

Effect of sowing time and fertilizer on dry matter, yield and yield attributes of bush bean (*Phaseolus vulgaris* L.) varieties.

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Summary

In Bangladesh, bush bean is a new crop. It is extensively cultivated in Europe and is used as vegetable (green pod). Its dried seeds are also used along with tomato sauce (baked bean). From the literature, it is evident that the climatic condition of the sub continent is also favourable for its successful production. Bangladesh Agricultural Research Institute has adopted two varieties. However, information regarding its production technologies are lacking under Bangladesh condition. So, the above titled Project was planned and executed to (i) identify the proper bush bean variety (ii) identify proper sowing time and (iii) identify proper fertilizer dose.

The experiment was conducted at Sher-e-Bangla Agricultural University Farm. Seeds of two varieties; Bari bushbean 1 (V_1) and Bari bushbean 2 (V_2) were sown at different sowing dates: Nov. 15 (S_1), Dec. 1 (S_2) and Dec. 15 (S_3). There were three levels of fertilizers: 0 kgN–0 kgP₂O₅–0 kg K₂O/ha (F_0), 20 kgN–30 kgP₂O₅–30 kgK₂O/ha(F_1) and 40 kgN–60 kgP₂O₅–60 kgK₂O/ha (F_2). The experiment was laid out in a completely randomized block design. Each treatment was replicated three times.

It was found that irrespective of sowing time and nitrogen, V_2 produced significantly higher dry matter (9.44 g/plant) than V_1 (7.81 g/plant). Irrespective of varieties and fertilizers, S_1 and S_2 produced significantly higher seed yield than S_3 (10.15, 9.58, and 6.15 g/plant respectively). Irrespective of sowing time and variety, F_2 gave maximum seed yield (9.37 g/plant) which was highly significant in comparison to that of the control (7.45 g/plant).

The interaction effects of two different factors were also found to be significant. Irrespective of fertilizer rates, V_2S_2 resulted in the highest seed yield (11.63 g/plant). Whereas, V_2S_3 resulted in lowest seed yield (5.85 g/plant). Irrespective of sowing time, V_2F_2 produced the highest seed yield (10.25 g/plant). On the other hand, V_1F_0 showed the lowest seed yield (6.72 g/plant).

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Three-factor interaction effect was also found to be highly significant. The highest seed yield (12.68 g/plant) was obtained by $V_2S_1F_2$ (Picture 3), whereas, the lowest one was shown by $V_2S_3F_0$ (5.22 g/plant).

The higher seed yields due to the imposition of treatments were attributed to the increased number of pods/plant, increased number of seeds/pod and increased 100 seed weight.