Drill Calibration

Drills should be calculated on the basis of bulk seed. A good place to start is to get an idea from the farmer about what species, rates, and settings that he has previously used. Another option is to refer to the manufactures seed chart for the setting if it is available.

There are many different methods for drill calibration. The two most commonly used are the seed weight - distance methods.

Method 1. Bag two or three drill tubes, run the drill at normal drilling speed a known distance (e. g. 100 feet), weigh the seed collected (if seed is collected from more than one tube, average this to get the amount of seed per tube) and compute the per acre seeding rate using the formula:

$$\text{lb. per acre bulk seed} = \frac{43560 \times \text{lb. seed collected (ave weight of seed / tube X no. of tubes).}}{\text{drill width in feet x strip length in feet}}$$

Method 2. The same procedure as 1, except the drill drive wheel is raised enough to allow free movement. The circumference of the drive wheel is determined and turned through enough revolutions to equate the desired distance (e.g. 100 feet). The same formula is used except for strip length (ft) which is calculated as 1.1 (no. of revolutions x wheel circumference (ft). The factor 1.1 compensates for slippage that occurs in the field.

Drills may be equipped with one, two or three seed boxes. Typically, most grass drills have two boxes. The legume box is designed for small, slick seed, such as that of legumes, native forbs, switchgrass, or lovegrass. The larger box is designed for light, fluffy grass seed such as that of sideoats grama, big bluestem, little bluestem or blue grama.

For certain CRP seedings, the amount of forb/legume material to be seeded is very small. If forbs/legumes are to seeded alone, as in an enhancement seeding, there may not be enough bulk material to allow for proper metering. A seeding rate of at least 2 bulk pounds/acre is needed to allow proper metering with most grass drills. To allow seeding rates of less than 2 bulk pounds per acre, one option would be to plug every other flute opening. This will reduce the rate by one half and allow seeding rates as low as 1 pound bulk per acre. Another option would be to mix the small amount of seed with a carrier. Some commonly used carriers include rice hulls, cracked corn, and soybean meal. Mix approximately 8-10 pounds of these type fillers per acre with the seed mix. Another filler that has been used with good success is vermiculite. The vermiculite is of a weight that will keep the small forb/legume seed in suspension. Some other types of carriers such as cracked corn will allow the seed to settle to the bottom of the box. The recommended mixing rate for vermiculite is three parts vermiculite to 1 part seed. The drill would then be calibrated on the weight of the bulk seed plus vermiculite.

If forbs/legumes are to be seeded along with the grass component, the small slick seed should be placed in the legume box and necessary adjustments made as outlined above. If only one box is used for both grass and forb, the forb component should be mixed with the grass component at intervals as the area is being seeded. This is to allow the forb/legume component to be spread out across the seeded field instead of all in one area.

Finally, check periodically the amount of seed that is actually being used by noting acres drilled, the amount of seed added to the drill, and the level of seed in the drill box. If more or less acres are being drilled than desired, adjustments to the drill setting may be necessary to compensate for field conditions.