THE GRAZIER

New Birdsfoot Trefoil Takes Flight

A new creeping birdsfoot trefoil is scheduled for release in 1996. Because of limited supply in its first year, the first big year may be 1997. Yet even now, at least three years before it is released, this new cultivar is raising many questions.

What exactly is this new birdsfoot trefoil? Why is it special?

The new birdsfoot trefoil is special because it will persist better than current varieties. There are several reasons, but the most important one is because it produces rhizomes, or underground stems. The rhizomes allow the plant to spread throughout the field, much like white clover spreads with its stolens, or runners.

Rhizomes provide a solution to the major problem in birdsfoot trefoil — lack of persistence. To better appreciate the rhizome solution, we should understand lack of persistence. In the Midwest, birdsfoot trefoil cannot persist without natural reseeding. This may seem odd, since birdsfoot trefoil is a perennial. However, because it is susceptible to many fungal organisms, it is a short-lived perennial. Its roots and crowns host many fungi then begin to rot as they develop root and crown rot. When this occurs, plants last only one or two more years.

As the two- and three-year-old plants die, new seedlings are established. This is why birdsfoot trefoil persists so well on roadsides while it disappears in continuously grazed pastures; it is rested for reseeding. With rhizomes, the plant can maintain the stand without reseeding.

There are other reasons for its improved persistence. First, new birdsfoot trefoil does not heave out of the soil like other plants, because the rhizomes anchor the plant to the soil. Second, it flowers early, permitting some reseeding to occur as a standard backup system. Some may argue this early flowering is a bad trait because it reduces forage quality. However, birdsfoot trefoil quality is high, even when fully mature. Therefore forage quality is given second or third priority. Third, the new birdsfoot trefoil contains chitinase. This is an enzyme that gives plants natural resistance against fungi.

Will it spread better fhan Spreador alfalfa?

Probably so, says Joe Bouton, University of Georgia plant breeder who released Alfagraze. Alfalfa loses it rhizomes under moderate to heavy grazing. The new birdsfoot trefoil will respond just the opposite, producing more rhizomes under grazing. A similar plant in New Zealand is big trefoil (Lotus pedunculatus). The rhizomes of big trefoil multiply when pastures are grazed heavily.

Will it work on my farm?

Since it is birdsfoot trefoil, it will persist better than alfalfa in wet and low fertility areas. Since it spreads by rhizomes it should persist better than current cultivars under long grazing periods. Interestingly, it should survive severe winters, even though it is a hybrid between plants from Africa and the southern United States. Future research is required to see if it needs a rest period before the first killing frost in the fall.

Why the delay in releasing it?

Actually, there has been no delay. The rhizome-producing parents were collected during a 1989 USDA expedition. Since then, the plants have been studied extensively. They were crossed with domestic cultivars. That in itself was a success, especially since the rhizomes were not lost in the hybrids. Next, the hybrids were studied for fertility. Finally, hybrids were screened for the development of a new cultivar. All of this progress occured within a four-year period. This year, seed increase began as 27,000 plants were grown in a greenhouse and transplanted into the field. Seed will be produced for the next two years, and the time required to accumulate seed is actually a blessing. It allows time for much needed research.

In addition to the data already collected, other information is needed before this crop can be released. Research over the next two years must evaluate the new cultivar under grazing. Field studies will document how the plant survives and impacts animal performance. In addition, field studies will document disease resistance, storage carbohydrates, seedling vigor and management. All of these studies are needed to provide information once the cultivar is released.

How will I gef it and how much will seed cost?

At present, we do not know who will handle the seed. Nor do we know how much seed will cost. Seed availability and cost will probably be similar to other newly released cultivars of birdsfoot trefoil.

Should I wait until then to piant birdsfoot trefoil?

No. If you want the new birdsfoot trefoil on your farm, by all means, plant current cultivars. Experiment in small acres. You will learn what trefoil likes and dislikes about your management. More importantly, you will have the benefits of trefoil as a forage on your farm years before you buy the new cultivar with rhizomes. When the new cultivar is available, you can oversecd your existing trefoil stand; your management will promote the best plant type, with or without rhizomes, on your farm.

— Paul Beuselinck, USDA Agricultural Research Service

Cow Pies Get No Respect But They are Good Fertilizer

Paul Peterson counts cow pies.

That's just one of dozens of measurements the research agronomist makes in studying management intensive grazing at the University of Missouri Forage Systems Research Center (FSRC).

"Manure is one of the most under-appreciated resources on a beef farm," Peterson told visitors at the FSRC Pasture Day.

A cow is a walking fertilizer manufacturing factory, making an average of a dozen deposits a day.

"Some 70 to 90 percent of the fertility taken in with forage eaten by a cow goes out the back end," Peterson said. 'The average cow makes about a dozen deposits a day while grazing and the average deposit is 5 to 6 pounds."

When converted to fertilizer value that adds up to an extreme value.

A cow can make $50 to $100 worth of manure a year. On a 100-cow beef herd that's $5,000 to $10,000.

As part of his research, Peterson is studying factors that affect manure distribution in the grazing paddocks. To be of most value, the cow pies should be evenIy distributed over the pasture to return the fertility where it's needed.

Without good grazing management cows tend to deposit the fertility in a few sites. Rotational grazing — dividing large pastures into smaller paddocks — helps on distribution. If left in a pasture for a week, the cows will develop favored bedding places, or what Peterson calls camp sites. When a cow gets up from resting, it will make a deposit.

Cows do the same near spots where they wait for water, mineral and salt. At the watering spots, the beef herd tends to urinate more. Urine is high in potash fertility.

By separating watering and mineral feeding sites, the cows walk back and forth, increasing the chances of spreading their cow pie deposits A shade tree in a grazing paddock can be the site of high fertility deposits. Most grazing paddocks at the MU research farm have no shade trees.

— Duane Dailey, University of Missouri Extension information

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