

# Straw and Chaff Spreaders



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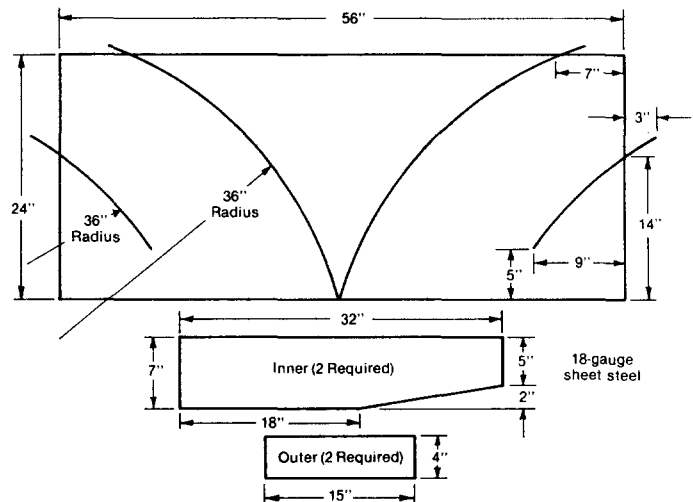
Reduced tillage can save topsoil, moisture, labor and energy, but employing reduced tillage methods involves more than just buying and using a no-till drill or planter. A complete management system must be used to make reduced tillage work.

A reduced tillage management system should start with straw and chaff spreading at harvest, because heavy concentrations of straw and chaff can cause problems after harvest. Unless straw and chaff is spread uniformly across the field, it will plug seeding equipment, which makes no-till and reduced tillage seeding next to impossible.

High yields coupled with the use of the big headers and large capacity combines mean that large quantities of residue will be deposited behind the machine. Many straw choppers and spreaders commercially available on combines are unable to achieve spreading widths equal to the large header widths. Cross harrowing fields immediately after harvest is one method of getting straw spread uniformly. However, this requires an additional field operation and it does little to spread the chaff. Straw and chaff spreaders on the harvester are essential if the following crop is winter wheat. Harrowing will break down stubble that is necessary for the retention of snow. Without good snow cover winter wheat is highly susceptible to winter kill.

Researchers have developed a spreader modification which can almost double the spreading width of many combine straw choppers by changing the size and shape of the straw deflectors. The most effective modification was obtained by replacing the original deflectors with either two large deflectors or two large and two small deflectors. Deflectors can be made with 18-gauge sheet steel and should be attached to the tailplate so that bolt heads don't interfere with the straw as it slides along the deflector. The tailplate is 24 inches deep, using 18-gauge sheet steel plate upon which the straw deflectors are mounted.

Figure 1 shows that dimensions and suggested installation of the deflector vanes on the tailplate. The stream of chopped straw should not be abrupt but should leave the deflector at a 45 degree angle to the direction of travel. The front "vee" of the large deflectors should be mounted behind the lower edge of the chopper exit. Any straw striking the front of the "vee" must be able to fall free or the chopper may plug. Direct the stream upward about 10 degrees by adjusting the tailplate supports. Never exceed an upward adjustment of 15 degrees as any side wind will adversely affect straw spread width.



**Figure 1. Deflector Dimensions and Arrangement on 56" Wide Strawchopper Tailplate.**

Chaff can be a more troublesome problem than straw. Chaff mats down with rain and can't be spread with a harrow. Disc drills have a hard time penetrating heavy chaff mats, and seed placed into the chaff mat can have poor germination and be easily winter killed. Hoe drills lift this chaff mat and place the seed beneath it, but seedling emergence can then be a problem with cooler soil temperatures under the mulch. The concentration of chaff ties up nitrogen and provides an excellent place for weeds to germinate and grow. Chaff mats also cause problems with fall applied herbicides by not allowing them to reach the soil.

Several companies offer add-on, mechanically driven chaff spreaders. These usually consist of either horizontally or vertically rotating fans which distribute the chaff (Figure 2 and 3). Canadian testing of commercially available straw and chaff spreaders shows that most do a good job of spreading. Figures 4 and 5 show spreading patterns of typical straw and chaff spreaders. Chaff is difficult to spread evenly because of its light weight, but spreading chaff the width of the combine header will reduce the problem considerably. Always take safety into consideration when choosing a driven straw or chaff spreader. They are an additional moving part and should be shielded as much

44.3  
 179  
 18  
 10.902

as possible to avoid injury. Always be aware of moving parts. Ease of access to the combine cleaning sieves should also be considered when looking at the different models. Some spreaders restrict sieve access, making changes of combine settings difficult. They can be driven with hydraulic motors or with belts. Some of the hydraulic models swing to the side for easy access.

Straw and chaff spreaders can make both fall and spring field work a lot easier. A good straw and chaff spreader lets the grower own a cheaper, lighter weight drill. Spreaders can reduce the trips made across the field and make those that are made considerably easier.

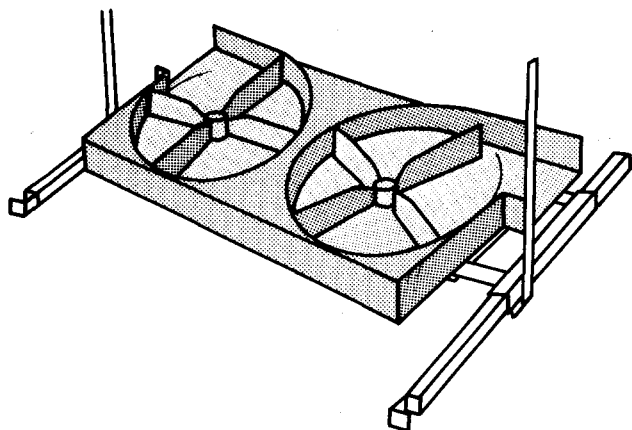


Figure 2. Commercially Available Chaff Spreader with Horizontally Rotating Fans.

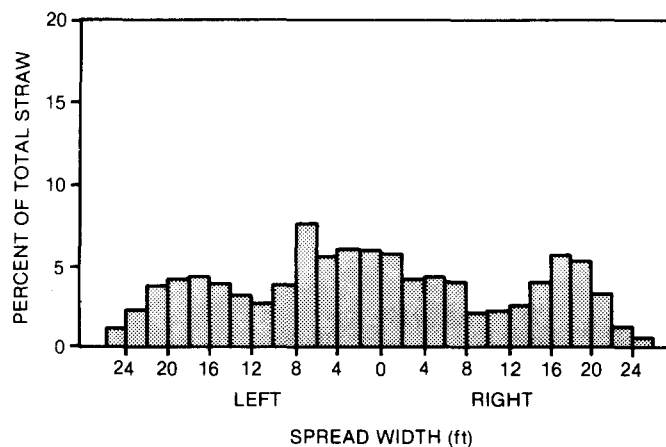


Figure 4. Canadian Research Shows 40 Foot or More Spread Widths with Modified Straw Spreaders.

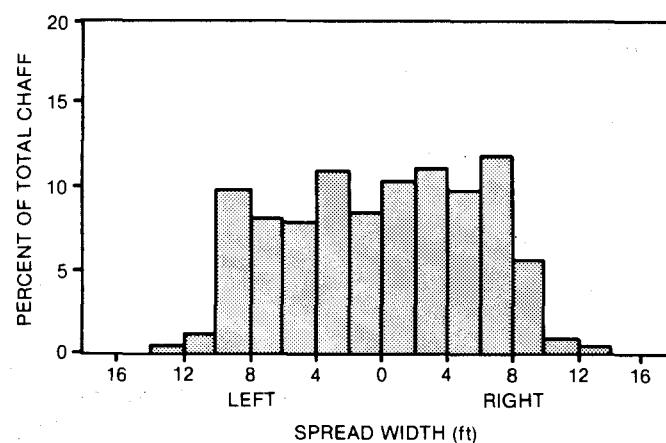


Figure 5. Canadian Research Shows 20 Foot Widths for Commercially Available Chaff Spreaders.

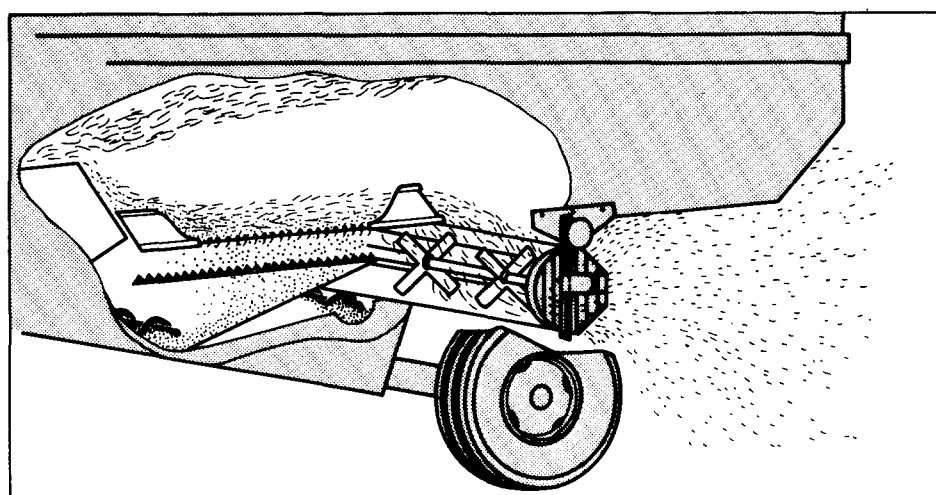


Figure 3. Commercially Available Chaff Spreader with Vertical Fan Design.