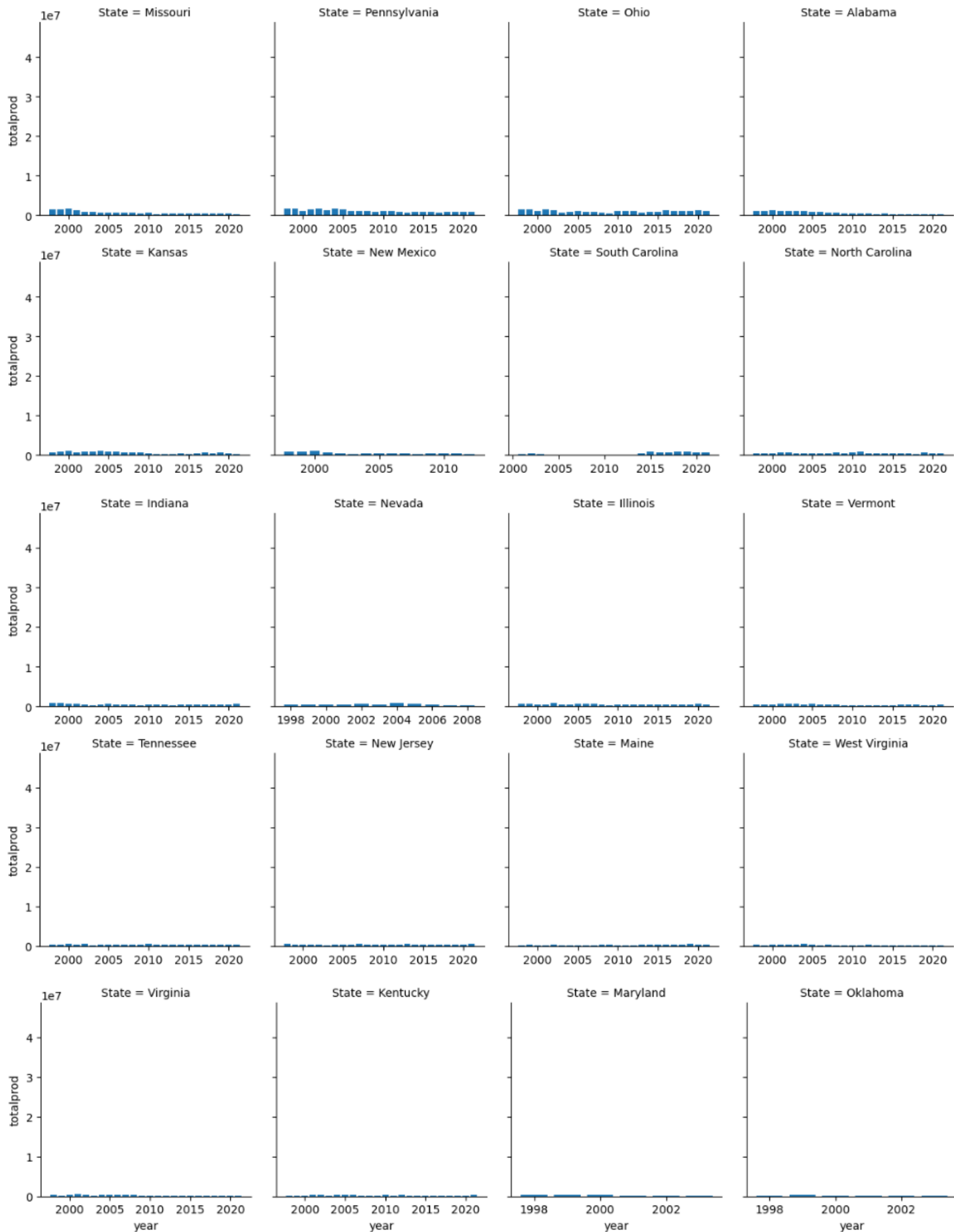


Q2. Over time, what are the major production trends across the states?

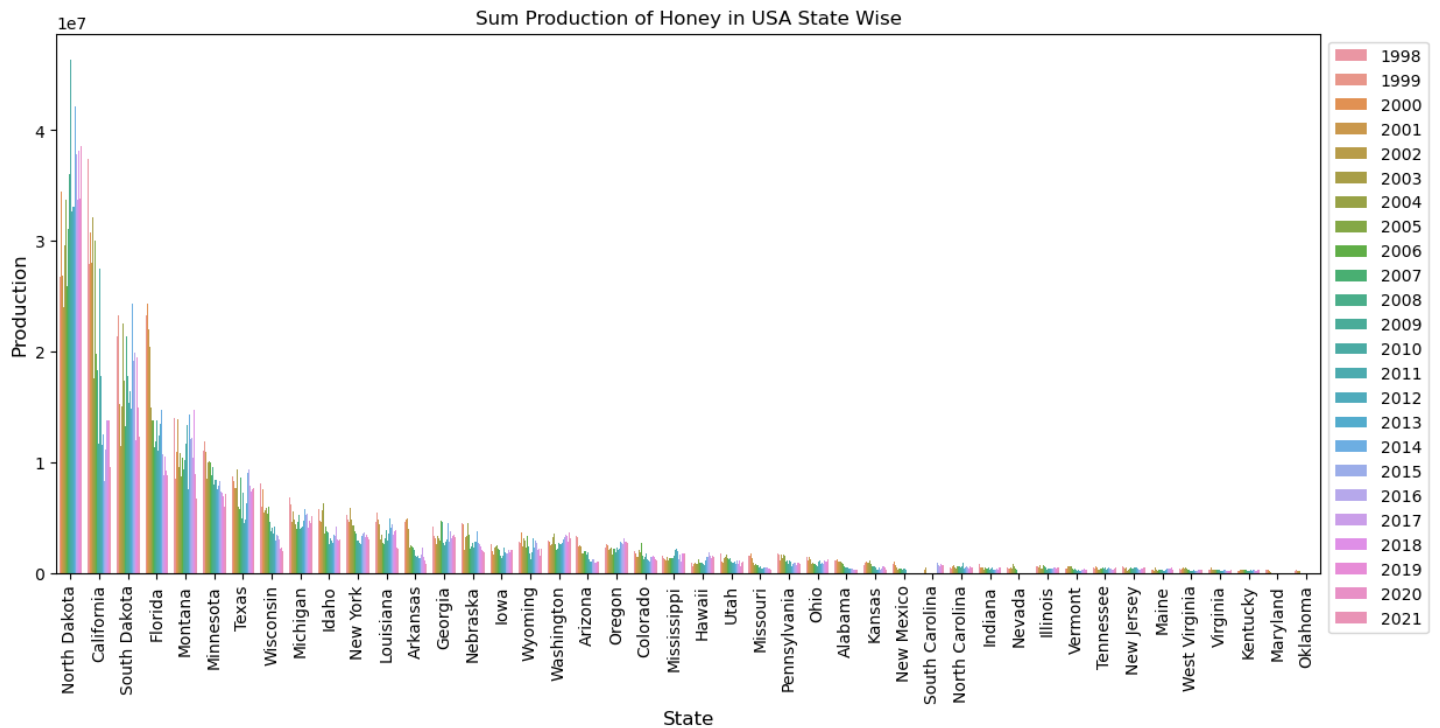
Sol 2. It can be clearly seen that over all honey production of USA in 1998 and 2021 had around 1 million pounds difference. North Dakota is the highest producer followed by California and South Dakota, whereas Oklahoma has least production.







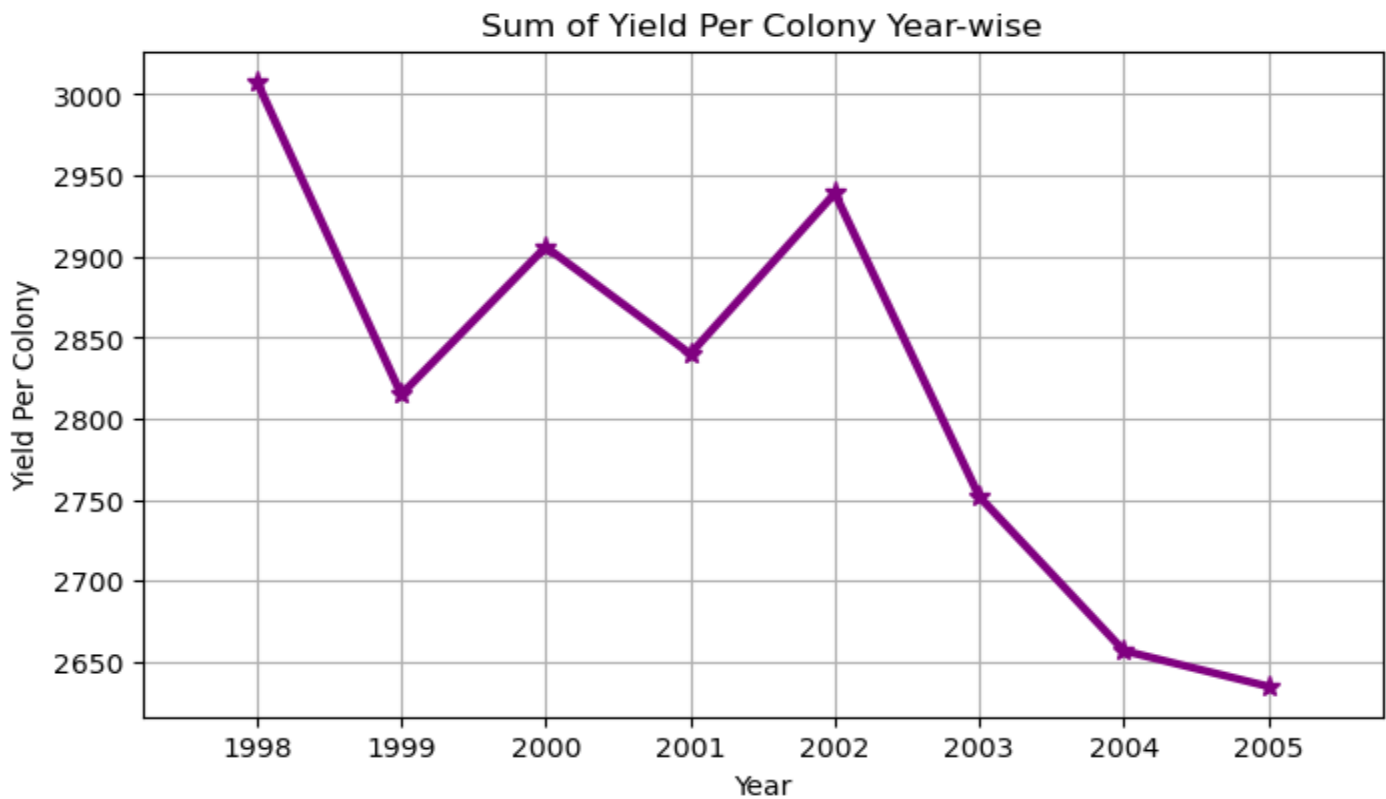
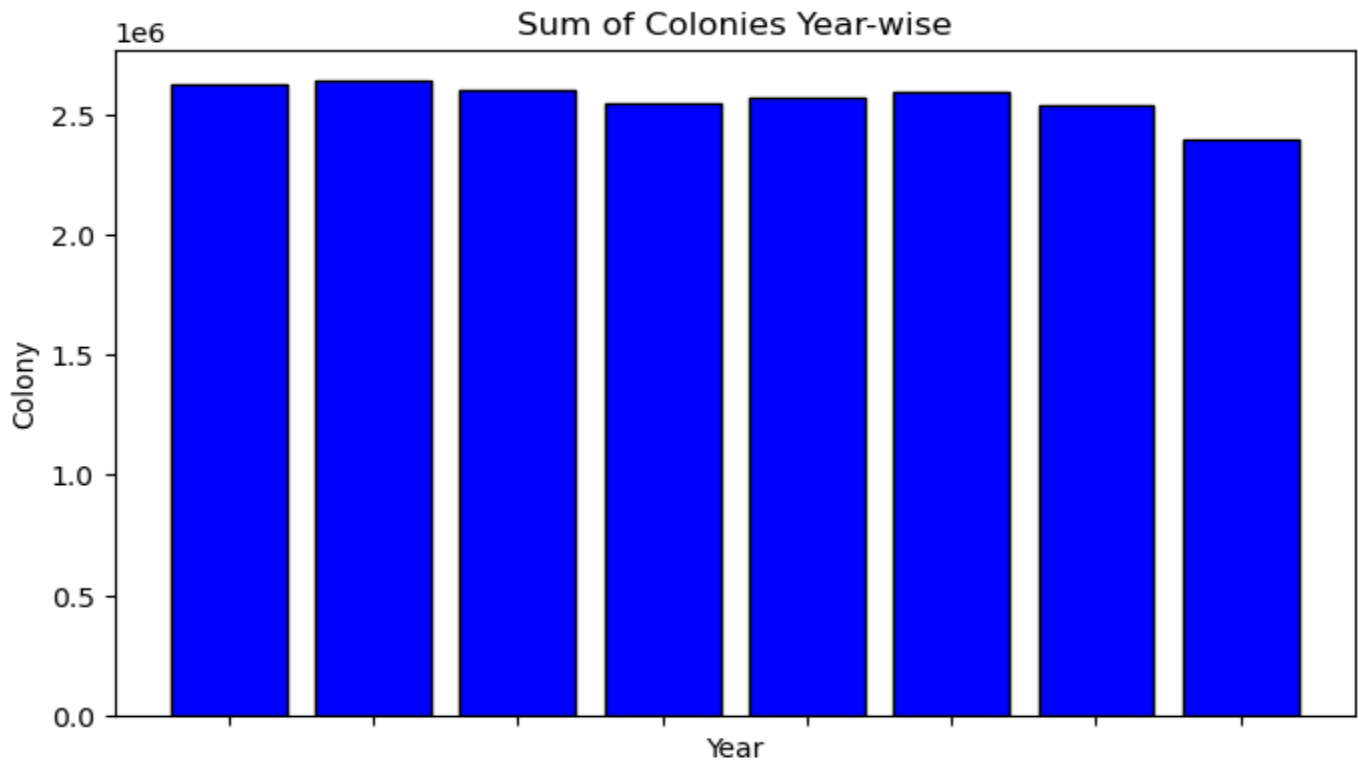
Combined graph study for different state.



Q3. Does the data show any trends in terms of the number of honey producing colonies and yield per colony before 2006, which was when concern over Colony Collapse Disorder spread nationwide?

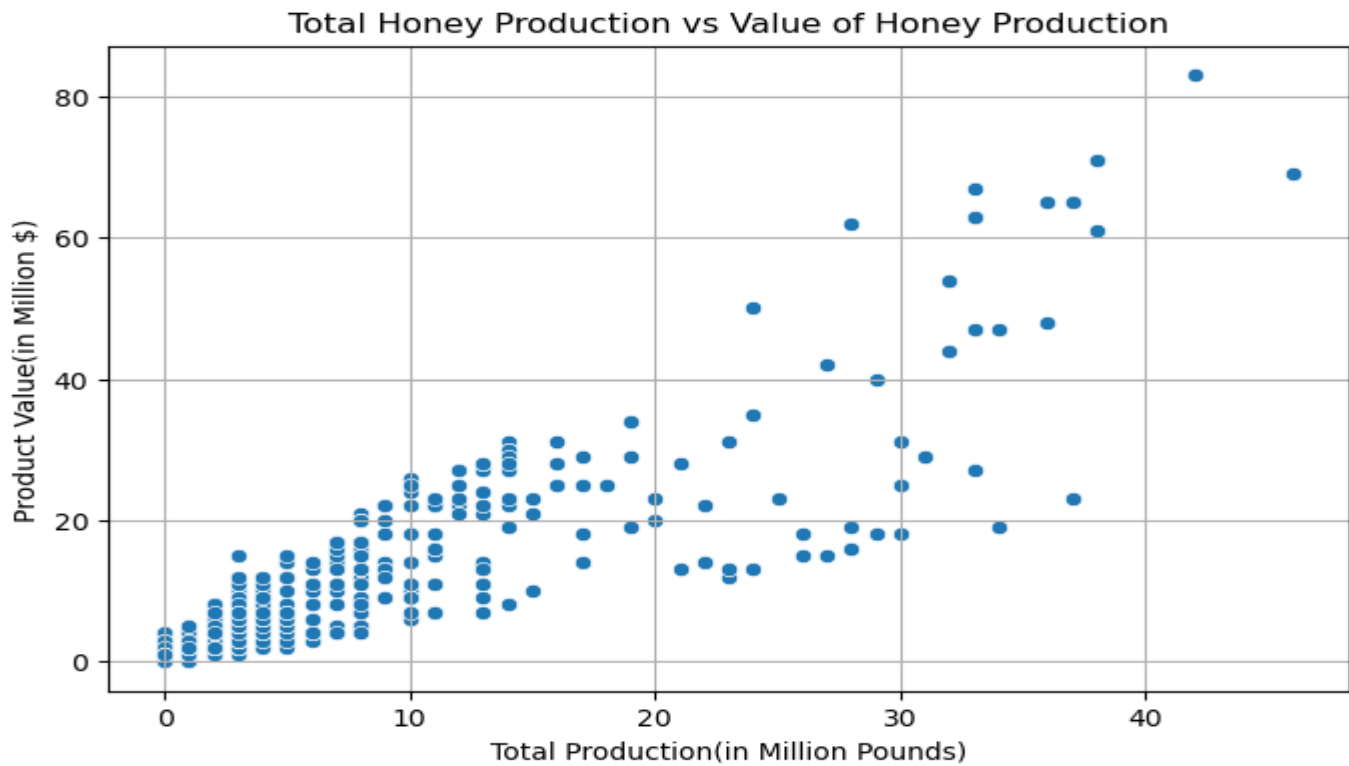
Sol 3. From the data it can be observed that the honey producing colonies before 2006 saw a decline. In 1998 there were **2621000** colonies where as in 2005 it was left to **2394000**.

Similarly, yield per colony also declined from 1998 which was **3008** to **2536** in 2005. It can be seen that yield per colony saw a steep decline in 1999 and then recovered but after that it fell from 2002 to 2005 drastically which may be because of "Colony Collapse Disorder".



Q4. Are there any patterns that can be observed between total honey production and value of production every year?

Sol 4. Total Honey Production and Value of Production shows very high positive correlation (0.900720), which means as the one increases there are very high chance the other will also increase.



Q5. How has the value of production, which in some sense could be tied to demand, changed every year?

Sol 5. Value of production, which in some sense could be tied to demand changed drastically over the year. In 1998 it was 146 million \$ to 314 million \$ in 2021 (may be due to imports as well). Though it saw a decline in 2004 due to “Colony Collapse Disorder” but after 2007 it grew until 2014 and again fell in 2015 and from there on it remained almost constant with some ups and downs.

