Effect of Wormshaft Speed, Moisture Content and Variety on Oil Recovery from Expelled Beniseed

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Abstract

The effect of machine wormshaft speed and seed moisture content on oil recovery from two beniseed accessions (Yandev 55 and E8) was studied in an oil expeller. The levels of moisture content of 4.1 to 10.3% wet basis and wormshaft speed of 30 to 75 rpm were used. The oil recoveries from the two accessions increased from 37.56 to 70.62 and 33.70 to 64.85 respectively as the wormshaft speed increased from 30 to 45rpm at 4.1% moisture content. A further increase to 75 rpm decreased the respective oil recoveries to 40.23 and 38.79%. This was a general trend for all the studied moisture contents. The maximum filtered oil recoveries of 79.63 and 74.28% of the expressable oil were obtained for Yandev-55 and E8 respectively from a – one pass crushing. These values were obtained at 45 rpm and 5.3% m.c. The statistical analysis shows that wormshaft speed and its interaction with moisture content have significant effect on the oil recovery from the seed.

Keywords: Beniseed, expeller, oil recovery, wormshaft speed, moisture content