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“SEED SIZE FRACTION DISTRIBUTION ANALYSIS OF CORN HYBRIDS”

ABSTRACT

Keywords: Seed quality, Seed size, Seed recovery, Bulk density

Maize ranks third in total world production after wheat and rice and it is principal staple food in many countries. Seed is the vital input for maize production, hence for a successful crop production, the use of good quality seed is very essential which increases the yield by 15-20 per cent. Seed size indicates the quality of reserve food material available for the emerging seedling. The present study entitled "Seed size fraction distribution analysis of corn hybrids" was undertaken in Syngenta Pvt. Ltd., Telangana. The study aimed at to carry out wet ear sorting fraction analysis of field corn, identification of best fit location for the hybrid based on seed size and to analyse processing recovery relative to seed size and bulk density. For analyzing the seed size, simple tabular method, sieve method were used and seed recovery per cent method was used to find out the recovery per cent of different corn hybrids of Syngenta (FC-1534, FC-1594, FC-1518, FC-1517, FC-1515) procured from Venkatapuram, Eluru, Cuddapah, Rajahmundry, Nandyal and Badrachalam locations. From the study, it was concluded that, the overall sorting discards per cent was only 0.45 per cent of the corn hybrids (FC-1514, FC-1517, FC-1519, FC-1534, FC-1552, FC-1554, FC-1559, FC-1574, FC-1594) before drying. The per cent of other cobs (immature cobs, small seeded cobs and unfilled cobs) were observed the highest, followed by fungus affected cobs, half filled and male cobs. The least discarded corn cobs per cent was observed in the hybrids FC-1514, FC-1517, FC-1534 and FC-1574. Hence if the sorting is eliminated in these hybrids than the amount can be saved by INR 31,68,059. The corn seeds retained on the 4.9mm, 5.1mm, 5.5mm, 5.9mm, 6.3mm screen sizes were in negligible amounts. The largest quantity corn
seeds retained in the 8.1mm and 9.1mm screen size. The highest per cent recovery of corn hybrids FC-1515 and FC-1517 was found in Rajahmundry, FC-1518 and FC-1534 was observed in Nandyal, FC-1594 was observed in Eluru region. The highest bulk density of hybrids is found in the corn seeds retained on the 8.1mm screen and 9.1mm screen. The corn seeds retained on the 4.9mm, 5.1mm, 5.5mm, 5.9mm, 6.3mm screen sizes were negligible amounts. The highest bulk density and quantity of seeds retained were observed on the 8.1mm and 9.1mm screens. The highest per cent recovery was obtained in the seeds retained on 7.3-8.1mm screens.