SCREENING OF MAIZE VARIETIES FOR WATERLOGGING TOLERANCE AT V9 GROWTH STAGE ON MODERATELY DRAINED SOILS

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Cultivation of maize in moderately drained soils during *yala* season in the dry zone is popular among Sri Lankan farmers. However, unexpected heavy rains due to climate change can trigger water logging conditions in these fields at any growth stage of the crop. As maize is less tolerant to water logging, the yield can be severely affected. Therefore, studying the impact of water logging durations on maize growth and yield related attributes is timely relevant. A field experiment was carried out at the Field Crops Research and Development Institute, *Mahailluppallama* during *Maha 2018*/2019 cropping season to assess yield response and physiological changes of maize accessions (locally available 30 lines) for water logging conditions at V9 vegetative period (28 days after planting). The experiment was laid out on a split plot design with two replicates. Simulated water logging condition (soil submergence at minimum saturation) was maintained at V9 stage of the crop for 5 days. Initial soil fertility, SPAD reading, leaf length and width, number of leaves per plant, plant height, days to 50% tasseling, days to 50% silking, total biomass and seed yield were recorded. Maize lines, CLYQ 220, CLYQ 203, CLYQ 215, CLRCYQ 49, CLRCYQ 59 and CML 194 were stunted, yellowed and low yielding. Anthesis - Silking Interval (ASI) of selected lines ranged from 1 to 9 days while, ASI of CLYQ 220 and CLYQ 203 extended beyond 10 days. For all maize lines, number of days to tasseling ranged from 55-60 days while silking ranged from 56-65 days. Relative greenness (SPAD values) was depleted after soil submergence in most of maize lines. Multiple cobs were observed in more than 50% maize lines. Elite lines for water logging tolerance are available in locally available maize genome which needs to be explored further.

Keywords: ASI, Maize, Multiple cobs, Soil submergence, Water logging duration