

**COMPARING YIELD AND FORAGE QUALITY OF ALFALFA CULTIVARS RELEASED FROM THE
1940'S THROUGH THE 1990'S.**

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At the CAIC meetings in July, 1997, data was presented that implied that forage yield in alfalfa varieties slightly declined between the years of 1978 and 1996 (Wiersma et al, 1997). Our objective was to compare varieties released over the past five decades side by side in yield trials at five locations across the Midwest to test whether yield in alfalfa has truly declined over time. Two varieties were chosen from each of the past five decades by examining the annually published CAIC Variety Trial data. At least three consecutive year (excluding the establishment year) averages for each variety at Rosemount, MN, Ames IA, Arlington, WI, and Manhattan, KS were used to select the varieties representative of the past five decades. Ten varieties, two from each of the previous five decades, four more recently released varieties ('Wintergreen', 'DK127', 'Jade II' and 'WL-324'), and two check varieties ('Vernal' and '5454') were compared for yield and forage quality in a randomized complete block design at five locations. All varieties released before 1994 underwent seed increase in 1998 and experiments were established in the spring of 1999 at Ames, IA, Manhattan, KS, Rosemount, MN, Columbus, OH and Arlington, WI. Forage was harvested once or twice in 1999, three to four times in 2000 and 2001, depending on the location. Alfalfa varieties were equivalent in forage yield the establishment year (1999) at all of the locations. Simple correlations between decade of varietal release and forage yield were $r=0.86$ ($P<0.10$) in 2000 and $r=0.97$ ($P<0.01$) in 2001. Regression analyses showed greater forage yield from alfalfa varieties released in more recent decades. These results suggest that in production year stands of alfalfa, forage yield has increased over the past five decades. Sub-samples for forage quality analyses were harvested once in 1999 and twice in both 2000 and 2001 at three of the locations. Results from the quality analyses will be discussed.

Reference:

Wiersma, D.W., D.J. Undersander, and J.G. Lauer. 1997. Lack of alfalfa yield progress in the Midwest. p. 36 In Central Alfalfa Improvement Conference Abstracts. LaCrosse, WI, July 16-18, 1997.

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