

Economic Analysis of Peanut Digger Ground Speed and Conveyor Speed on Digging Yield Losses

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Proper peanut digger setup and operation are important factors in maximizing profit for peanut production. A 2016 study conducted by Clemson University demonstrated significant peanut digging loss effects in virginia type peanut as functions of ground speed and conveyor speed. A second study was performed in 2017 incorporating peanut yield monitor data and using similar tests on both runner and virginia type peanuts. The tests were conducted with Amadas and KMC brand two-row peanut diggers. Ground speed treatments were set at 1.5 mph, 2.5 mph, 3.5 mph, and 4.5 mph with the conveyor speed set at 100% of ground speed for all ground speed tests. Conveyor speed treatments were set at 70%, 85%, 100%, 115%, and 130% of ground speed, which was held at 2.5 mph for all conveyor speed tests. Digging losses from above ground and below ground across types ranged from \$83 to \$270 per acre for Amadas digger and \$42 to \$163 per acre for KMC digger. The per acre digging loss for each mph above the optimal ground speed ranged between \$19 and \$25 per acre and increased at higher speeds. For both diggers in virginia type peanuts, gross revenue was highest at conveyor speeds equal to 85% of ground speed. In runner type peanuts maximum gross revenue was observed at conveyor speeds equal to 70% and 115% of the ground speed for the Amadas and KMC diggers, respectively.