

Discovery

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Beating the winterhardy and yield dilemma

Midwest alfalfa growers may feel caught between a rock and a hard place — or maybe a snow bank and an ice sheet — when it comes to selecting varieties for winterhardiness and high yields.

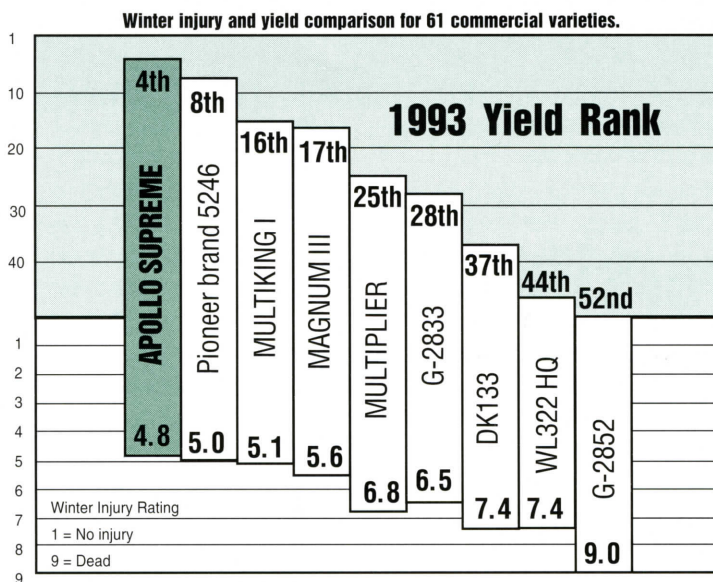
Recent harsh winters have left dead or damaged alfalfa stands that remind growers of the importance of alfalfa management to minimize winterkill. While winter severity and cultural practices have their effects on stand survivability, the key management step is variety selection, according to Dr. Dan Undersander, University of Wisconsin forage specialist.

"Many growers don't select the most winterhardy varieties because, traditionally, the hardiest alfalfas haven't produced the yields of less-winterhardy varieties" he says.

With Apollo Supreme, Arrow and Aggressor developed from aggressive research at America's Alfalfa, selecting for winterhardiness **and** yield doesn't have to leave growers in a dilemma.

Stand and deliver

During the harsh winters of '91 and '92, Iowa State University field trials (see graph) proved varieties with lower winter injury produced top yields. In the trials, Apollo Supreme, which has an excellent winterhardiness



rating, ranked fourth out of 61 commercial varieties in the yield category. The variety had the best combined yield and winter survival ranking of any full-season, 4-dormancy variety.

Apollo Supreme has proven resistance to *Phytophthora* root rot, *Verticillium* wilt, *Anthracnose* and leafhopper yellowing to help maintain stands that deliver more meat and milk. In a **NUTRI**SM NIRS test, Apollo Supreme produced 18,026 pounds of milk per acre over a full season (four cuttings).

Arrow, often held as a standard for hay-type varieties, combines an excellent winterhardiness rating and high resistance to *Phytophthora* root rot, *Fusarium* wilt and bacterial wilt. Leafhopper

yellowing and *Verticillium* wilt resistance also contribute to a variety that seems to improve with age. In 60 fifth-year yield comparisons, Arrow yielded one-half ton more than the average of six top competitors. Hardy, resistance qualities help Arrow survive winterkill conditions that would deplete many stands.

Aggressor lives up to its name according to Montfort, Wisc., dairyman Bill Bollant. "Aggressor has strong winterhardiness and good, fast regrowth," he says. The variety, which has a very good winterhardiness rating, delivers high resistance to *Anthracnose*, bacterial wilt, *Fusarium* wilt, *Phytophthora* root rot and pea aphids. Growers looking for

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Break-the-rules research

Even though winters get pretty harsh at America's Alfalfa northern Alberta, Canada, test plots, researchers don't try to minimize winterkill damage. In fact, they do about everything possible to maximize stand damage — all in the name of developing the hardiest alfalfa varieties.

This break-the-rules approach begins with identification of true winterhardiness. "The traditional way to measure winterhardiness is with fall dormancy, or fall height of the plant — shorter plants are considered hardier," says Wayne Hartman, senior dormant alfalfa breeder for America's Alfalfa, Ames, Iowa. "But this is not the whole story."

"Plants have to be out in the elements a few years so actual winters are the determining factor — you just can't substitute that." In fact, Hartman and other researchers transplant nursery selections 12 inches apart in 30-inch rows so plants are much more vulnerable to the environment.

"This research

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Beating *(continued from page 1)*

Aphanomyces protection or an extra cutting may especially benefit from Aggressor.

Alfagraze was developed to withstand winters, haying and grazing — about anything mother nature, growers or cattle can dish out. This unique variety features deep-set crowns and extra fall crown buds — the secrets to extra survivability and an excellent winterhardiness rating.

Managing for minimum damage

Varietal selection is the first step, but stand age and other factors affect winter survival. Often, older plants

are already weakened by diseases, Undersander says, or their larger tap roots are frost-injured, leaving alfalfa susceptible to winterkill.

Growers who checked fall potassium levels and fertilized accordingly at least 30 days before the first killing frost will help give stands an extra survival boost.

But, fertilization won't help heavy, wet soils that insulate less and freeze, heaving alfalfa crowns up out of the ground. In these fields, Undersander recommends growers consider field drainage systems, as well as hardier varieties.

Aggressive cutting schedules that provide high-quality hay can also put more stress on stands. Growers should allow an adequate fall rest period before the first frost. In northern regions, five to six weeks usually provides adequate plant growth to help insulate plants and minimize suffocation under ice. Growers farther south should remove fall growth to avoid alfalfa weevil wintering in the field.

Alfalfa producers who feel caught between ice and snow, or between winterhardy and high-yielding alfalfa, should review all factors affecting



winterkill, beginning with variety selection. Choosing America's Alfalfa varieties with documented winterhardiness and industry leading yields, can be the first step toward beating old man winter. ■

Alfalfa University - More than "Pomp and Circumstance"

No band performed the traditional graduation march and there were no giggling graduates with funny hats precariously balanced on their heads. Graduation at Alfalfa University in mid-August featured 150 hard-working alfalfa seed distributors and salesmen boning up on the terminology, pathology, and technology required to produce, sell and manage alfalfa seed.

America's Alfalfa University, not exactly your "normal" university, began more than a decade ago as a small seed school and production tour to help salesmen understand what goes into a bag of alfalfa seed. Today it has become a highly anticipated event attracting seedsmen from across the nation to the America's Alfalfa research and production facilities in Nampa, Idaho, and Napier, Iowa.

More than selling seed

Continuously expanding, this year's curriculum included

agronomic information designed to help alfalfa distributors build long-term partnerships with customers by teaching them how to help growers optimize alfalfa use, according to Jack Tredinnick, vice president and general manager for America's Alfalfa.

"We invited five top university Extension forage specialists to update our distributors and their salesmen on the latest grazing information and techniques," Tredinnick says. Topics included: establishing alfalfa to improve pastures; managing grazing systems; the advantages of grazing alfalfa for beef and dairy production; and forage quality.

America's Alfalfa research and production personnel demonstrated the industry's only Twin TrakSM Conditioning facility, caged seed pollination research; insect and disease identification; and an alfalfa zoo of diverse breeding stock.



Researchers describe exotic germplasm used in America's Alfalfa varieties.

Helping growers succeed

Dan Biddick, sales manager for Trelay, Inc. in Livingston, Wisc., like many other America's Alfalfa distributors, invested time and money to get his whole sales staff to Idaho for Alfalfa University. "We've attended the last three or four sessions, and found the program very informative, enlightening and full of valuable insight into alfalfa production," Biddick says.

"Alfalfa University helped me understand what great quality products are available from America's Alfalfa," says Bob Mar-

tin, district sales manager for Donley in Ashland, Ohio. "When you can physically show people what you're all about, above and beyond theory, sales jargon and university results, plus compare yourself to top competitors in side-by-side field demonstrations — it makes me extremely confident in the value-added products I'm selling," Martin adds.

Considering the hard work and dedication all attendees put forth to prepare for their graduation, all are certain to be outstanding in their field — or at least in an America's Alfalfa field somewhere! ■

Beef producer is sold on Alfagraze

“I just don’t see how you can get more return than with intensive grazing.”

If the best salesman is a satisfied customer, Walter Bollmann sounds as if he could sell anyone on intensive grazing.

Three years ago, the Ava, Ill., beef producer and his wife, JoAn, began grazing their cattle on Alfagraze.

Now, as efficiently as their cattle graze their paddocks, the Bollmanns list the benefits of intensive grazing, beginning with the bottom line.

Grazing for profit

“We figure we’re getting about 700 pounds of gain per acre. With beef prices at 80 cents a pound, that’s a return of \$560 per acre,” Bollmann explains. “Try getting that with corn, beans or wheat.”

Bollmann realizes a stronger net profit per acre because the animals harvest more feed with intensive grazing than they would with mechanical haying.

Since curious cattle graze every corner of a paddock down to about 3 inches, forage utilization is very efficient, Bollmann says. “The cattle have virtually eliminated the expense of wasted feed.” And foraging cattle have almost eliminated the labor and expenses of managing manure and fertilizer application.

Thorough grazing also attests to the high quality of Alfagraze over grass pasture — quality that Bollmann says produces superior animals and higher average daily gains.

The Bollmanns don’t hesitate to talk forage quality, cost benefits and average daily gains, but it’s more impressive to show their intensive grazing system, which they did at a field day last summer.

With help from their



JoAn and Walter Bollmann have earned a \$560/acre return by intensely grazing their cattle on Alfagraze.

county Extension agent and America’s Alfalfa, the Bollmanns established two 7.5-acre plots with combinations of Alfagraze, Apollo Supreme, Apollo and another hay type. Conscious of trying to use materials most cattle producers already would have, they used their existing electrified polywire to fence the plots into 10 paddocks.

Next came the cattle. The Bollmanns usually graze 45 stockers on a paddock for 3 to 3 1/2 days. After being rotated through 10 paddocks, the cattle have mimicked mechanical harvesting.

“With this system, we’re also harvesting every 30 days. We open the gate, call the cattle and they’re in the new paddock ready to go again,” he says.

Once cattle are accustomed to the wire and the routine, Bollman says moving his “harvesters” takes about 15 minutes every third day. In addition to the time and labor savings, he likes the idea that the cattle are easier to handle and diagnose for problems.

One potential health hazard he keeps alert for is bloating, which can occur in lush alfalfa. Bollmann has avoided any bloating problems by filling cattle up with dry hay

and gradually exposing them to the paddock each spring. If he expects cattle to have trouble because of wet forage, he’ll feed a bloat preventative or simply avoid the wet field.

Alfagraze delivers

During the wet summer of 1993, the Bollmanns didn’t have trouble with bloating, but they did have to mechanically cut hay off some paddocks that produced an abundance of forage.

Rules — (continued from page 1)

strategy about doubles the impact of winter on our parent plant selection process,” he says.

Secondly, researchers apply “stress management” that allows, even encourages, factors such as *Phytophthora*, *Aphanomyces*, leafhopper infestation, inadequate fertilization, overgrazing and aggressive harvest schedules to take their tolls on alfalfa.

“We really try to abuse potential varieties,” he says. “If we put stress on the plant, then the winter will help decide varieties more quickly for us.”

In addition to high quality and high yields, they expect Alfagraze, a variety developed to withstand intensive grazing or haying, to last longer than other alfalfas. “It looks like it’s going to last five years so far,” he says.

Long stand life will be just one more item on the Bollmanns’ list of economic and management benefits of their intensive grazing program. ■

But where time is the third key factor, “quick” is relative as research requires seven to 10 years to bring new varieties to the market.

“We take all the time necessary to make sure our varieties withstand the rigors of winter,” Hartman says. “Avoiding research shortcuts pays off with the quality of varieties such as Arrow, Aggressor and Apollo Supreme.”

And this aggressive, break-the-rules research will continue to show up with more stress-tested, winter-proven varieties from America’s Alfalfa. ■

Red Clover - The other legume

When talking about or planting legumes, most people immediately think of alfalfa. A word to the wise: Don't forget red clover.

"In terms of yield, adaptability, dependability and broad use for hay, silage and grazing, red clover is considered to be the number two legume behind alfalfa," says Warren Thompson, National Forage Specialist for America's Alfalfa.

Red clover, like other legumes, produces nitrogen. When grown with grasses, red clover will replace the equivalent of 150 to 200 lbs. of commercial nitrogen on straight grass pastures, says Thompson. University studies have shown that a combination of red clover and grasses helps increase meat and milk production, improves conception rates and provides longer summer grazing than pure stands of cool-season grasses.

Redland III performs

Red clover can improve pastures and increase profits, so it's vitally important to choose a red clover variety that will deliver both yield and persistence. Redland III

Brand™ red clover, the new high performance variety from America's Alfalfa, is the best choice for superior persistence and vigor, as well as exceptional winter survival. Redland III also has strong disease resistance over other varieties to northern and southern *Anthracnose*, powdery mildew and *Fusarium* root rot, and it exhibits a darker green color with resistance to potato leafhopper yellowing.

Yield tests from Wisconsin to Tennessee show that Redland III brand red clover outyields Kenland by 25%, Renegade by 16%, Arlington by 11%, Kenstar by 9%, Marathon by 9% and Reddy by 8%.

Red clover is adaptable

Red clover fits into various agronomic seeding practices, including conventional prepared seedbeds, over-drilling into standing small grains, no-till seeding into existing

grasses, and the new practice of "trampling-in." It can be harvested during its first year as hay at about 10 days after the first bloom appears, or grazed as soon as a good canopy is formed. Subsequent harvests, depending on moisture, will normally follow in four to five week intervals. Rotation grazing at these same intervals will produce more grazing and make animal management easier. Red clover can be grazed continually, but Thompson warns that yields will be lowered even when a constant standing stubble of three to five inches is maintained.

Red clover certainly has its place in a haying or grazing operation. But Thompson cautions growers, "Don't think of it as a replacement for alfalfa. Used with grasses, red clover is a great short-rotation legume to supplement normal alfalfa production," he says. ■

"Trampling-in"

It may sound too easy, but trampling-in is a simple agronomic practice that makes pasture improvement with red clover as easy as one, two, three.

1. Use stocking rates of 10 to 20 cattle per acre to suppress grass growth before broadcast seeding red clover in the pasture.
2. Broadcast seed pre-inoculated Redland III into the pasture while cattle are still there. Move hay for feed around field to ensure the seed is trampled-in evenly.
3. Remove cattle before they bite off new clover plants. Return cattle when clover is 8 to 12 inches tall.

"Trampling-in is a cheap and easy way to improve pastures," says Dr. Carl Hoveland, University of Georgia. He suggests seeding 10 lbs. of red clover per acre in late winter or early spring. In the lower south, Hoveland advises January or February seedings. ■

Redland III Outyields:	The Competition					
	Kenland	Renegade	Arlington	Kenstar	Marathon	Reddy
by	25%	16%	11%	9%	9%	8%

Data compiled from yield trials in Pennsylvania, Tennessee, Kentucky and Wisconsin.



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