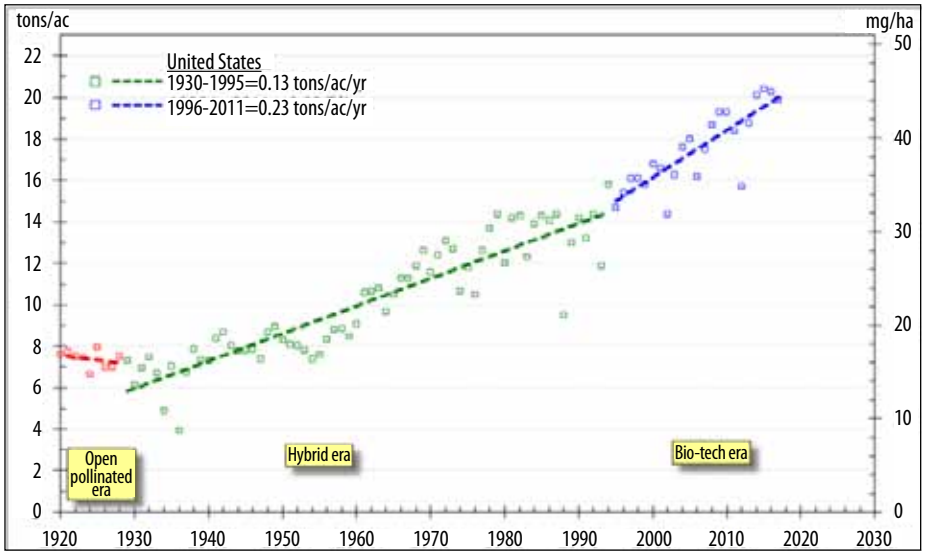
What's Happening with National Corn Silage Yield Trends?

Joe Lauer, University of Wisconsin

The story for US corn grain yields is well documented. They have been increasing by 2 bu/ac/yr. The trend for US corn silage yields is not as well known. The first USDA-NASS statistics for corn silage yield took place in 1919. Most corn silage statistics are collected for the northern tier states and for states with a large dairy or beef industry. For many years, corn silage was made from fields with other production stresses. Only recently has it become more of a priority due to larger dairy/livestock operations. During 2014-2017, corn silage yield ranged 19.9-20.4 tons/ac.

Figure 1. US corn silage yield over time.

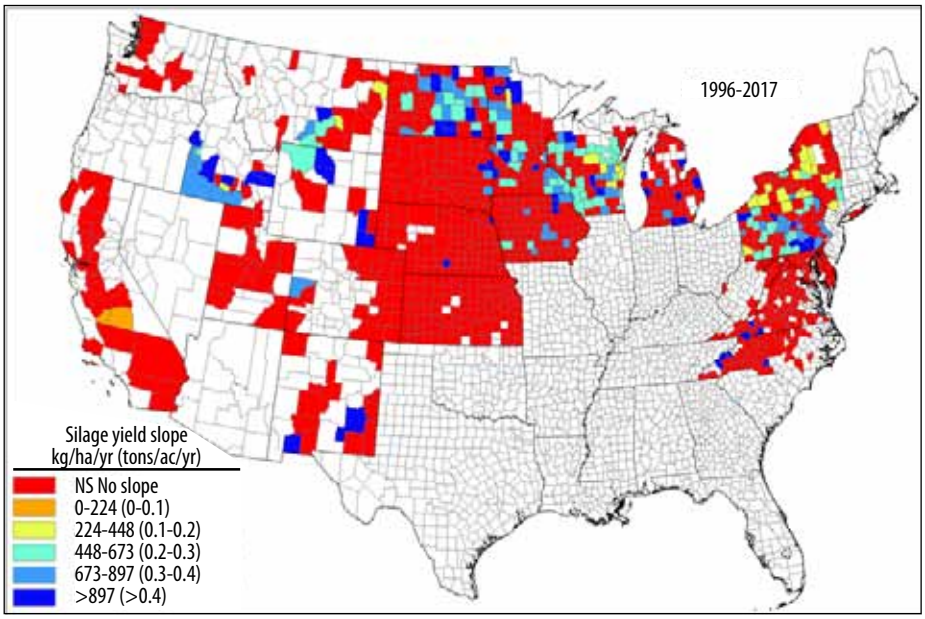


Data derived from USDA-NASS.

During the hybrid era (1930-1995) corn silage yields increased by 0.13 tons/ac/yr (Figure 1). Many reasons are given for this dramatic increase including development of improved, adapted hybrids, increased use of fertilizers and pesticides, machinery improvements, and improved management skills of corn silage farmers.

Yield has continued to increase during the "Bio-tech" era (1996 to present) by 0.23 tons/ac/yr. Bio-tech hybrids have insect and herbicide resistance that do well at "protecting" yield. End-users are more diligent about management for yield and quality.

Figure 2. Corn silage rate of yield change over time for US counties during the Bio-tech era (1996-2017).



Data derived from USDA-NASS.

Not all counties growing corn silage have an increasing yield trend (Figure 2). A total of 1,001 of 3,142 (32%) counties grow corn silage. Of the counties growing corn silage 786 (79%) have a non-significant trend indicating yield has not changed between 1996 and 2017. Of the 215 (21%) counties with increased yield, 59 (6%) have increased >0.4 tons/ac/yr, 129 (13%) have increased 0.2-0.4 tons/ac/yr, and 27 (2%) have increased 0.0-0.2 tons/ac/yr. Most yield increases have occurred in North Dakota, Minnesota, Pennsylvania, and Wisconsin.

Corn silage yields will likely continue to increase as new hybrids are developed and as managers prioritize and acquire skills for producing high-yielding, quality corn silage.