Pickup Grass Seed Stripper

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Abstract

Several methods of grass seed harvest exist. One method that performs well for farm and ranch circumstances is a homemade pickup grass seed stripper. This stripper affords means of economical seed harvest for many grass seeds.

Grass seeds from some tall grasses can be readily harvested with specialized commercial grass seed strippers. Numerous properly operated combines in good condition can also be used to harvest grass seeds under certain conditions. Many approaches to grass seed harvest are possible, but economic considerations and unavailability of specialized machines or combines in many areas often prevent their use.

Tall grass seeds can be harvested with a homemade pickup grass seed stripper (Fig. 1). We have used this machine extensively to harvest "Old World" bluestem seed. Early models of this particular type stripper were developed about 1961. It was originally conceived to harvest bluestem seed in southern Oklahoma. Since the stripper's original evolution, it has undergone many alterations and changes in method of construction but the basic design and operation have remained much the same. One of the better pick grass seed strippers is shown in Figure 3. This unit allows better airflow through the unit, thus allowing better seed deposition in the hopper and it has a deeper, higher capacity hopper than cloth covered units. Figures 1 to 5 show the basic construction of the pickup grass seed stripper. Numerous methods and materials have been and can be used. Every farm and ranch engineer has his own ideas; however, some characteristics of the stripper must be maintained.

1. It must be somewhat flexible, but the frame must be constructed of strong enough steel to prevent it from easily bending out of shape.
2. It should be hinged at the bumper attachment for height and adjustment and flexibility.
3. It should be at least as wide as the truck operating it and a 10 to 12-foot wide model is excellent in most cases.

Fig. 1. A pickup grass seed stripper frame ready to cover.

Fig. 2. A pickup grass seed stripper completed and ready to use. This unit has been used many times since its construction in 1966.

4. It must contain at least two flailing bars. If the grass seed heads are greatly variable in height, more flailing bars are needed. Grass seed is considered ready to strip when about 25% or more of it will readily strip off the heads when the heads are pulled through a firmly closed hand. Seed is then harvested with the pickup grass seed stripper by driving through the seed harvest area at appropriate speeds with the flailing bars down into the seedhead area. Speed is the force that flails the easily stripped seed into the stripper hopper. Actual speeds needed are variable from 10 to 20 miles per hour depending on seed harvest conditions. A trial and error approach must be used to determine best speed for gathering easily stripped seed and leaving greener immature seed and forming seedheads for later stripping.

A field properly stripped the first time can be restripped numerous times as seed continues to form and ripen. We have harvested fields of "Old World" bluestem up to 3 times and I believe even

Original development of these machines is credited to Archie Welch, District Conservationist, and Fred Koons, District Manager, while they were employed by the Arbuckle Conservation District of the Soil Conservation Service at Ardmore, Okla.
more strippings are possible under most proper harvest conditions and close stripper operation. Repeated strippings should be made using the same travel tracks. It is easy to strip 5 or more acres per hour even when considering the seed bagging and radiator servicing time. A 10-foot wide unit operated at 15 mph will harvest 18 acres per hour of travel time. Servicing time reduces the actual harvested acreage per hour.

The hopper must be emptied by hand when it reaches about two-thirds full. An excellent approach is to bag the seed in large burlap or other porous bags. The seed will be too wet for storage without drying. It must be spread in a six- to 12-inch layer in an area protected from moisture and stirred daily or twice daily until it is dry. A fan, or other airflow blowing over the seed, is a great aid in drying the seed.

Major problems with this method are hidden obstacles in the field such as, bull holes, stumps, etc., and pickup radiator clogging.

Evaluation of Air Threshing for Small Lots of Winterfat Fruits

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Abstract

Air threshing, using an air gun scarifier, is an improved method for threshing small lots of winterfat [Eurotia lanata (Pursh) Moq.; Ceratoides L. (Pursh) J.T. Howell] fruits for laboratory analysis. The technique is faster than hand threshing and causes insignificant damage to the seed in contrast to hammer mill threshing which damages about 25% of the seed.

Winterfat [Eurotia lanata (Pursh) Moq.; Ceratoides L. (Pursh) J.T. Howell] seed has been removed from its enclosing bracts by threshing in a hammer mill at 500 rpm using a 6.4 mm screen (Wendall Oaks, USDA-Soil Conservation Service, Los Lunas Plant Materials Center, personal communication, 1979). Stevens et al. (1977) recommended using the hammer mill at 1,000 – 1,200 rpm with a 7.94-mm screen to separate the fruits from the seed stalks, but their methods are not intended to thresh the seed from the bracts. Booth (1982) and Booth and Schuman (1983) have shown that the bracts which enclose the utricle of winterfat are important adjuncts to seedling establishment and seedling vigor and should not be removed before planting. However, various laboratory procedures require that these bracts be removed, Booth (1984) found that hammer mill threshing damaged or removed that radicle apex and its contributing meristem on 25% of the seed. The meristematic area, where growth occurs, is also an area in which nutrients and growth regulators are concentrated. For these reasons inaccurate data could result when hammer mill threshed seed is used in germination tests or in an analysis of plant growth factors in the seed. Threshing seed by hand, even with the help of a rubbing board, is a time-consuming and tedious process. Air threshing, using an air gun seed scarifier, was tested as an alternative to hand

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