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Relationship between Eggplant Fruit Weight and Seed Yield

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Abstract

BARI Begun-4, BARI Begun-5, BARI Begun-7 and BARI Begun-9 varieties of brinjal were analysed during this investigation. Positive and significant correlation was found between fruit weight with seed yield and number of seed was found in case four brinjal varieties. On an average, 4.665 g of seed and 1157 seeds were found from a fruit of 219.4 g in BARI Begun-4. Whereas, 7.282 g seeds and 1159 seeds from a fruit of 315.8 g in BARI Begun-5, 3.701 g and 1017 seeds from a fruit of 145 g in BARI Begun-7 and 5.5334 g of seed and 1354 seeds were found from a fruit of 181.3 g in BARI Begun-9.

Keywords: Eggplant fruit; seed yield

Introduction

Eggplant (*Solanum melangela* L.) commonly known as Brinjal is one of the most important, inexpensive and popular vegetable crops grown in Bangladesh. It grows all over the country throughout the year. It is an important and popular vegetable crop in Bangladesh next to potato and tomato. Production of brinjal was 338 thousand metric tons in 2007-08 which was increased as 450 thousand during 2014-15, i.e. production increased about 33% within seven years (BBS, 2016). In 100 g of fresh matter there is 1–1.1 g of protein with 18 amino acids, 0.1–0.2 g of fat with linoleic acid as a dominant one, 5.7–6.3 g of total carbohydrates and cellulose (2.5–3.4 g) (Kowalski *et al.* 2003). In eggplant fruit, there can be found mineral salts of K, P, Ca and Mg (Michałojc and Buczkowska, 2008). Kowalski *et al.* (2003) also pointed to the fact that it contains microelements, such as Zn, Fe, Mn, Cr, Cu and Se, moreover, in those fruits there were also determined other precious components like omega 3 acid, omega 6 acid, beta carotene, vitamin E, vitamin K, pantothenic acid, folic acid, choline and phytosterols. It has a significant role in livelihood and farm income of the farmers. Bangladesh Agricultural Research Institute developed some brinjal varieties, which are

popular among the framers. Seed is the carrier of basic quality values and hereditary traits. Eggplant seed is obtained by collecting botanically mature fruit, which is then milled, cut or sliced and put on fermentation. Seed yield per fruit varied significantly among the varieties (Rahman *et al.*, 2015). An effort was made for the relationship of fruit weight with seed yield so that, the seed producer may predict how much seed would be produced from his field.

Materials and Method

BARI Begun-4, BARI Begun-5, BARI Begun-7 and BARI Begun-9 were with recommended management practices at Bangladesh Agricultural Research Farm, Gazipur. At the ripening stage, ten fruits were harvested randomly and weighted. Seeds were extracted from those fruits and dried maintaining upto 8-10% moisture. Number of seed per and seed weight per fruit was calculated. Relationship of fruit weight with seed weight and number of seed were made by plotting the fruit weigh at 'X' axis and seed weight and number of seed at 'Y' axis using computer MS-EXCEL program.

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Result and Discussion

There was a positive and significant correlation between the fruit weight and seed weight irrespective of the varieties (Fig. 1). On an average, 4.665 g of seed was produced from a fruit of 219.4 g in BARI Begun-4. However, 7.282 g of seed from a fruit of 315.8 g in BARI Begun-5, 3.701 g of seed from a fruit of 145 g in BARI Begun-7 and 5.5334 g of seed was produced from a fruit of 181.3 g in BARI Begun-9 (Table 1).

Like seed yield, there was also a positive and significant correlation between the fruit weight and seed number in the varieties (Fig. 2). On an average, 1157 of seed was produced

from a fruit of 219.4 g in BARI Begun-4, 1159 from a fruit of 315.8 g in BARI Begun-5, 1017 from a fruit of 145 g in BARI Begun-7 and 1354 from a fruit of 181.3 g in BARI Begun-9 (Table 1). Seed yield and seed number per plant varied from variety to variety. Rahman *et al.* (2015) also found variation of seed yield from different varieties. Hasan *et al.* (2017) Identified the *CryIAc* Protein in Bt Brinjal by ELISA Method.

Conclusion

From the equation, a seed producer may predict how much seed would be produced from the field and how much fruit would be produced for desired seed yield.

Table 1: Average fruit weight, seed weight per fruit and number of seed per fruit from different brinjal varieties

Variety	Individual fruit weight (g)	Seed weight per fruit (g)	Number of seed per fruit
BARI Begun-4	219.4 ± 35.91	4.665 ± 0.595	1157 ± 141
BARI Begun-5	315.8 ± 120.21	7.282 ± 3.219	1159 ± 537
BARI Begun-7	145.0 ± 45.09	3.701 ± 0.82	1017 ± 242
BARI Begun-9	181.3 ± 73.94	5.534 ± 2.57	1354 ± 704

Data shown in average with standard deviation

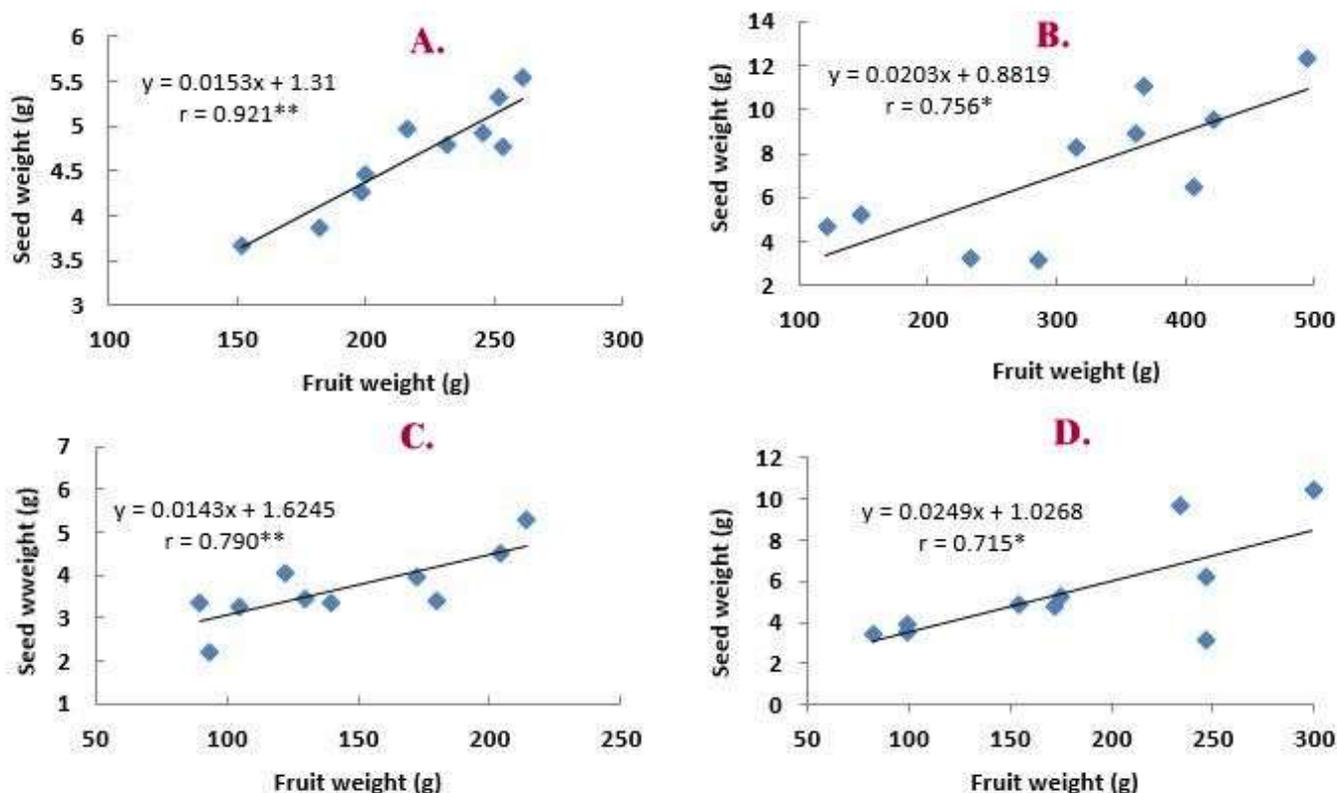


Fig.1: Relationship of fruit weight and seed yield of different brinjal varieties. A. BARI Begun-4, B. BARI Begun-5, C. BARI Begun-7 and D. BARI Begun-9.

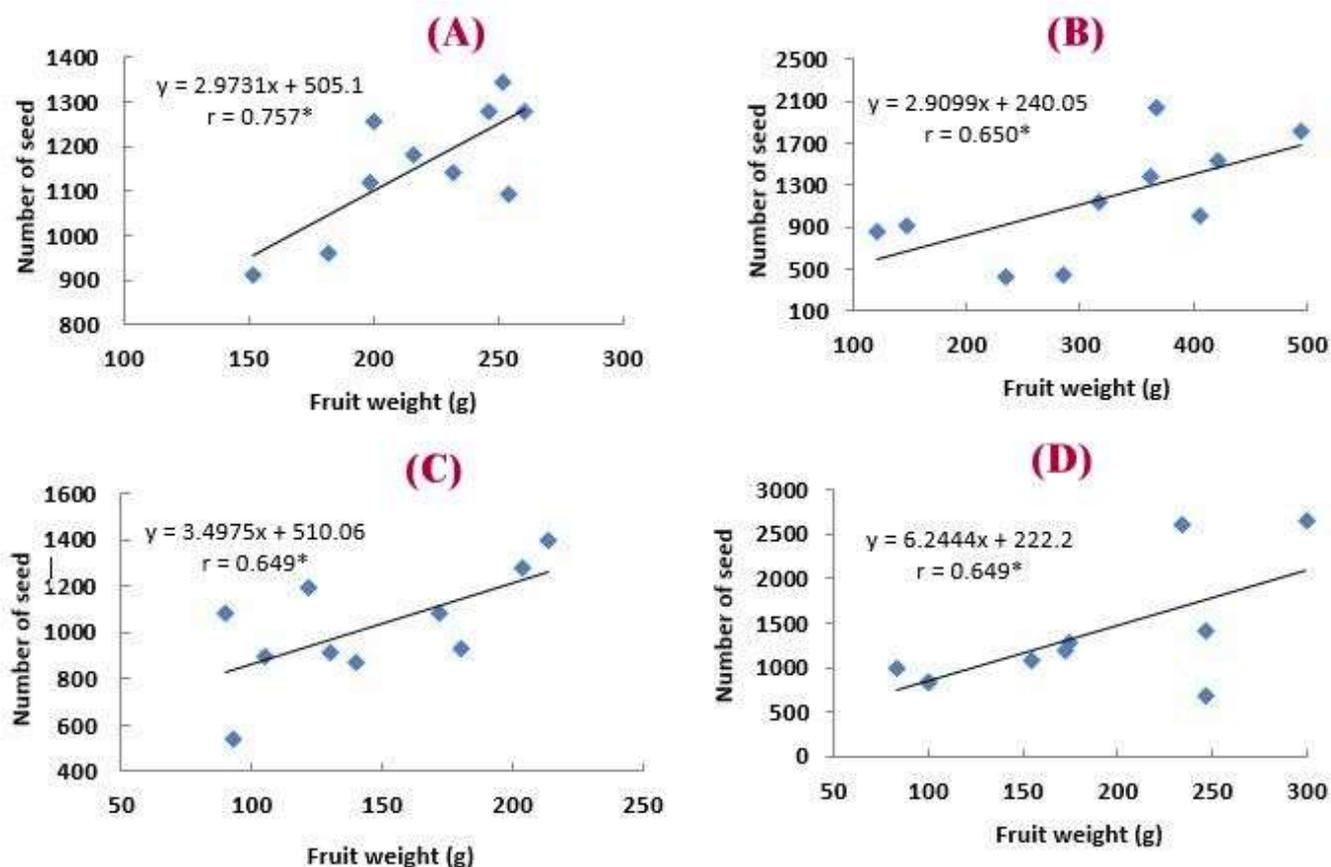


Fig. 2: Relationship of fruit weight and number of seeds of different brinjal varieties. (A) BARI Begun-4, (B) BARI Begun-5, (C) BARI Begun-7 and (D) BARI Begun-9.

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