Effect of Seaweed Extract (*Sargassum wightii*) on Seedling Growth Promotion in the Long Bean (*Vigna unguiculata*) Hawari verity

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Growth in the human population urges the need for increment in food production. This leads to indiscriminate use of synthetic and chemicals for their agricultural lands resulting are highly toxic to the environment and soil. Our study aims to develop a seaweed extract from commonly available seaweed *Sargassum wightii* to enhance the plant growth promotion in the Hawari verity Long bean (*Vigna unguiculata*). The seaweed extract was treated at six different levels of T_1 – 0%, T_2 – 5%, T_3 – 10%, T_4 – 15%, T_5 – 20%, and T_6 –25% for long bean Hawari verity. The extraction was used to check the seed germination percentage and shoot length, root length, the number of leaves was measured at 4th, 8th, 12th and 16th days after transplanting. The highest seed germination percentage of 94.44% was observed in T_4 whereas the lowest of 56.64% was observed in T_6. The highest shoot length of the seedling was observed in T_5 and lowest in T_1. Similarly, the highest root length (7.07±0.42 cm) was observed in T_5 and the lowest (6.00±0.51cm) in T_1 on the 16th day. The highest (6.46±0.51) and lowest (5.46±0.51) number of leaves were observed in T_5 and T_1. The results suggest that 20% *Sargassum wightii* extract enhances the germination and growth of Hawari verity seedling on *Vigna unguiculata. Sargassum wightii* extract can be used in organic agriculture.

Keywords: Long bean; Organic fertilizer; Seaweed extract; Seed germination; Seedling growth