REPRODUCTIVE FITNESS AND PHENOLOGY RESPONSES OF SAU PERILLA-1 TO AGROMETEOROLOGICAL INDICES OBSERVED ON DIFFERENT TRANSPLANTING DATES

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Executive Summary

SAU Perilla-1 (Golden Perilla BD) is a latest oil crop variety enriched with Omega-3 fatty acid, which is introduced by Sher-e-Bangla Agricultural University in 2021. The seed contains ~40% edible oil and is recommended for growing in *Kharif-2* season when no oil crop is grown in Bangladesh. However, for *Robi* seasonal trail, the crop was sown on 21 November (D1), 28 November (D2), 05 December (D3), and 12 December (D4) with 40 cm × 40 cm (S1), 40 cm × 30 cm (S2), and 40 cm × 20cm (S3) planting configurations maintained in each of the dates. The research was aimed mainly on thermal effects on phenological parameters (germination, flowering and biological yields) as evaluated by the Growing Degree Days (GDD) and Heat Use Efficiency (HUE) over stover yield and grain yield of SAU Perilla-1. The results revealed that sowing dates had significant effect on the yield variations as evaluated by the studied parameters of the crop. However, D2 showed the uppermost level of seed weight per plant. The highest seed weight per plant was recorded due to the effect of S3 and that of the value touched at the bottom for S2. The maximum seed weight was recorded in D2S3 and that of the lowest was found in D4S3. The GDD values increased with increasing days to germination of seeds. Sowing date strongly influenced the GDD requirement for germination of SAU Perilla-1. When the crop was sown on D1, 75 days were needed accumulating 1670.4°F for flowering of the crop. The GDD requirement was highest (1802°F) in D4 sowing treatment, when 82 days were required to initiate flowering. The GDD requirement declined as sown on D2 and D3 dates. The results indicated that the variation in temperature prevailed under different dates of sowing. HUE was higher in producing stover plant when sown on 21st November (D1) with second highest grain production (4.10 mg/plant/°F/Day). Contrary to that the highest HUE for grain (8.13 mg/plant/°F/Day) was yielded in D2 sowing date although the stover production was reduced from that of D1 treatment found. When sowing is delayed, either of grain and stover synthesis were lowered down as found in D3 and D4 treatments.

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