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Grazing Stockpiled Tall Fescue

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Getting the most out of stockpiled tall fescue requires managed grazing. Without proper management, much of the benefit of stockpiled fescue to reduce winter feed cost is lost. The best grazing management practices include forage budgeting and forage allocation. The first step in managing the stockpiled growth is to know how much forage you have. This is the product of acres of stockpiled forage times the forage available for grazing per acre.

How many acres of good tall fescue is available? If you have a conservation plan, identify the fields with stockpiled fescue and look up their area. If a measured map is not available, walk each field. An acre is a square 209 feet on a side (43,560 square feet) and a tenth of an acre is square 66 feet on a side. Pace off the field (measure your pace) to estimate the field's size. Do this for each stockpiled field/pasture and write down the acreage. Exclude areas with little usable forage, such as woods, rock breaks, and areas of brush or weeds.

How much feed is available per acre? You can estimate available forage by measuring forage height with a ruler or standard plate meter, and use known calibration relations between height and forage mass. This should be done in late October or early November. Even though tall fescue remains green into winter, its growth rate is near zero by November 1 due to short day length, low light intensity (sun low in the sky) and cold temperatures. By measuring forage height in late October or early November, near maximum height is being measured. It is important that stockpiled fescue height be measured before snow fall. The calibration values for height to forage mass apply to free-standing forage that has not been pressed down by snow.

Ruler height is the height of the tallest plants within about 4 inches of the ruler or pasture stick. To measure ruler height, place the tip of the pasture stick on the ground. Hold the pasture stick vertical. Open the palm of the hand, holding it parallel to the ground next to the ruler. Lower the palm down toward the top of the canopy until it first touches a plant. This measurement on the ruler is ruler height. After doing this a number of times, you will be able to eyeball the ruler height without leaning down to use your palm to feel the grass. Another option is to use the standardized plastic plate meter.

Take multiple samples by walking the field in a zig-zag ("W") manner and measure the ruler height at 15 to 20 spots to find the average forage height with a confidence interval of about 1 inch. Look up this average height in Table 1 to estimate the pre-grazing forage mass. For example, if the average ruler height is 12 inches, the pre-grazing forage mass of an average density pasture is 3,567 pounds DM/acre.

Next, estimate how much forage is planned to be left at the end of grazing. This is the post-grazing forage mass. When rapid spring growth is desired, leave some functional live leaf area to help power spring growth (3- to 4-inch residual height). When a winter frost seeding is planned, graze the field closer to remove more leaf area to open up the soil to encourage ice crystals that will incorporate clover seeds into the soil (2- to 3-inch residual height). For example, the management plan will leave a 3-inch ruler height at the end of grazing or 1,184 pounds DM/acre in an average density pasture.

The amount of forage available for grazing is the pre-grazing forage mass minus the post-grazing forage mass. For this example, that is 3,567 – 1,184 for 2,383 pounds DM/acre available for grazing. Do this for each pasture or stockpiled hayfield on your list and write it down.

The forage mass versus forage height calibrations in Table 1 were conducted across pre- and post-grazed pastures and account for common treading losses that occur under short-duration grazing (two to three days per paddock or strip) in dry weather. If not using short-duration grazing, grazing days per acre may be reduced by as much as 50% based on research in New York and Delaware. Take this into consideration when estimating how many animal days of grazing can be achieved from the stockpiled forage available.

How much forage will an animal eat a day? On average when forage is not deficient in protein, excessive in fiber and is readily available (greater than 1,200 pounds DM/acre), cattle and sheep will eat about 2.5% of their body weight in DM/day. This will range from 2.0 to 3.0% depending on the animals and weather. You can use this to estimate animal intake. If the average animal weighs 1,250 pounds, then you would expect them to eat 31 pounds DM/day (1,250 x 0.025 = 31.25). If the average animal weighs 1,000 pounds, you would expect them to eat 25 pounds DM/day.

Intake by a herd of animals is the product of average dry matter intake per animal times the number of animals in the herd. If you have a herd of 25 cows averaging 1,250 pounds per head, the expected DM intake would be 775 pounds (25 head x 31 pounds DM/head/day = 775 pounds DM/herd/day).

How much area does a herd need to provide its feed requirement for a day? This is estimated by taking forage DM/acre available for grazing and dividing it by the herd feed requirement per day. In the example, this is (2,383 pounds DM/acre) / (775 pounds DM/herd/day) = 3.07 herd days/acre or 0.325 acres/day (1/3.07 days/acre = 0.325 acres/day). Now, this estimate will be close when the herd is strip grazed across the field on a daily basis. Remember that one-tenth of an acre is 66 feet by 66 feet, so an area of 0.33 acres (3.3 tenths an acre) is an area 66 feet deep by 218 feet long (66 x 3.3 = 217.8 ~ 218). If the herd is continuously grazed over a large area (more than a week in a pasture), utilization efficiency will be reduced, and it may reduce the days of grazing achieved by half.

To get the most out of an investment in stockpiled tall fescue, grazing of the stand needs to be properly managed. The first management step is being able to measure the pasture forage supply and balance it with animal forage/feed demand. The next step is to allocate what the herd will eat within one to three days to minimize forage loss caused by treading when animals walk over larger areas than needed for their feed demand.

Table 1. Pasture ruler height or pasture plate meter compressed height provide an estimate of forage dry matter present per acre.

Pasture Ruler Height	Pasture Plate Meter Height	Average Mixed Fescue	Dense Thick Fescue
(Inches)	(Inches)	Forage Dry Matter (pounds/acre)	
2	1.0	847	1,118
3	1.7	1,184	1,516
4	2.3	1,498	1,869
5	3.0	1,794	2,188
6	3.6	2,076	2,480
7	4.2	2,346	2,751
8	4.9	2,606	3,002
9	5.5	2,857	3,237
10	6.2	3,101	3,457
11	6.8	3,337	3,663
12	7.4	3,567	3,858
13	8.1	3,791	4,041
14	8.7	4,009	4,215
15	9.4	4,223	4,379
16	10.0	4,432	4,534
17	10.6	4,636	4,680
18	11.3	4,837	4,819
19	11.9	5,033	4,951
20	12.6	5,226	5,075

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