Shattered Grain Loss Attributable to the Combine Harvester Reel

Abstract:

Losses of grain in the field, which occur with the use of the header, combine and windrower, have caused much concern to farmers and research workers. Bracken (2) reported that the combine method of harvesting was more efficient than the header and thresher method. Hardy (5) stated that, since uniform maturity and low kernel moisture content were necessary for the straight combining of grain, a loss of grain could result from adverse weather conditions during the period between the binding and the straight combining stages. Many other research workers (4, 6, 7, 10, 11) suggested that the windrower should be used as a harvesting implement to reduce the losses caused by weather, green weeds or insects. Mayer (8) concluded that high threshing losses resulted because of the limited capacity of the combine cylinder. Nyborg (9) showed that the separating action of the straw walkers was the limiting factor in combine capacity, and that overloading this mechanism could contribute to a high harvest loss. It has been reported (1) that the pick-up loss may be minimized by operating the pick-up as close to the ground as possible and by limiting the forward speed of the combine to four miles per hour.