CENTRIFUGAL SPREADER CALIBRATION

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First off, let me go over the "Texas One-Set Method" of centrifugal spreader calculation. The procedure is as follows:

(1) Calculate the number of bags that you need to treat the entire area.
(2) Set spreader opening very small.
(3) Have workers push or pull spreaders in every direction back and forth and around the area.
(4) When all bags are empty, you have applied the desired amount of material.

In this way, your crew can work unsupervised while you are running errands or drinking coffee. Seriously speaking, this method does minimize the possibility of over-application, and it is an acceptable method for the less time-conscious, do-it-yourself homeowner.

The amount of material that needs to be applied to a given area is a mathematical calculation and not an equipment calibration procedure. In the classes that I teach, we do not rely on any short-cut formulas. I also stress that you should get the same answer using two different mathematical approaches. By doing so, you can be more confident that your initial application steps are correct. One of my favorite Davy Crockett sayings is, "Make sure you're right, then go ahead."

Because not all spreaders are created equal, the remainder of my talk today will focus on how to determine your effective swath width. By their nature, centrifugal spreaders generally have application patterns that have feathered edges. This is an advantageous characteristic that allows a certain error tolerance before skips and overlaps become apparent. Therefore, it is important to determine each application equipment's effective swath width, which I define as follows:

> *Effective swath width* (ESW) is the distance from the center directional axis of an applicator going in one direction to the center directional axis of the same applicator making a subsequent, adjacent pass that results in a uniform application to a given area.

Lay a line of catch basins, such as pie or cake pans, along a line that is perpendicular to your intended line of travel. The outer pan on each end should be located at the maximum throw distance for your spreader. The pans should be placed edge to edge, or at least evenly spaced if you do not have enough of them. Depending on your wheel spacing, it may be necessary to remove one or two pans in the center so that your spreader can pass unimpeded through the line. You may make as many passes as you like at normal operating speed. Then the contents of each pan can be measured on a weight basis using a scale or on a volume basis using vials or tubes. Equal amounts should have been deposited in the middlemost pans. At some point amounts will begin to decrease. On each side the critical points to note are where this amount has decreased by half. The distance between these two points is that particular spreader's ESW under that day's conditions. Figure 2 shows how this technique determined a 13-ft ESW.

A combination of factors can affect application patterns greatly, and can therefore influence ESW. These factors are as follows:

1) application equipment design
2) application equipment adjustment, which includes operating speed
3) weight, bulk density, size, and shape of applied material
4) environmental conditions including wind speed and humidity

Each of these topics warrants further explanation, and I look forward to sharing this information with each of you sometime in the future.

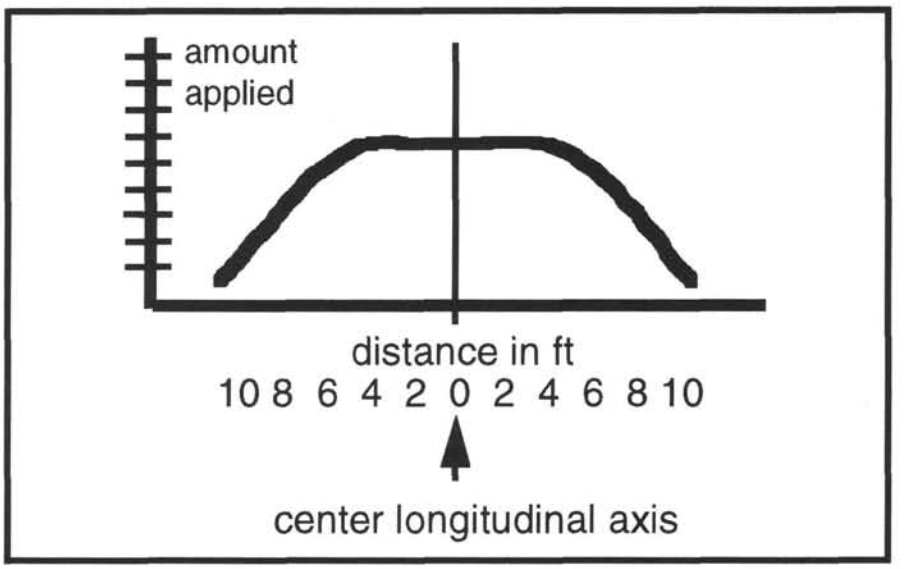

Figure 1. Relative amounts of material applied by a centrifugal spreader.

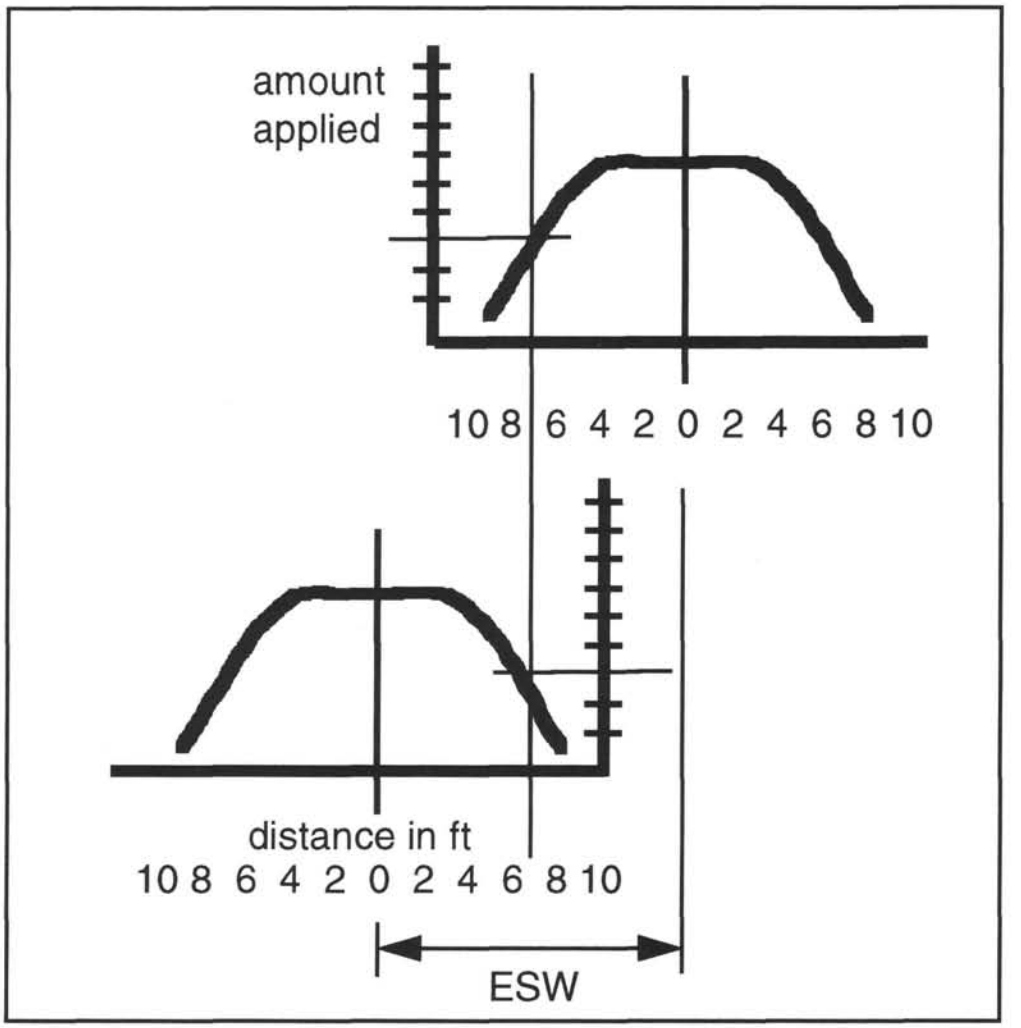

Figure 2. A 13 ft effective swath width (ESW) as shown by parallel, adjacent passes of a centrifugal spreader.