No Till Notes: Forages I

By Mark Watson, Panhandle No Till Educator

Every once in a while something comes along that makes a lot of sense. I think this is the case with forage crops in a no till crop production system integrating cattle into the farming operation.

A group of NRCS soil conservationists and producers from Burley County, North Dakota have been working on a system of planting forage mixtures on dry land acres, grazing cattle on these forages, and combining this with grain crop production. Several of these gentlemen have given presentations at our local no till meetings over the past few years.

Jay Fuhrer and Ken Miller work with NRCS in Burley County. Jay and Ken have worked with producers planting forage crops of different types in fields and test plots to study different mixtures or cocktails of forages which provide good cattle grazing along with improving the quality of the soil for grain crop production.

Gabe Brown is a producer from Burley County who has also been a speaker at our local no till meetings. Gabe has spoken about his experience with these forage mixtures and how he has improved his cattle operation, his soil, and the profitability of his operation using these forage cocktails.

Burley County, North Dakota is similar to the Panhandle of Nebraska as far as annual precipitation and soil. Burley County averages 15 inches of precipitation and their soils are similar to ours in water holding capacity and variety of soils. They have better soils along the river bottom and lighter soils along the breaks and hills as you get away from the river.

Their idea of utilizing these forage mixtures in their no till crop production systems is to make better use of the soil, sun and moisture to improve the profitability in their operations. By growing these forage mixtures of grass and legume crops they are mimicking the native prairie. They are also grazing the cattle on these acres in the same way the buffalo grazed the native prairie. They use high intensity grazing over short periods of time to get the best grazing possible and extend the production of the forage crop.

No Till Notes: Forages II

As producers we often get locked in to grain production and don't really look at the land we farm as a resource with many possibilities. Many of us produce winter wheat on our dry land acres in a wheat/summer fallow rotation and have been in this rotation for decades. Many producers also have cattle in their operation and often struggle with drought conditions and lack of forage. Pastures are often lacking in enough forage production to sustain the herd consistently. By looking at our land resource from a different perspective, forages offer the opportunity to better utilize this resource and increase profitability in our operations.

With the introduction of forages planted into the dry land acres there are many advantages we may not have thought of. By increasing the amount of forage produced in the operation, there is the opportunity to rest the pastures and allow them to recover. The introduction of forages on dry land acres may also offer the opportunity to increase the size of the herd.

Another benefit of introducing forages into the operation is the opportunity to better utilize the land resource, the moisture we receive, and improve the quality of our soil which we work with. We could also break up the persistent weed patterns which cause problems in our winter wheat/summer fallow rotation.

Grain producers who utilize continuous crop no till may find these forage crops provide a transition crop to get back to winter wheat. With the exception of field peas, most grain crops use moisture late into the growing season. The problem with crops such as proso millet is a short or nonexistent fallow period to transition to winter wheat. This often leaves the winter wheat crop at a disadvantage. Forage crops would allow a longer fallow period to store moisture to transition to the following wheat crop.

No Till Notes: Forages III

The producers and NRCS soil conservationists from North Dakota have shared with me the recipes they use for their forage crops. They have different forage cocktails for each phase of the growing season with a spring, summer, and fall forage mixture.

The producers from North Dakota stress the importance of grazing no more than 50% of the forage. It is very important to leave a good cover of residue for the following crop. This provides the same benefits as leaving the crop residue from grain production in the field. The residue provides protection for the soil, decreases soil moisture evaporation, increases water infiltration, supplies a food source for soil micro-organisms, and improves the organic matter content of the soil.

The rotational opportunities to add these forages into our dry land acres are endless. For our own operation where we produce all grain at the present, a rotation of winter wheat, corn, followed by the spring forage mix may be an option. My thought here is we could plant the spring forage following corn, graze the forage from mid-June till July, then terminate the crop following grazing. This would provide a fallow period to store moisture for the following winter wheat crop.

Another rotation which would add more forage into the operation and eliminate the corn from the rotation would be to harvest a winter wheat crop, followed by a spring forage mixture. After grazing the spring mixture, you could have a short fallow period and then plant a fall forage mix. This would allow some grazing in late fall. The fall mixture will grow again the following spring, where you could graze the mixture again. After this grazing period, the crop would be terminated and winter wheat could be planted again in the fall.

No Till Notes: Forages IV

I wanted to share with you the recipes for the different forage cocktail mixes the producers from North Dakota are using. An important point to remember is to use the forages which are convenient and reasonably priced. Some substitutions for the different mixes may also be applicable depending on your needs and availability of seed. I am also including the planting dates they use in North Dakota for the different cocktails. We may want to adjust these planting dates and move them up a week or so since we farm quite a ways south of North Dakota.

The spring/cool season cocktail mix they recommend planting them from April 15 to June 1. The recipe for the spring forage mix is 20lbs/ac of forage peas or 15 lbs/ac of

lentils. Add to this 10 lbs/ac of annual rye grass or 20lbs/ac of oats or barley. In this mixture they also add 1lb/ac of turnips and sweet clover, along with 2lbs/ac of oil seed radish and sunflower.

As you can see they are creating a forage mixture which has a wide range of plant types. They combine legumes, grasses and deep rooted types of plant mixtures. Their idea is to provide good forage for the cattle and at the same time produce nitrogen for the soil, along with deep rooted plants to capture deeper nutrients in the soil and enhance water infiltration into the soil. This mixture provides good forage and enhances the quality of the soil.

For their summer/warm season forage cocktail, which they plant from June 1 to July 20, they combine the following plants. They combine 10lbs/ac of cowpeas with 15lbs/ac of soybeans. They add to this 8lbs/ac of either millet or sudan. Along with this they put in 1lb/ac of turnips and sweet clover and 2lbs/ac of oil seed radish and sunflower.

For the fall cool season mix which they plant from July 20 to September 10th they plant 75lbs/ac of either winter wheat or triticale. They add 15lbs/ac of hairy vetch along with 1lb/ac of turnip, red clover, and sweet clover. They also add to this mix 2lbs/ac of oil seed radish. If this mixture is planted in September they may also add 6-8lbs/ac of buckwheat.

I want to stress that it is very important no to graze more than 50% of the forage crop. Leaving a good cover of residue on the soil surface for the next crop to be planted in has many advantages. This layer of crop residue is the key for success with the following crop by protecting the soil surface, improving water infiltration, reducing soil moisture evaporation, feeding soil microorganisms and improving soil organic matter.