## **Corn Technology Points Alfalfa Yields in the Right Direction**

by Steve Wagner, Dairyland Seed Company

Ask the university experts how alfalfa yields have improved over the years and you get different answers, but none of them are good. Several studies have tracked varietal improvement over the years and suggest that genetic gain for forage yield between the 1950's and 1990's averaged only 0.18% improvement per year. Another University of Wisconsin study looked at research plot yields from 1977 to 1992 and actually saw no trend for yield improvement during that time period. This does not mean that alfalfa varieties did not improve during this time, but it does mean that genetic gain was not big enough to improve yields relative to weather challenges and more aggressive cutting management that was adopted during that period of time.

An extensive analysis of alfalfa yields was recently conducted comparing the performance of newer varieties head-to-head with the performance of older varieties in the same environments and cutting regimes. This analysis suggests that, industry wide, traditional synthetic breeding is gaining about 0.34% per year since the 1980's. This is much better than the gains estimated prior to the 1980's, but is still not very impressive. However, if you look at how hybrid alfalfa yields have improved since the first hybrid was released to the marketplace in 2001, hybrid alfalfa yields have improved at a rate of 0.67% per year. Hybrid technology has given alfalfa breeders the ability to nearly double the rate of genetic gain in this short amount of time.

Historic corn yields follow a similar trend. In the time period from 1860-1930 when synthetic corn varieties were in production, corn yields improved a total of only 2 bushels in 70 years. However, with the introduction of hybrid technology in the 1930's, the trend changed dramatically. Double-cross hybrid corn improved corn yields one bushel per acre per year, and then single-cross hybrids improved corn yields an average 1.8 bushels per acre every year since the 1960's! Hybrid technology revolutionized corn production in the United States and is now doing the same for alfalfa production.

The gains that hybrid alfalfa has made in just a short time are very exciting, but what is even more exciting is where hybrid alfalfa technology is headed. The performance of experimental hybrids in public state trials already suggests that hybrid alfalfa yields are now improving 1% per year. Companies typically replace an alfalfa variety in their lineup every five years. Expect your next new synthetic alfalfa variety to yield 1.7% better than the variety it is replacing. Expect your next new hybrid alfalfa variety to be 5% better than the hybrid alfalfa variety that it is replacing. At this rate, in just 10 years, hybrid alfalfa will allow you to produce your alfalfa forage needs on 10% fewer acres. If you need 500 acres of alfalfa now, in just 10 years, 450 acres will do the same job for you. What would you do with 50 extra acres, or with 250 extra tons of hay?

The real test is on the farm. I encourage you to test hybrid alfalfa in side-by-sides and weigh what is coming off of the field so you can see for yourself.