

Considerations for pastures that have lost irrigation water

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Irrigation water is in short supply for many irrigated pasture ranches this year. Possible fall rains are still more than two months away. Now is the time to prepare for restoring irrigated pasture production when irrigation water becomes available. A plan should be developed that addresses grazing management, fire protection, planting preparation, planting and grazing management after seeding.



MANAGING DRY PASTURES

Grazing management now

Grazing off dead forage helps for fire protection and is necessary prior to drilling or harrowing in the fall. However, there is one downside to grazing off forage in summer versus the fall. The standing forage provides cover for the soil during the hot summer, essentially acting as a mulch. With a lack of moisture and soil cover the sun burns off the soil organic matter and results in a compacted soil that is more difficult to plant into in the fall. This management decision will have to fit your specific needs.

Fire protection

Dry grass is a fire hazard. Cattails and blackberries are extremely flammable. The greatest threat comes from roadways where vehicles and equipment may ignite a fire on the side of the road. Consider developing fire breaks along roadways, fence lines with dried blackberries, and around buildings to reduce fire hazard.

PLANTING PREPARATION

Soils

Soil type will influence pasture survival. Gravely and sandy soils have less water holding capacity (usually class 2-3). Desirable plant species will have a tough time surviving drought in these soils. Class 1 soils could have higher plant survival in a drought situation. Information pertaining to your soils can be found in a USDA Soil Survey (hard copy) or you can use an online soil survey <https://casoilresource.lawr.ucdavis.edu/gmap/>. It's important to note that full pasture survival is unlikely regardless of soil type. The main difference is that less seed may be required for class 1 soils.

Pasture plant composition is also important. Most pasture grasses and clovers are shallow rooted. Orchardgrass, clover (white, red, strawberry), and trefoil plants will likely die in the absence of irrigation water. Adequate clover and trefoil seed is likely in abundance in the soil, negating the need for reseeding. Dallisgrass and tall fescue are generally deeper rooted and more drought tolerant. In high quality soils some of these grasses may survive.

Weed control

Once the pasture plants die the pasture loses its competitive advantage against weeds. Weeds such as blackberries and starthistle may increase and should be controlled now, before you reseed. These weeds should be controlled while they are still green and can take up herbicide. For blackberries spray 2/oz per gallon of water of a triclopyr based product (Garlon, Remedy, Triclopyr). Make certain the entire plant is sprayed as any missed part will not

die. For other weeds such as starthistle or tall mustard type plants a glyphosate (Roundup, etc.) product should be used at 3 oz/gallon of water. Adding a surfactant is an easy step to skip, but including a surfactant helps to ensure herbicide sticks to the plant to improve uptake of the herbicide.

Smutgrass – There is one silver lining to the loss of water. Drying the pasture up should kill the established smutgrass plants that are present. But, the seed bank from previous years is still viable and will bring seedling smutgrass plants back in the future. In order to prevent smutgrass reestablishment, it is crucial to establish desired grasses that will shade the soil surface. Planting should occur in the fall so that grasses are up and growing by spring when smutgrass plants will germinate.

PLANTING

Many pasture plants not irrigated for the season will be dead. To have a stand worthy of irrigating in the future, a fall planting is necessary. Early fall plantings will be more established in the spring than later plantings, but even those will need to be managed to ensure their success. If the seeding fails, only weeds will be irrigated in the future. Planting a perennial crop is a gamble because it does rely on winter moisture, and there is no guarantee that irrigation water will return next year. However, following the steps below will reduce the risk of failure as much as possible.

What to plant

A mixture of $\frac{3}{4}$ tall fescue and $\frac{1}{4}$ orchardgrass is ideal for pastures in this area (remember that orchard grass seed has 540k seeds/lb., Tall Fescue has 227k seeds/lb.). If seeding broadcast, the mix should be planted at 20 lbs./acre. If the seed is drilled the planting rate can be dropped to 15 lbs./acre. The variety of orchardgrass chosen is not important, but tall fescue breeding has come a long way in the last 20 years. Avoid older varieties such as Fawn and Kentucky 31 tall fescue. Rather chose a newer variety such as Evergraze, Cajun II, Martins II, BarOptima, STF-43, or Bariance. These are examples (there are more) that will produce better forage than older varieties.

Avoid planting annual ryegrass with mixtures of tall fescue and orchardgrass. Annual ryegrass is very competitive and could cause an establishment failure with the seeded perennial grasses. If clover was previously in the pasture, there is plenty of residual seed and replanting is not necessary. If no clover was present prior to losing irrigation water 1-2 lbs./acre of white clover (Ladino), strawberry clover, or trefoil can be added either alone or in combination. These low seeding rates will provide an adequate stand but should avoid excessive clover that can lead to bloat.

When to plant

Planting is best done as early in the fall as possible. Ideally planting would occur in September. If rains are required prior to working the ground because it is too hard, planting as soon as possible after the first rains is best. Seeding after December 1st can result in delayed germination until March, which will slow establishment before summer. Although growth above ground will be slow through winter, roots below the soil surface will be developing.

How to plant

Determining how to plant is a major consideration. There are basically three choices, each with distinct benefits and liabilities

1. Conventional farming - Ground is disked to prepare a seedbed, seed is broadcast, and then covered. Discing opens the sod so that broadcast seeds can land on the soil surface and makes root penetration easier once germination occurs. After seed is broadcast it should be harrowed, cultipacked, or both. This will provide the seed contact with the soil for germination and prevent birds from consuming the seed on the soil surface. Skipping harrowing or cultipacking after seeding will result in failure. If the ground is soft, cultipacking rather

than harrowing to cover the seed is better because it avoids seed being planted too deep. The disadvantage of discing is the loss of surviving grasses, equipment requirements, and necessity to repair borders.

2. A less intensive option is to harrow the field, broadcast seed, and harrow again to cover the seed. Skipping harrowing before or after seeding will result in poor stand establishment. Prior to working the ground, the pasture should be grazed to a level that the harrow teeth contact with the ground rather than bouncing above a thatch layer. The advantage of this method is that the equipment investments are low and deep-rooted grasses that survived the drought aren't destroyed. The disadvantage is that harrowing doesn't make a perfect seedbed which results in slower establishment and potential loss of some seed.
3. No-till drill seeding provides optimal seed placement and seed to soil contact. Besides removing thatch, drilling requires little ground preparation. Another advantage is that deep rooted grasses that survived the drought aren't destroyed. The biggest downside to drilling is the cost to have a custom farmer drill the pasture. You also have to have a tractor large enough to pull a rented drill. Drilling also requires some set up time to check that tubes are not clogged to ensure seed flow as well as drill calibration.

Grazing the new stand

Reseeding a pasture is a costly and time-consuming endeavor. All of the previous efforts can be negated if the pasture is grazed too early or too hard prior to establishing. The pasture should not be grazed during the first winter. Doing so will cause germinating grasses to be pulled out of the ground. Pull plants by hand prior to grazing to make sure they have enough root development prior to grazing. If you can pull them out of the ground, so can cattle. Even late spring and summer forage production will be lighter than before. Stocking rates should be considered at least half that of previous rates. Heavy grazing will prevent plants from becoming established or potentially kill the establishing grasses. The first fall after seeding is also important. Cool season grasses tiller (expand laterally) in the fall. If grazing is deferred at this time the plants will be able to fully establish and be ready for full stocking the following season. The pasture should be established the following season, and regular stocking rates can resume.

Planting a pasture can be a lifetime investment. Skipping any crucial step can lead to complete failure. If done correctly, this could be an opportunity to establish high quality forage for many years.

