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Seed tuber size on growth and yield of selected potato (*Solanum tuberosum* L.*)* varieties in Kilinochchi district of dry zone (Dl_3) of Sri Lanka

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Potato (*Solanum tuberosum* L.) is an important food and cash crop mainly grown in up country, wet and intermediate zones of Sri Lanka. Yield of potato is affected by number of factors like variety, weather, soil and size and quality of the seed tubers. Among which unspecfied seed tuber size, inadequate seed supply of suitable varieties at correct time, high cost of seed tubers and climatic change are main constraints in potato cultivation. The experiment was conducted to study the effect of tuber size on growth and yield of selected varieties of potato at Regional Agriculture Research and Development Centre, Iranamadu, Kilinochchi (DL_3) under experimental field during 2019. Treatment combinations consisted with 6 varieties (Laperla - Netherland, DHR1- America, Prada - France, Betty - France, Sassy – France and Palukka were imported by Heyley's of Sri Lanka) with three seed tuber sizes (according to their weight classes of each variety divided as small, medium and large). Experiment was conducted as 2 factor factorial and laid in Randomized Complete Block Design with three replicates. The results showed that phenoloy {number of days to germination, flower, and maturity (90-105 days) % of death (by incidences of major diseases, early blight and wilt)}, growth (in terms of stem number, number of leaves in main stem and height of the main stem) and yield parameters (marketable yield, unmarketable yield, number of tubers per plant and total tuber yield) were significantly influenced by the size of seed tuber and variety Prada and DHR1 produced the highest total tuber yield and marketable yields than the other varieties. Large and medium size seed tubers produced the higher marketable tuber yields than the small size seed tubers. The results of this study showed Prada and DHR1 varieties planted with medium (60 – 100g - Prada, 60- 90g- DHR1) to large size (100- 140g Prada, 90-120g - DHR1) seed tubers performed better than the other 4 varieties. Therefore, the potato varieties Prada and DHR1 can be suggested as suitable for growing in Kilinochchi district of Dry Zone (DL_3) of Sri Lanka.

Keywords: phenology, potato, tuber size, varieties and yield

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