7th Asian Cotton Research and Development Network

Nagpur, India

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Welcome to my presentation

Presented By

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Cotton Development Board

Title: Performance of Seed Cotton yield of some Newly Release Cotton Varieties at different levels of Nutrients.

Objectives

- To determine the effect of fertilizer level on yield and yield contributing character of newly released cotton varieties .
- To find out the optimum dose of fertilizer of newly released cotton varieties

Factor -A

Fertilizer levels

T_1 - 00 : 00 : 00 : 00 :NPKS $kgha^{-1}$ (Control)

T_2 - 90 : 34 : 98 : 20 :NPKS $kgha^{-1}$ (25% less than recommended dose);

T_3 - 120 : 45 : 131 : 27 : NPKS $kgha^{-1}$ (Recommended dose of fertilizer);

T_4 - 150 : 56 : 164 : 34 : NPKS $kgha^{-1}$ (25% higher than RDF);

T_{5-} 180 : 67 : 196 : 40 : NPKS $kgha^{-1}$ (50% higher than RDF);

T_{6-} 210 : 78 : 229 :46 : NPKS $kgha^{-1}$ (75% higher than RDF)

Factor-B

Variety

1.CB-12

2.CB-13

3.CB-14

Experimental design: Split-plot design.

Number of replication: 3

Total Number of plot: 54

Plot size: 4.5m x 3.6m

Date of sowing: July 24, 2014

Results and Discussion

Result were obtained from the present study regarding cotton varieties and fertilizer doses on the growth, yield cotton variety and their interaction effect of the crop characters of the cotton variety that have been presented in table and figure.

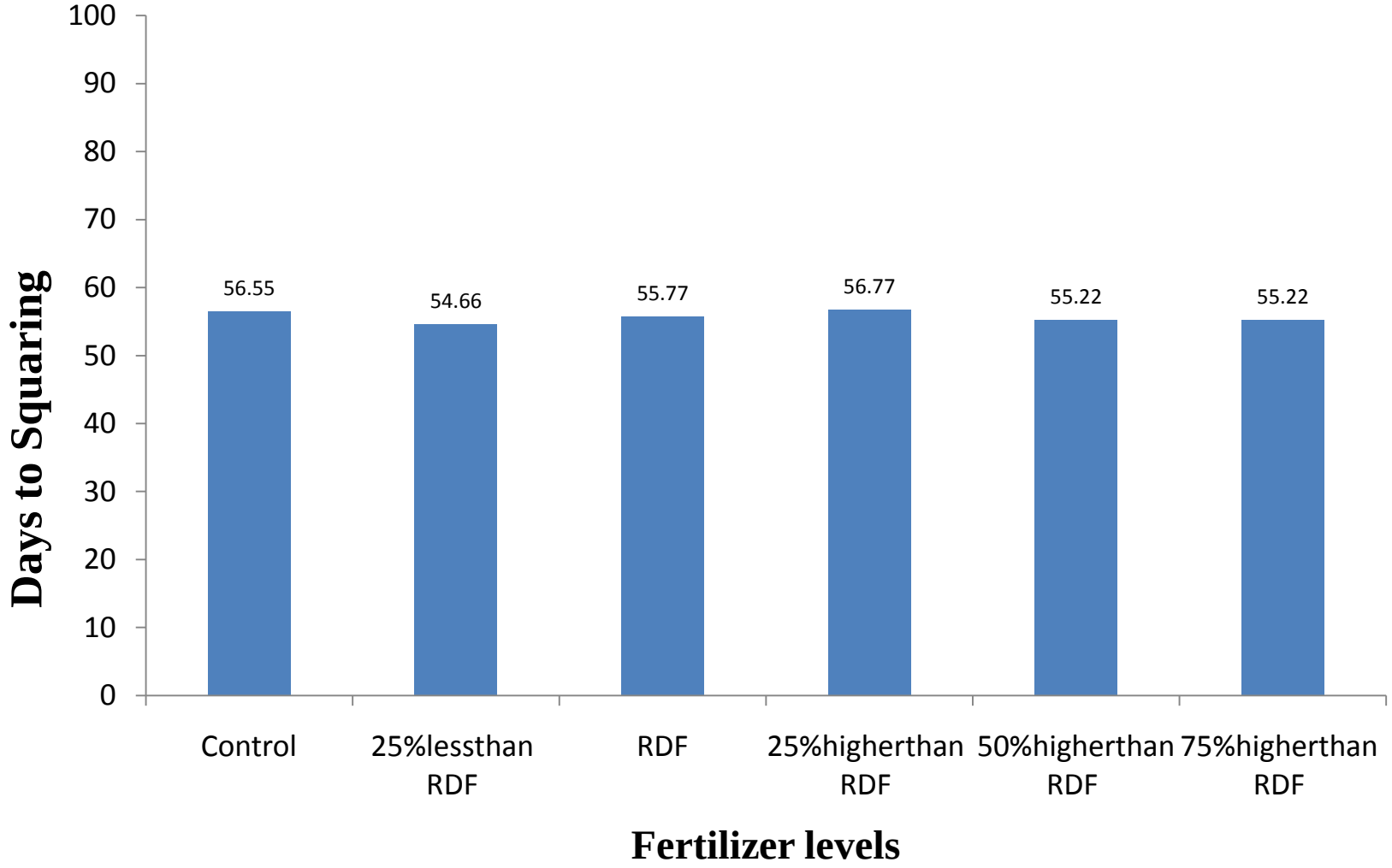

Fig 1. Effect of fertilizer levels on days to squaring (Sx^{-} =1.3999)

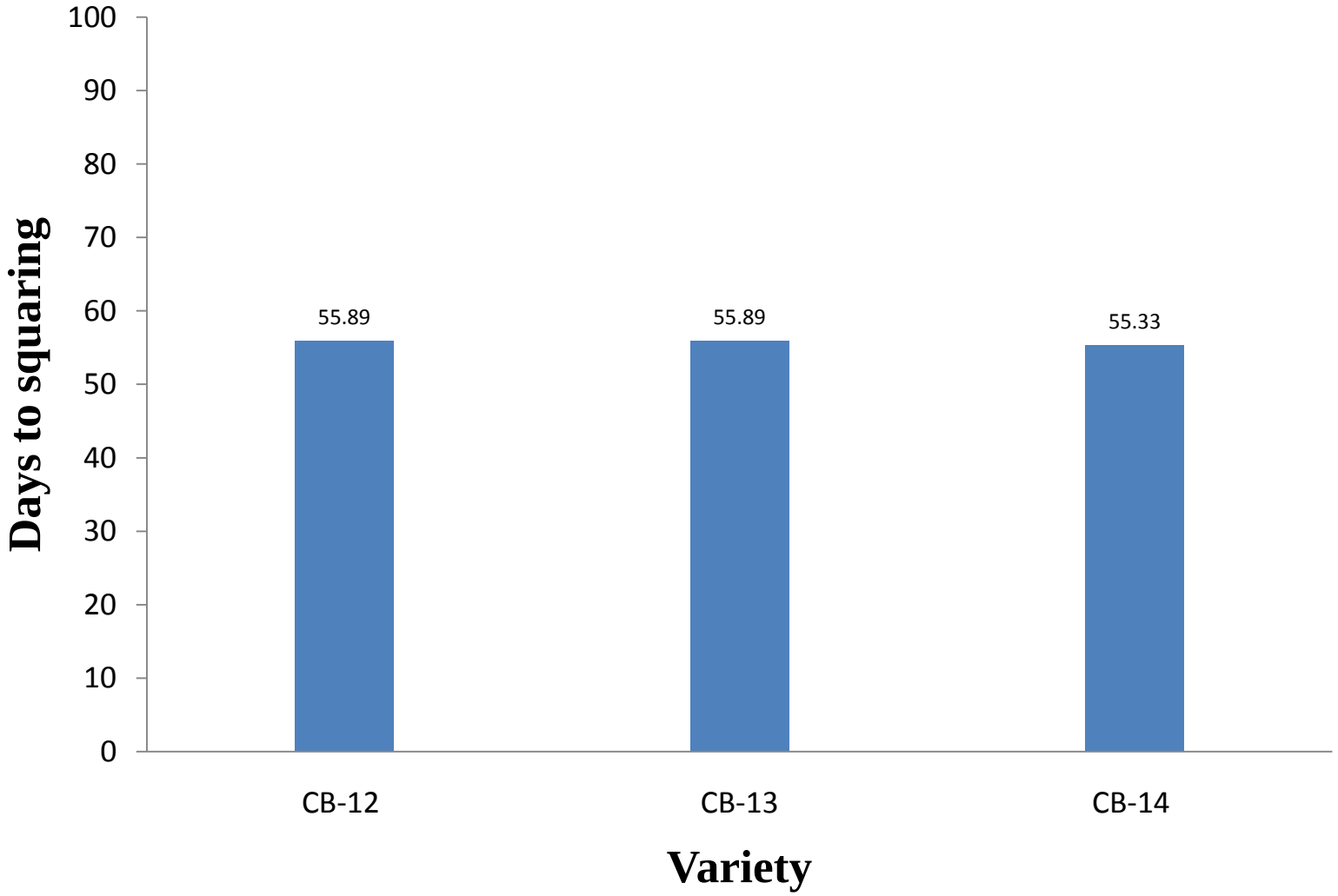

Fig .2 Effect of cotton genotype on Days to squaring (Sx^{-} =0.9235)

Table 1. Interaction effect of variety and fertilizer levels on days to squaring

Treatment (Variety × Fertilizer)	Days to squaring
CB- 12 × Control	58.67 a
×25%lessthan RDF	54.67 ab
× RDF	57.67 ab
×25%higherthan RDF	55.67 ab
×50%higherthan RDF	55.33 ab
×75%higherthan RDF	53.33 b
CB- 13 × Control	55.67 ab
×25%less than RDF	55.00 ab
× RDF	55.67 ab
×25%higher than RDF	57.67 ab
×50%higherthan RDF	56.33 ab
×75%higherthan RDF	55.00 ab
CB- 14 × Control	55.33 ab
×25%less than RDF	54.33 ab
× RDF	54.00 ab
×25%lhigherthan RDF	57.33 ab
×50%higherthan RDF	54.00 ab
×75%higherthan RDF	57.33 ab
Sx^{-}	2.3176
CV (%)	4.97

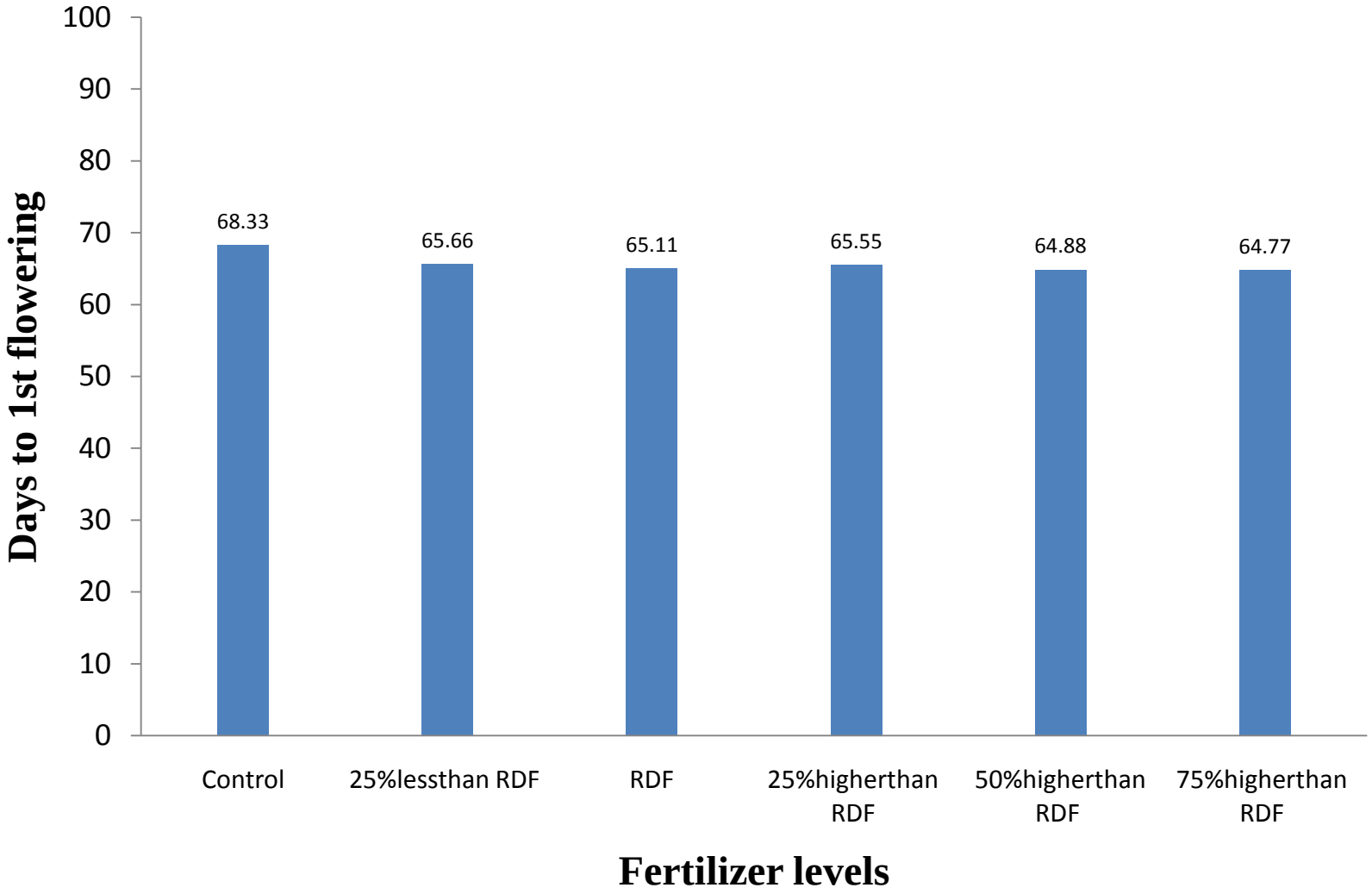

Fig .3 Effect of fertilizer levels on days to1st flowering (Sx^{-} =1.3699)

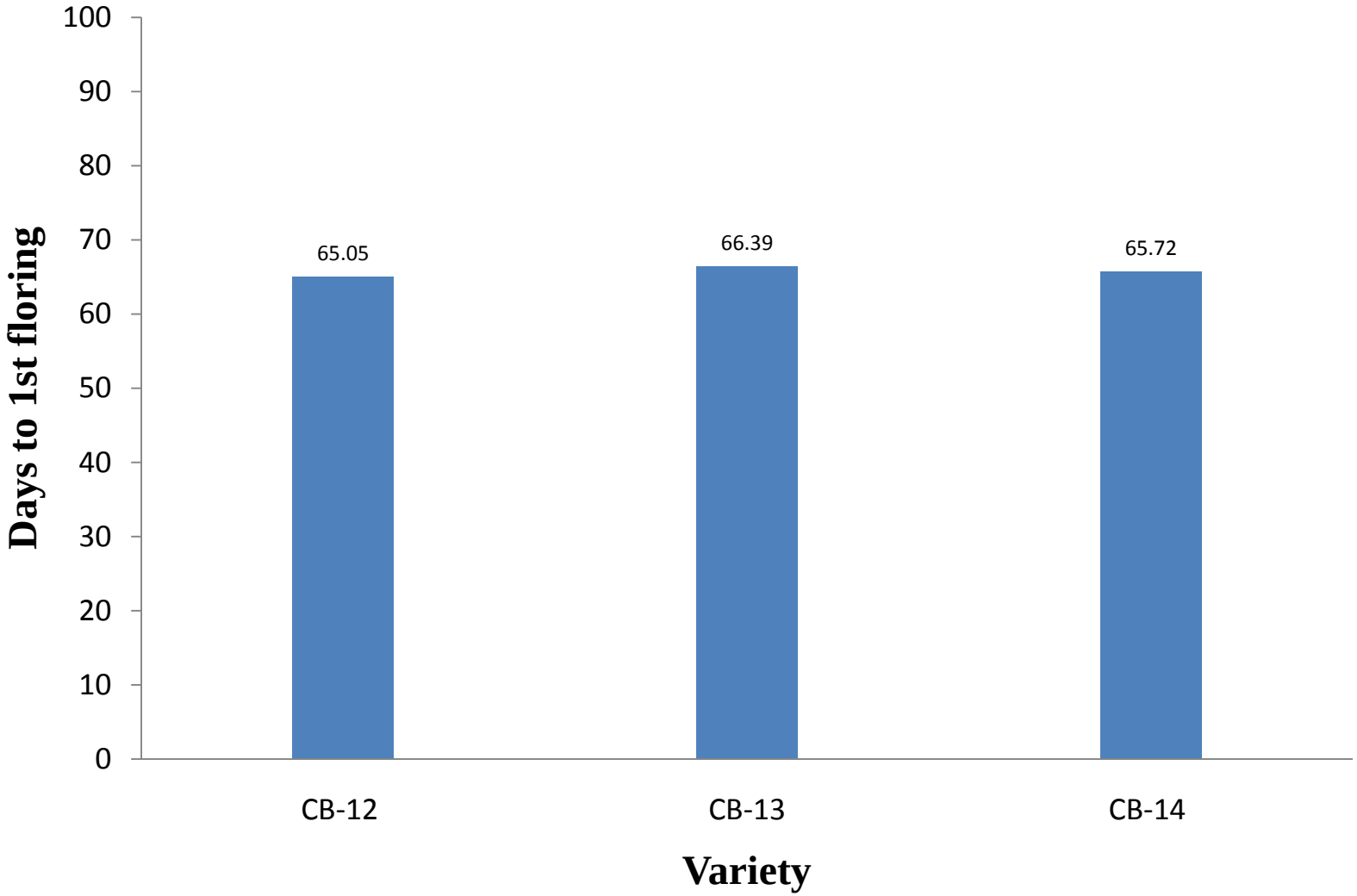

Fig .4 Effect of cotton genotype on days to 1st flowering ($Sx^{-} = 0.8327$)

Table 2. Interaction effect of variety and Fertilizer levels on days to squaring

Treatment (Variety × Fertilizer)	Days to first flowering
CB- 12 × Control	69.00 a
×25%lessthan RDF	64.33 bc
× RDF	65.00 a-c
×25%higherthan RDF	64.00 bc
×50%higherthan RDF	65.33 a-c
×75%higherthan RDF	62.67 c
CB- 13 × Control	69.00 a
×25%less than RDF	65.33 a-c
× RDF	66.33 a-c
×25%higher than RDF	67.00 a-c
×50%higherthan RDF	66.00 a-c
×75%higherthan RDF	65.00 a-c
CB- 14 × Control	67.00 a-c
×25%less than RDF	67.67 ab
× RDF	64.00 bc
×25%lhigherthan RDF	65.67 a-c
×50%higherthan RDF	63.33 bc
×75%higherthan RDF	66.67 a-c
Sx^-	2.0397
CV (%)	3.80

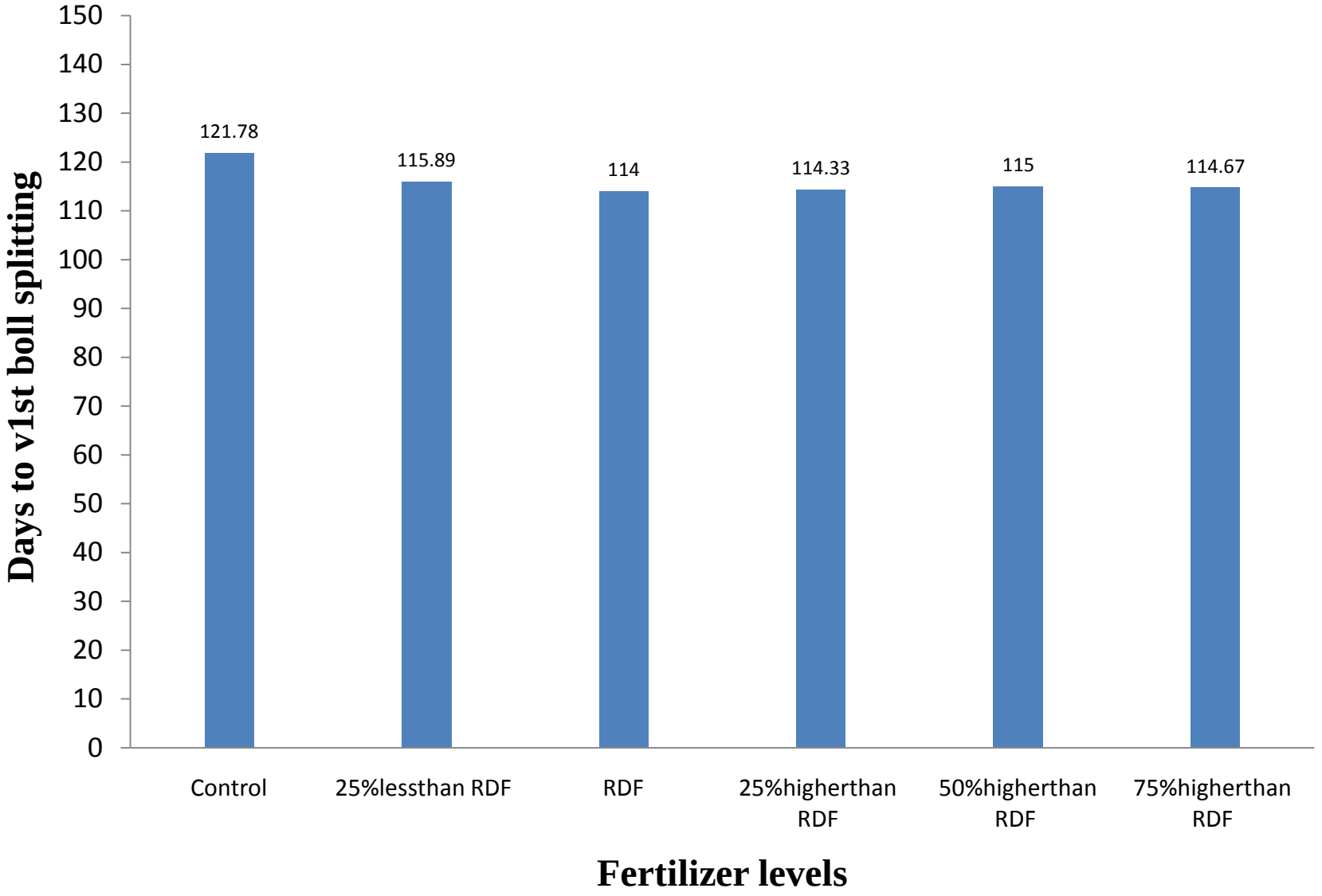

Fig 5. Effect of fertilizer levels on days to1st boll splitting (Sx^{-} =0.8389)

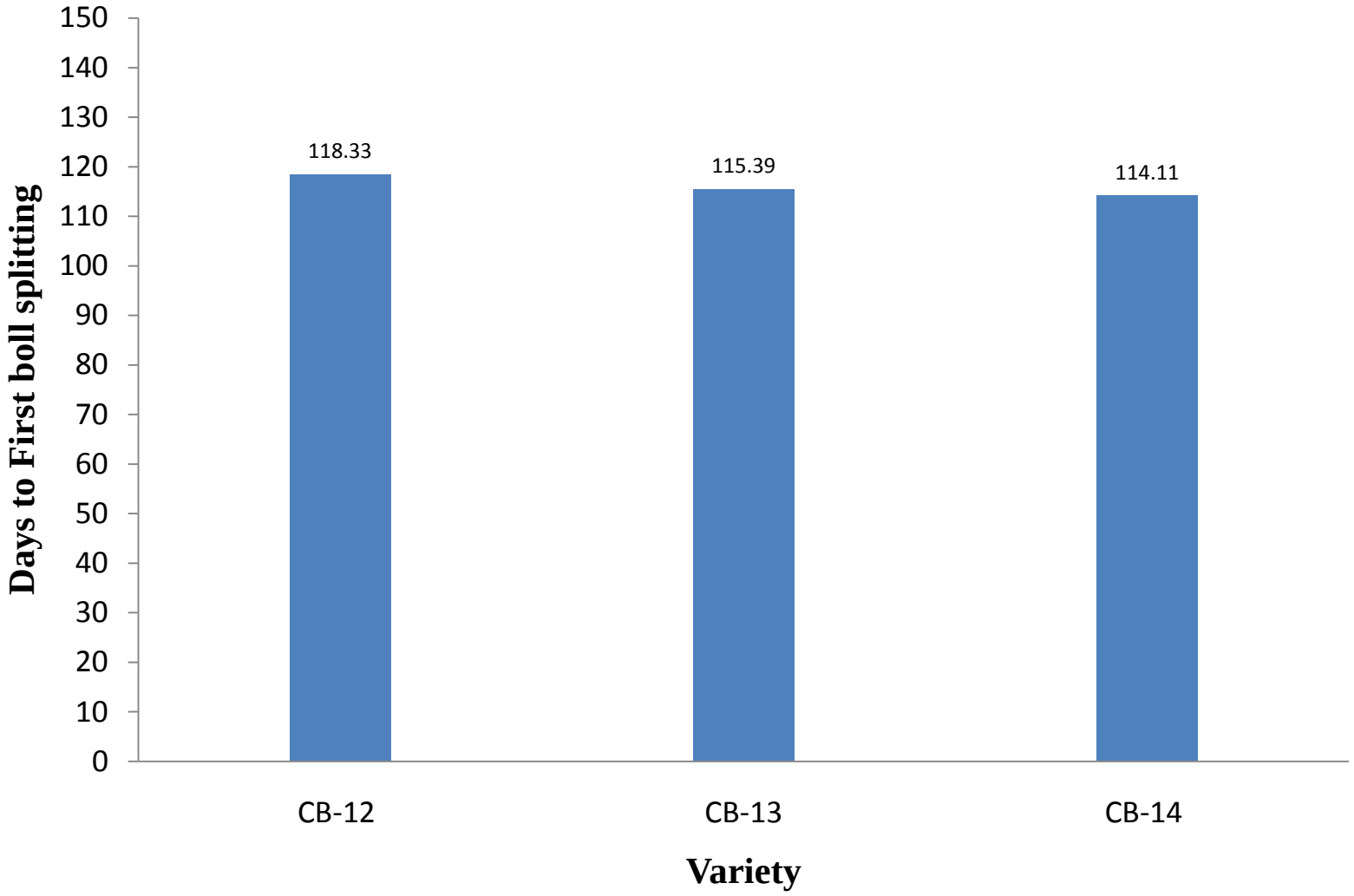

Fig .6 Effect of cotton genotype on days to 1st boll splitting (Sx^{-} = 0.832)

Table 3. Interaction effect of variety and Fertilizer levels on days to 1st boll splitting

Treatment (Variety × Fertilizer)	Days to first Boll splitting
CB- 12 × Control	122.00 a
×25%lessthan RDF	119.33 ab
× RDF	117.67 bcd
×25%higherthan RDF	115.33 c-g
×50%higherthan RDF	117.33 b-e
×75%higherthan RDF	118.33 abc
CB- 13 × Control	121.67 a
×25%less than RDF	115.67 b-f
× RDF	111.67 gh
×25%higher than RDF	114.00 d-h
×50%higherthan RDF	114.67 c-h
×75%higherthan RDF	114.67 c-h
CB- 14 × Control	121.67 a
×25%less than RDF	112.67 f-h
× RDF	112.67 f-h
×25%lhigherthan RDF	113.67 e-h
×50%higherthan RDF	113.00 f-h
×75%higherthan RDF	111.00 h
SX^{-}	1.8637
CV (%)	2.15

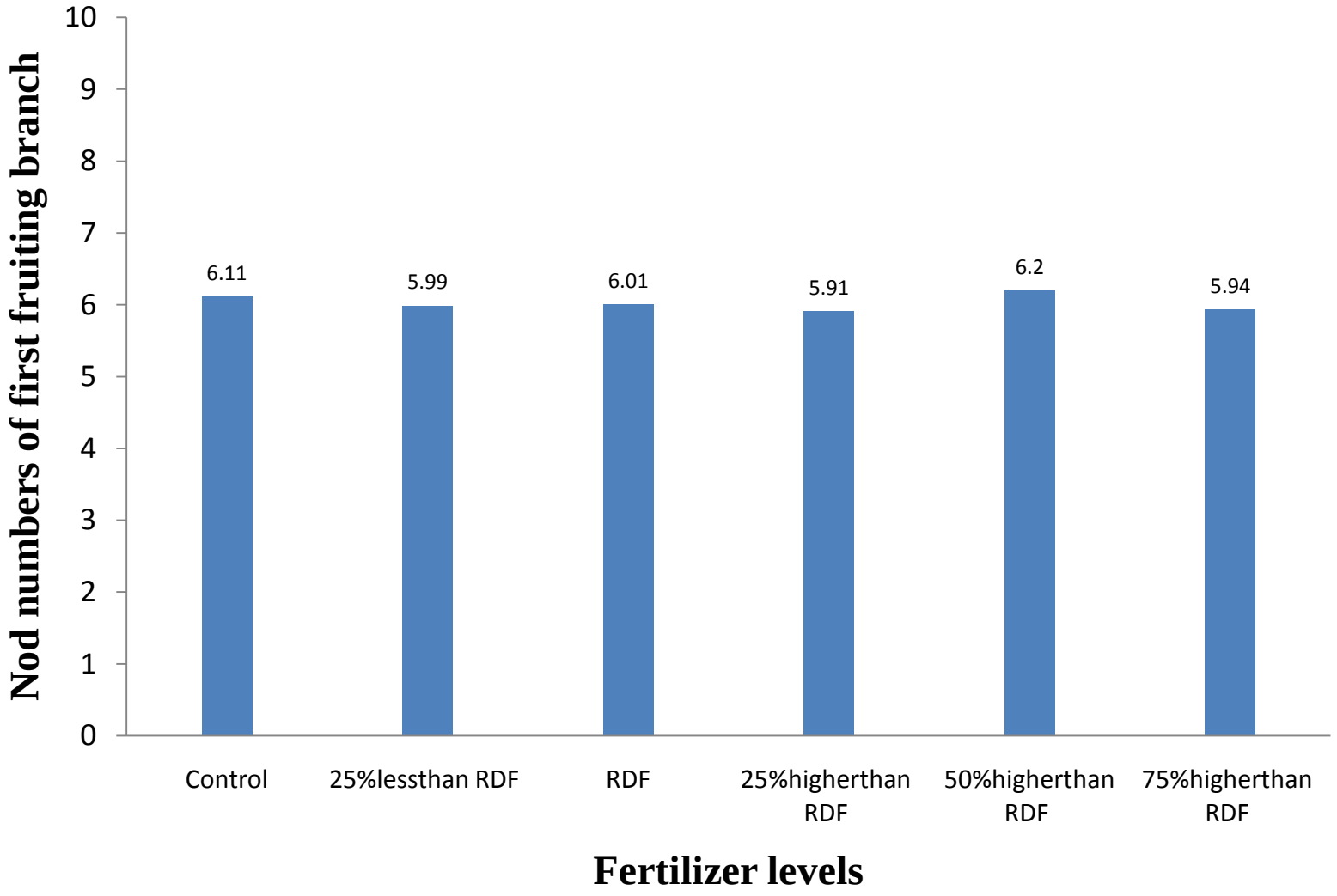

Fig 7. Effect of fertilizer levels on nod number of first fruiting branch(Sx^{-} = 0.0873)

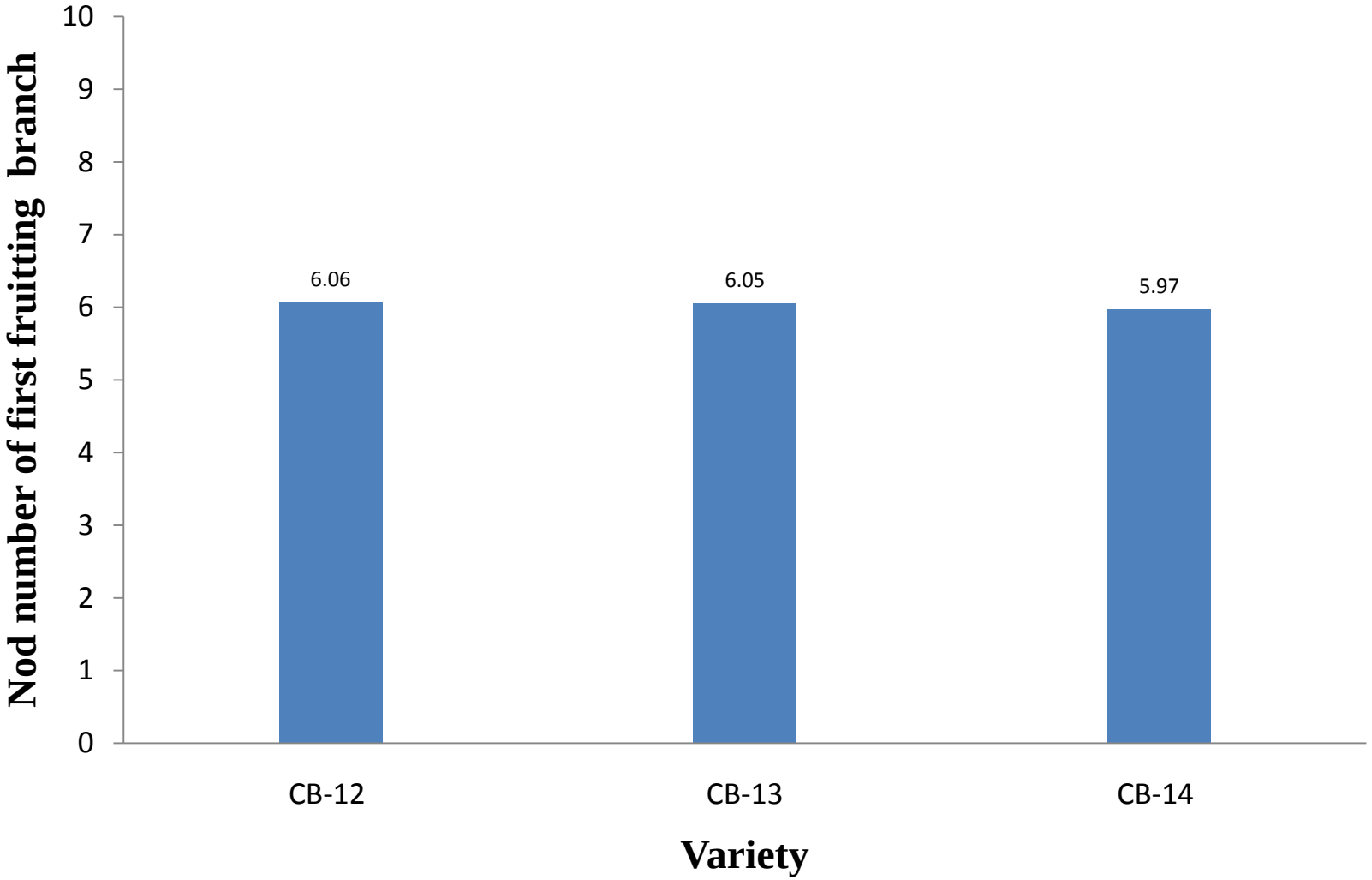

Fig .8 Effect of cotton genotype on node number of 1st fruiting branch (Sx^{-} = 0.0721)

Table 4. Interaction effect of variety and Fertilizer levels on days to 1st boll splitting

Treatment (Variety × Fertilizer)	Nod number of first fruiting branch
CB- 12 × Control	6.03 a-c
×25%lessthan RDF	6.03 a-c
× RDF	6.03 a-c
×25%higherthan RDF	5.93 bc
×50%higherthan RDF	6.37 a
×75%higherthan RDF	5.97 bc
CB- 13 × Control	6.10 ab
×25%less than RDF	5.97 bc
× RDF	5.97 bc
×25%higher than RDF	6.07 a-c
×50%higherthan RDF	6.07 a-c
×75%higherthan RDF	6.13 ab
CB- 14 × Control	6.20 a
×25%less than RDF	5.97 bc
× RDF	6.03 a-c
×25%lhigherthan RDF	5.73 c
×50%higherthan RDF	5.73 c
×75%higherthan RDF	6.17 ab
Sx-	0.1686
CV (%)	3.59

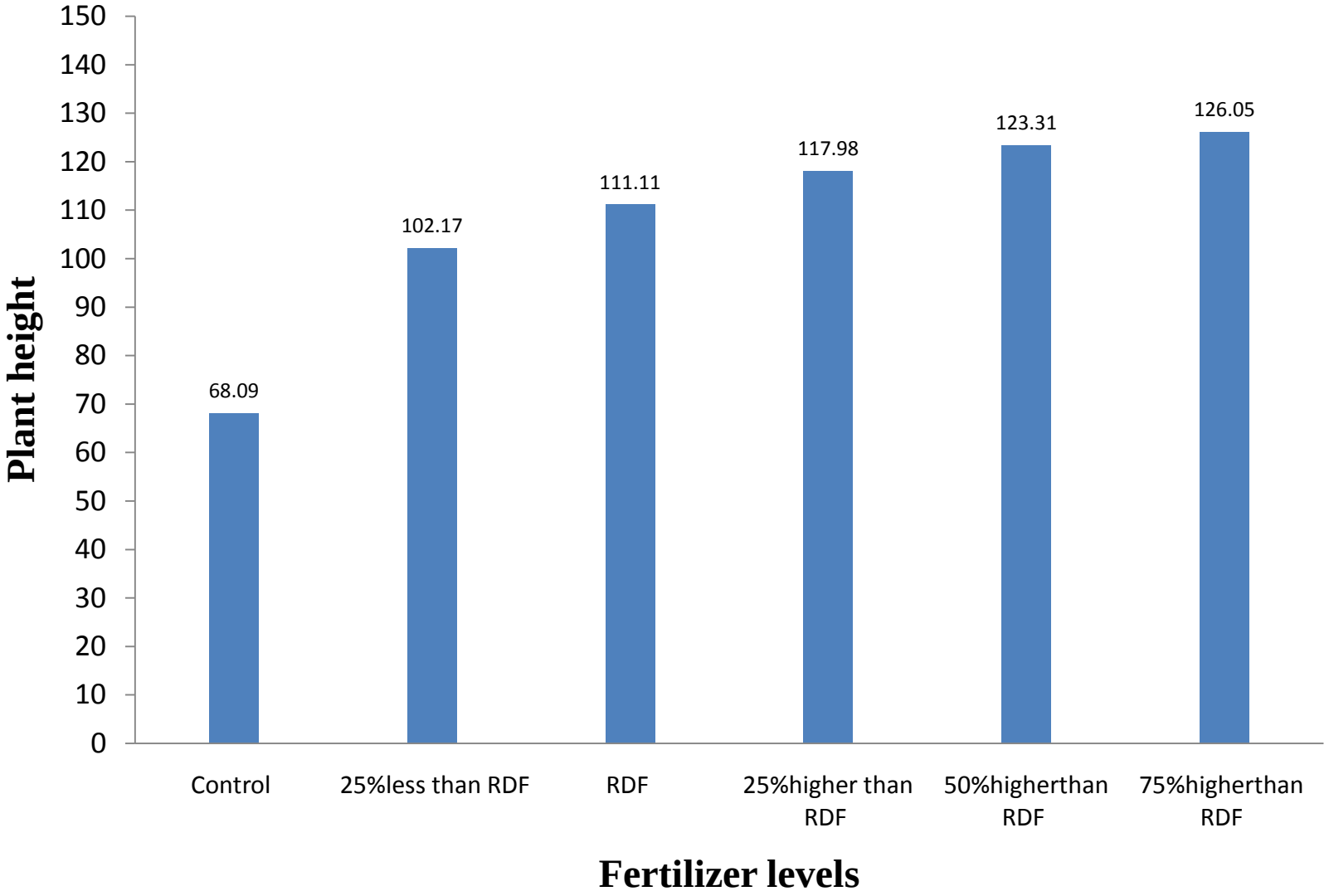

Fig 9. Effect of fertilizer levels on plant height(Sx^{-} =1.6079)

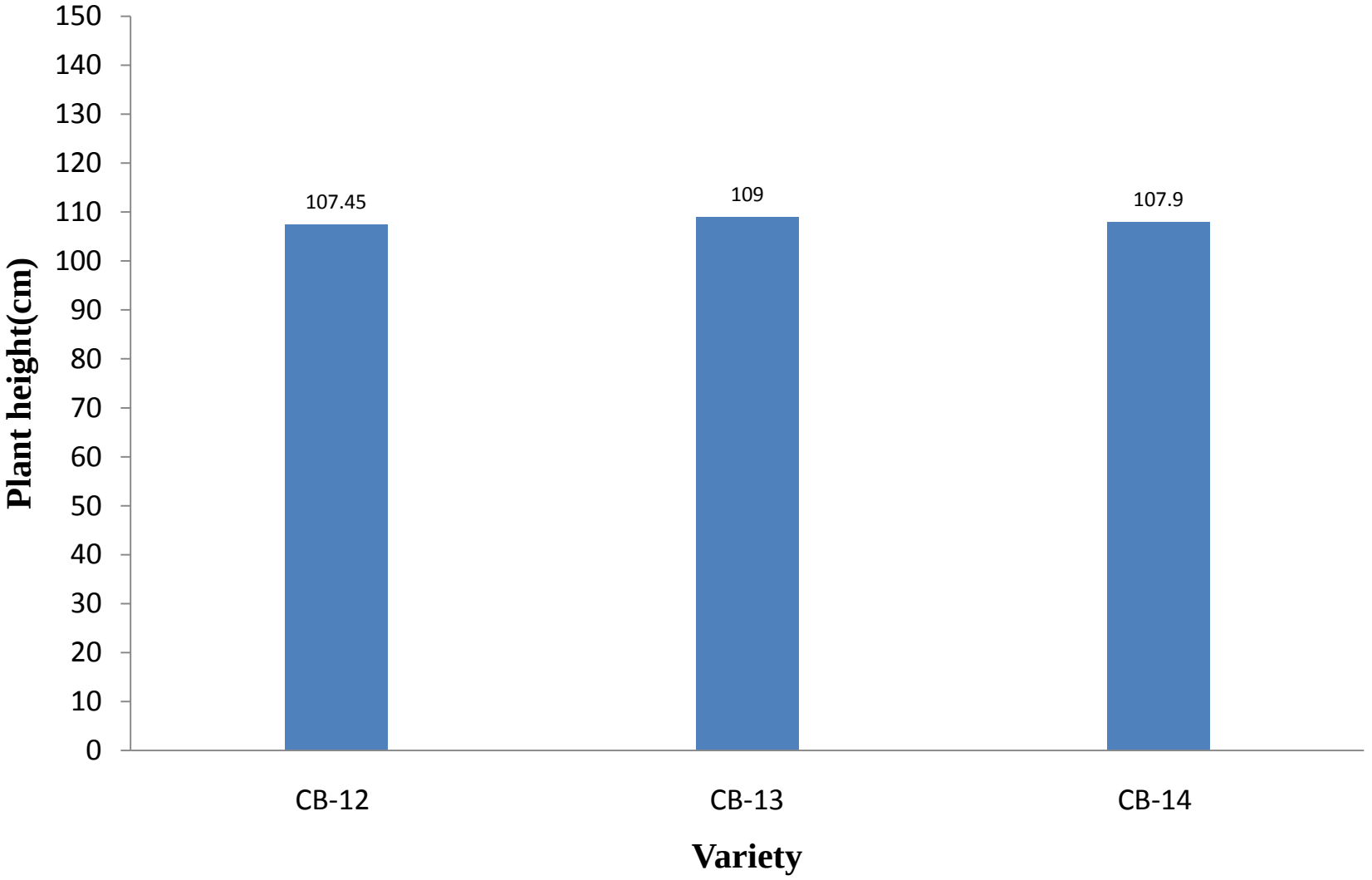

Fig 10. Effect of genotype on plant height (Sx^{-} =2.1990)

Table 5. Interaction effect of variety and Fertilizer levels on plant height

Treatment (Variety × Fertilizer)	Plant Height (cm)
CB- 12 × Control	68.10 h
×25%lessthan RDF	102.65 fg
× RDF	109.55 d-f
×25%higherthan RDF	118.79 a-d
×50%higherthan RDF	122.74 a-c
×75%higherthan RDF	122.90 a-c
CB- 13 × Control	66.16 h
×25%less than RDF	108.84 ef
× RDF	113.45c-e
×25%higher than RDF	114.01 b-e
×50%higherthan RDF	123.55 ab
×75%higherthan RDF	127.98 a
CB- 14 × Control	70.00 h
×25%less than RDF	95.03 g
× RDF	110.33 d-f
×25%lhigherthan RDF	121.14 a-c
×50%higherthan RDF	123.65 ab
×75%higherthan RDF	127.27 a
Sx-	4.6827
CV (%)	6.10

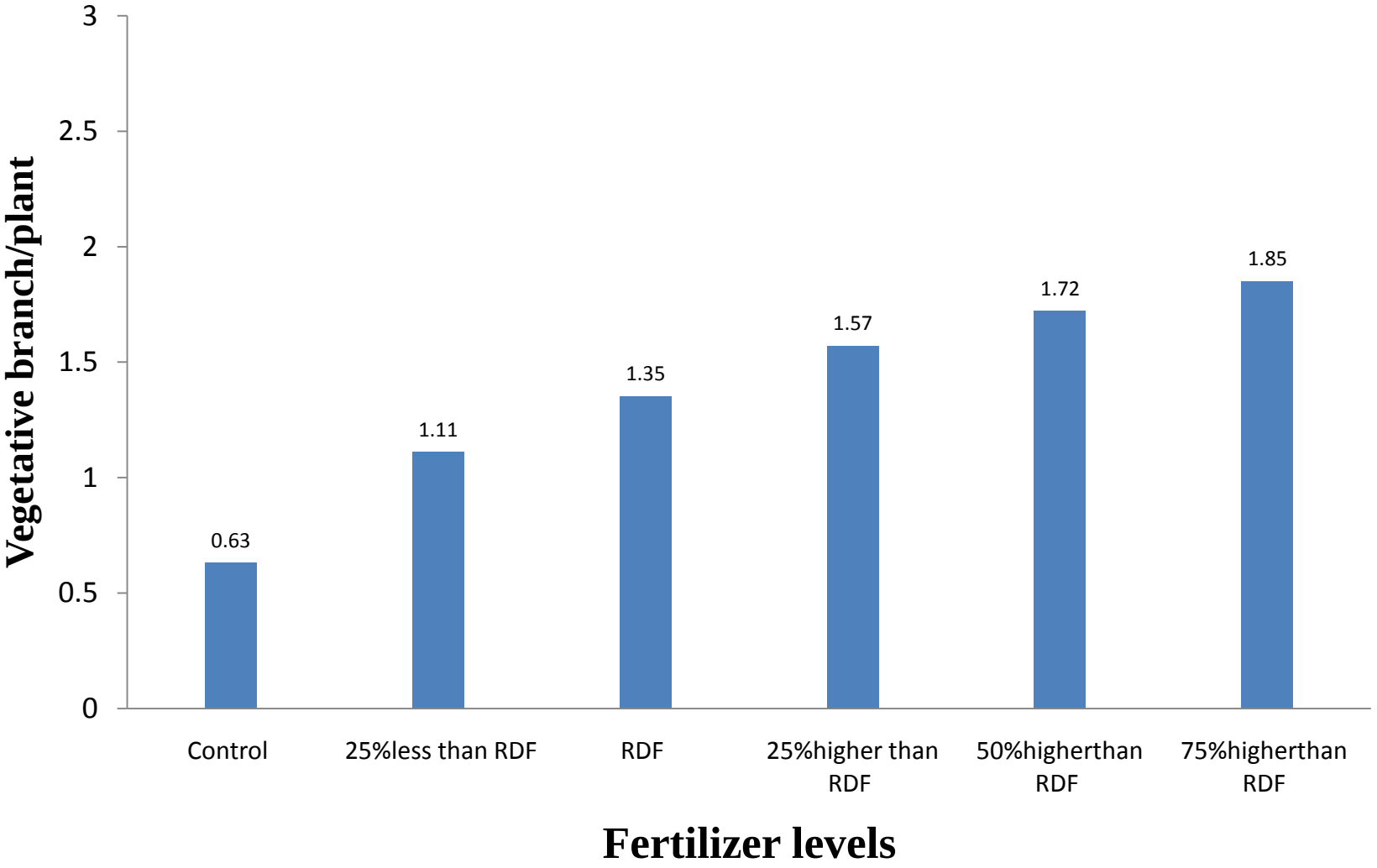

Fig 11. Effect of fertilizer levels on vegetative branch plant^{-1} (Sx^{-} = 0.0636))

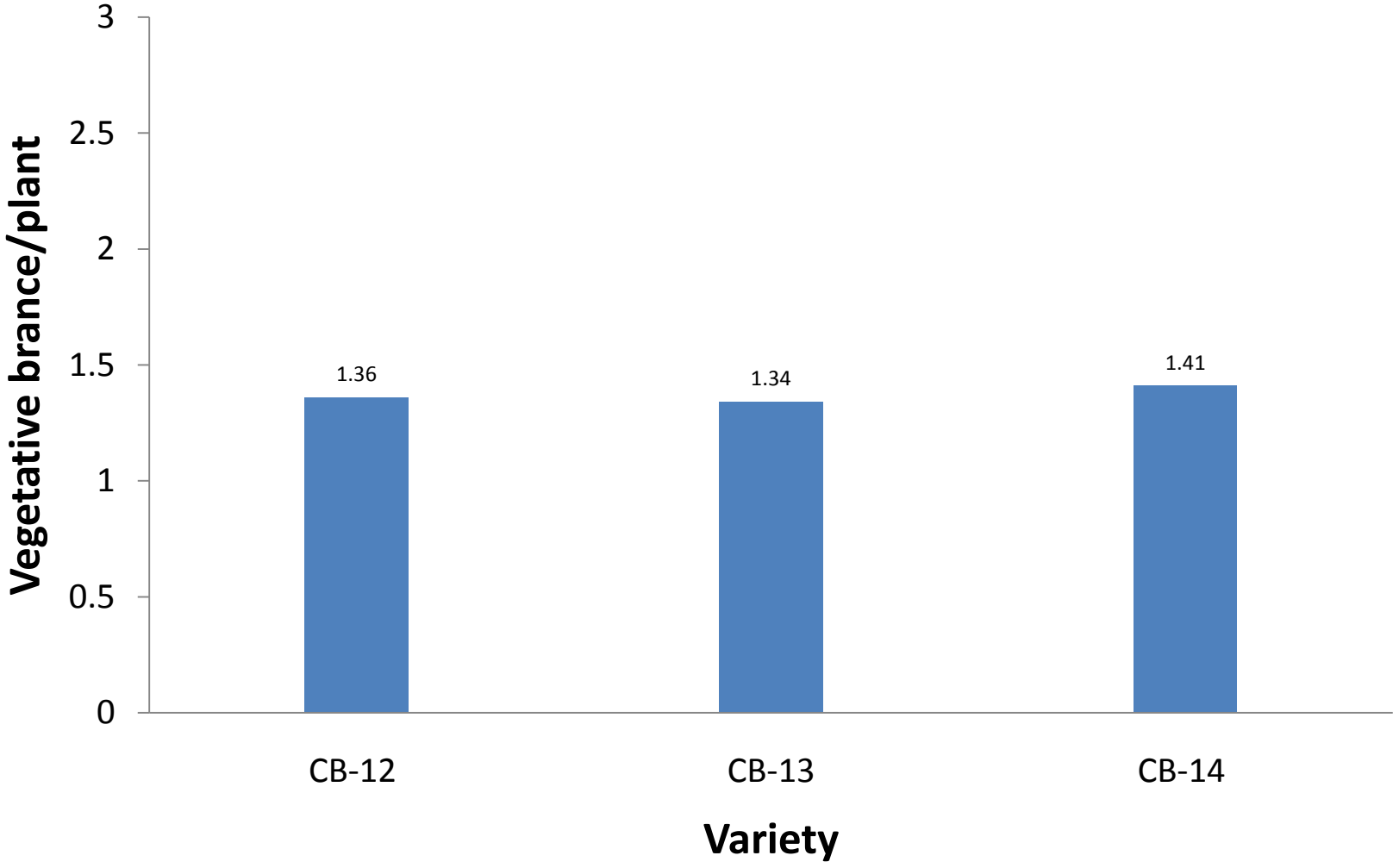

Fig 12. Effect of genotype on vegetative branch plant^{-1} (Sx^{-} = 0.0652)

Table 6. Interaction effect of variety and Fertilizer levels on vegetative branch plant^{-1}

Treatment (Variety × Fertilizer)	Vegetative branch plant^{-1}
CB- 12 × Control	0.60 i
×25%lessthan RDF	1.10 fg
× RDF	1.30 e-g
×25%higherthan RDF	1.61 a-d
×50%higherthan RDF	1.71 ab
×75%higherthan RDF	1.85 a
CB- 13 × Control	0.53 i
×25%less than RDF	1.06 gh
× RDF	1.36 d-g
×25%higher than RDF	1.60 a-d
×50%higherthan RDF	1.70 a-c
×75%higherthan RDF	1.81 ab
CB- 14 × Control	0.76 hi
×25%less than RDF	1.17 fg
× RDF	1.40 c-f
×25%lhigherthan RDF	1.52 b-e
×50%higherthan RDF	1.75 ab
×75%higherthan RDF	1.90 a
Sx^{-}	0.1596
CV (%)	14.20

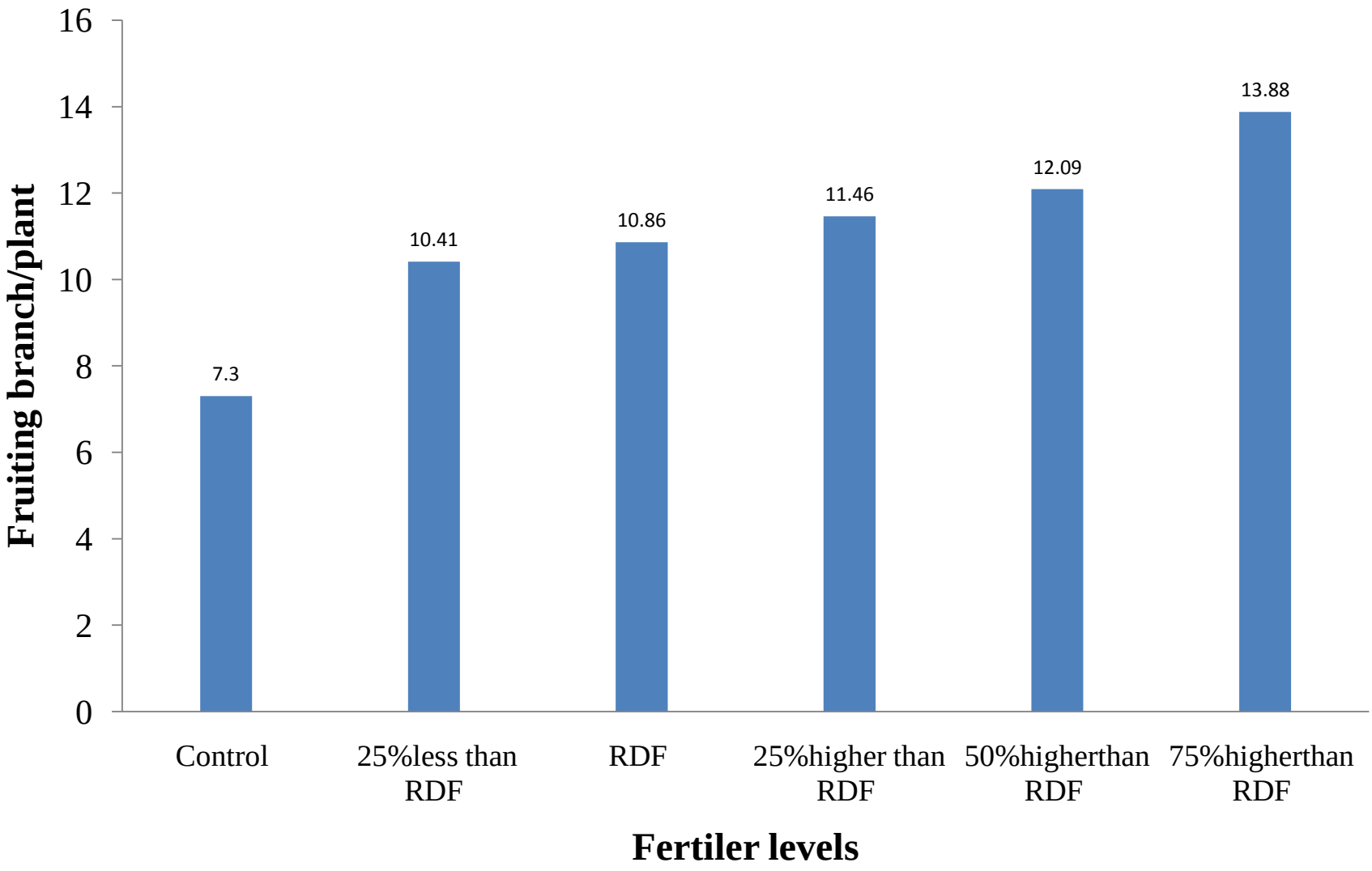

Fig 13. Effect of fertilizer levels on fruiting branch plant^{-1} (Sx^{-} = 0.9359)

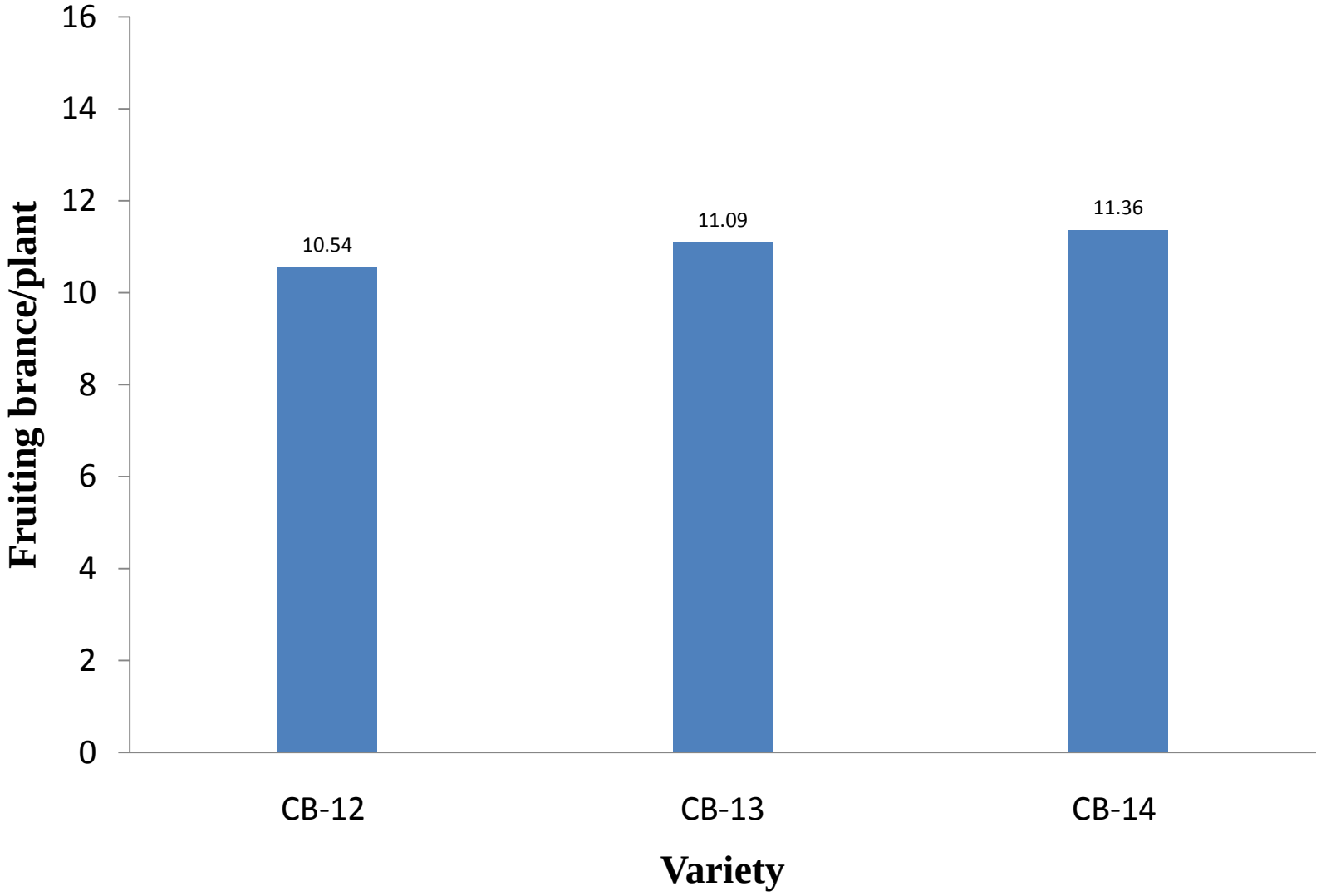

Fig 14. Effect of genotype on fruiting branch plant^{-1} (Sx^{-} = 0.4449)

Table 7. Interaction effect of variety and Fertilizer levels on fruiting branch plant^{-1}

Treatment (Variety × Fertilizer)	Fruiting branch plant^{-1}
CB- 12 × Control	6.70 g
×25%lessthan RDF	9.83 d-f
× RDF	10.93 c-f
×25%higherthan RDF	12.43 a-d
×50%higherthan RDF	9.60 ef
×75%higherthan RDF	13.77 ab
CB- 13 × Control	6.80 g
×25%less than RDF	11.53 b-e
× RDF	9.87 d-f
×25%higher than RDF	12.33 a-e
×50%higherthan RDF	12.73 a-c
×75%higherthan RDF	14.90 a
CB- 14 × Control	8.40 fg
×25%less than RDF	9.87 d-f
× RDF	11.77 b-e
×25%lhigherthan RDF	11.50 b-e
×50%higherthan RDF	12.03 b-e
×75%higherthan RDF	12.97 a-c
Sx^{-}	1.2914
CV (%)	12.14

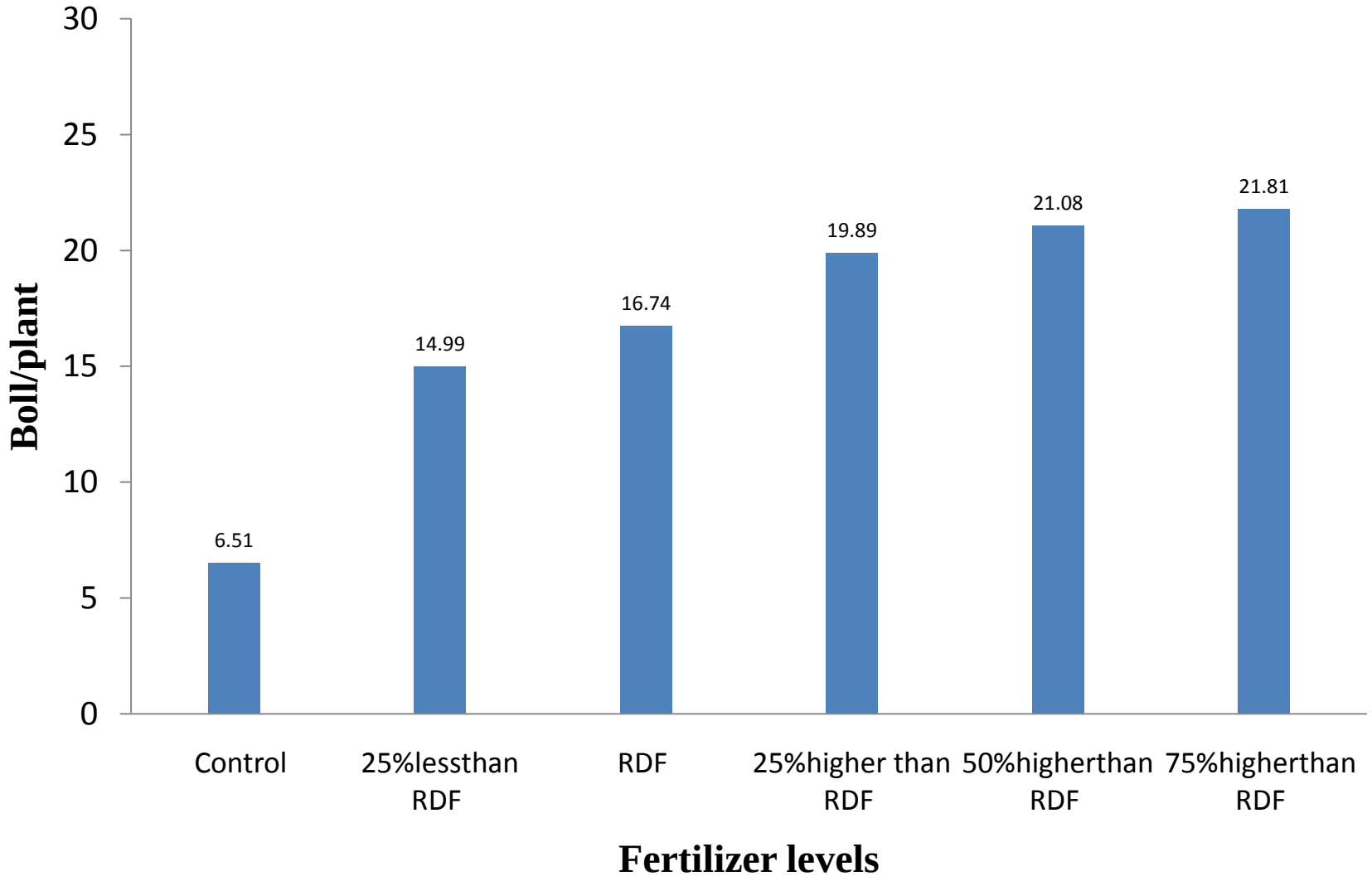

Fig 15. Effect of fertilizer levels on boll plant^{-1} (Sx^{-} =0.5300)

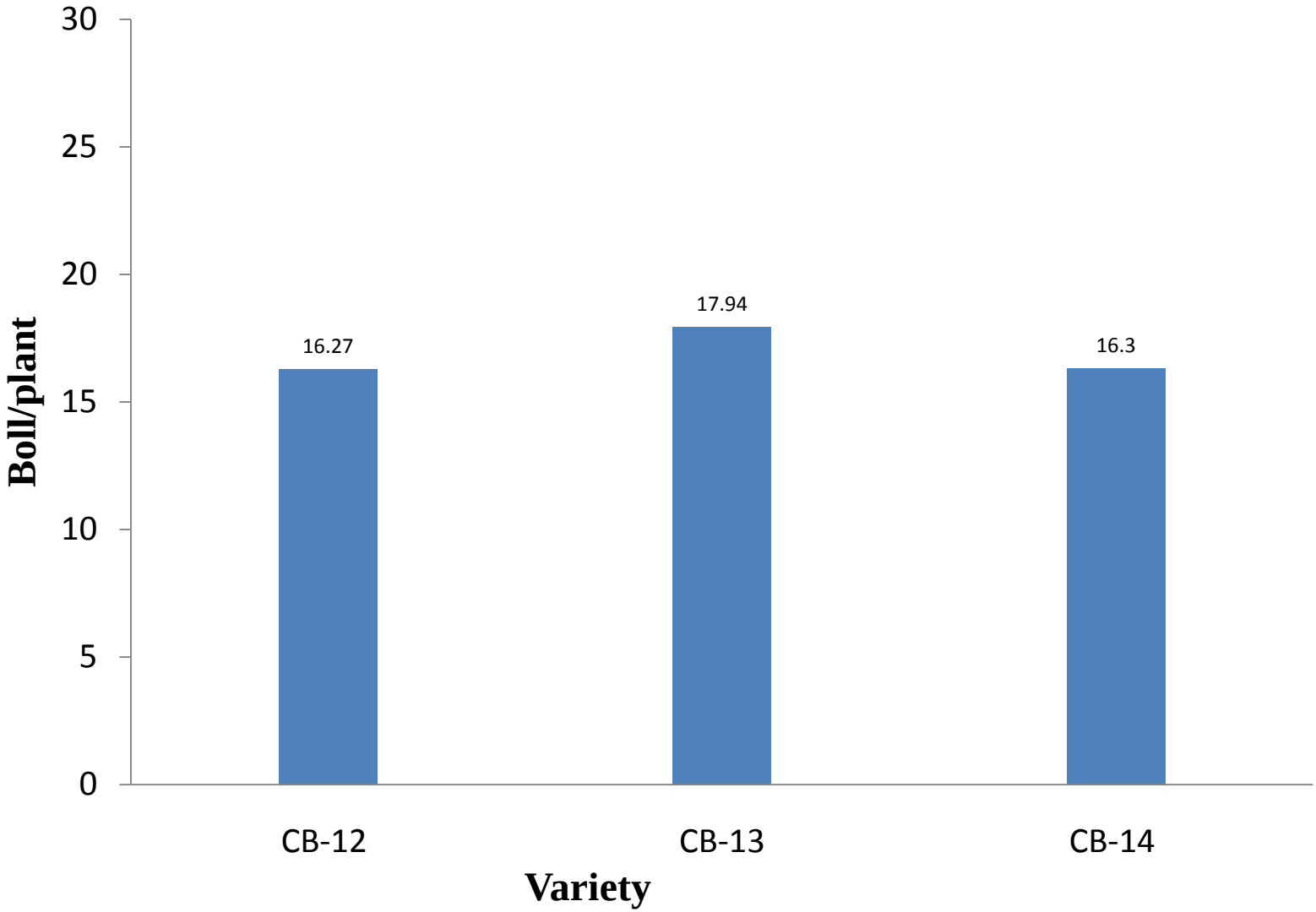

Fig 16. Effect of genotype on boll plant^{-1} (Sx^{-} = 0.4425)

Table 8. Interaction effect of variety and Fertilizer levels on boll plant^{-1}

Treatment (Variety × Fertilizer)	Boll Plant^{-1}
CB- 12 × Control	5.61 h
×25%lessthan RDF	14.53 g
× RDF	16.11fg
×25%higherthan RDF	19.71 cd
×50%higherthan RDF	20.20 cd
×75%higherthan RDF	21.48 bc
CB- 13 × Control	6.35 h
×25%less than RDF	16.05fg
× RDF	17.20 ef
×25%higher than RDF	20.96 b-d
×50%higherthan RDF	23.13 ab
×75%higherthan RDF	23.95 a
CB- 14 × Control	7.56 h
×25%less than RDF	14.40 g
× RDF	16.91 ef
×25%lhigherthan RDF	19.00 de
×50%higherthan RDF	19.93 cd
×75%higherthan RDF	20.00 cd
Sx^{-}	1.0316
CV (%)	7.88

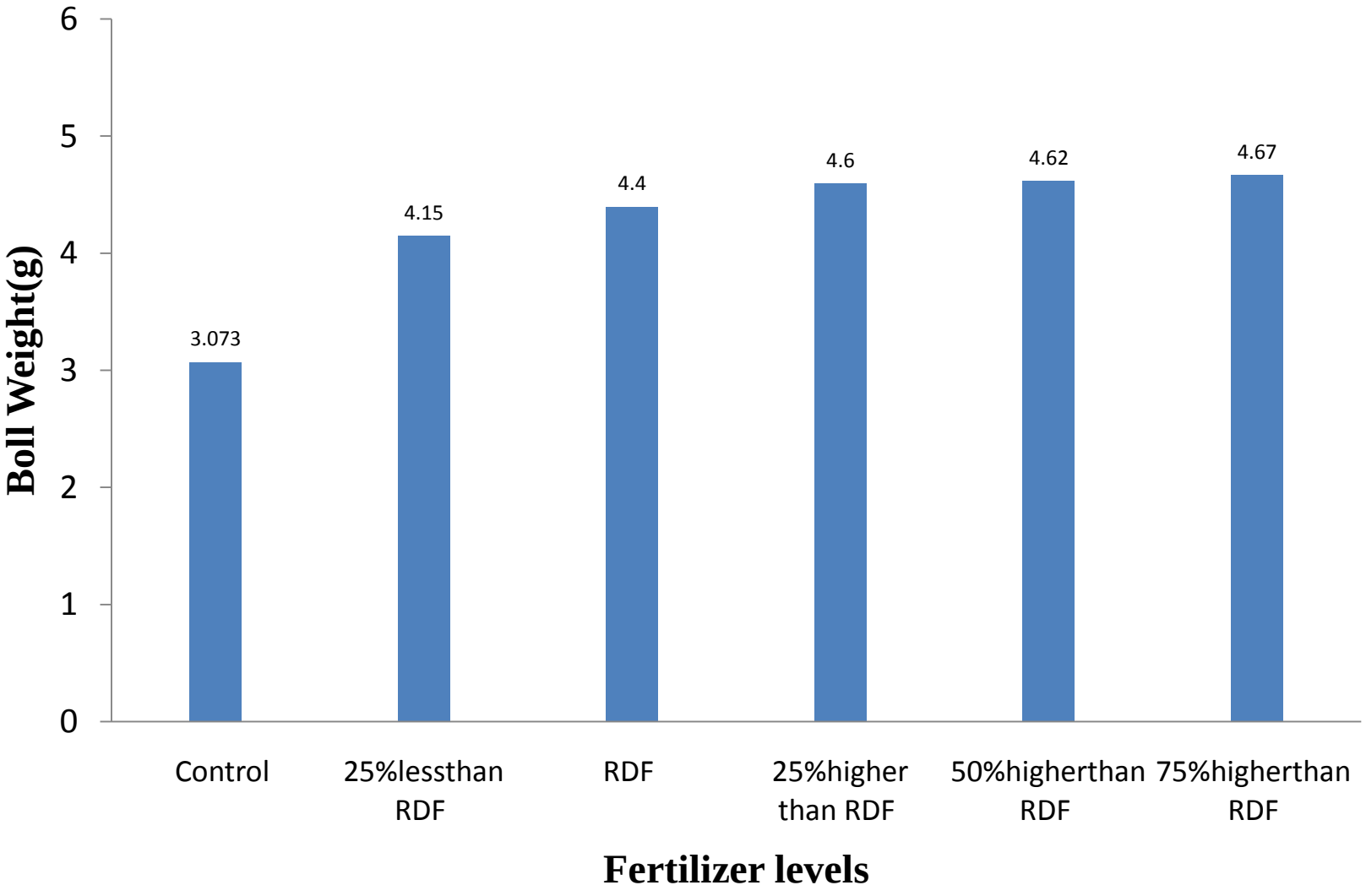

Fig 17. Effect of fertilizer levels on boll weight (Sx^{-} 0.2612)

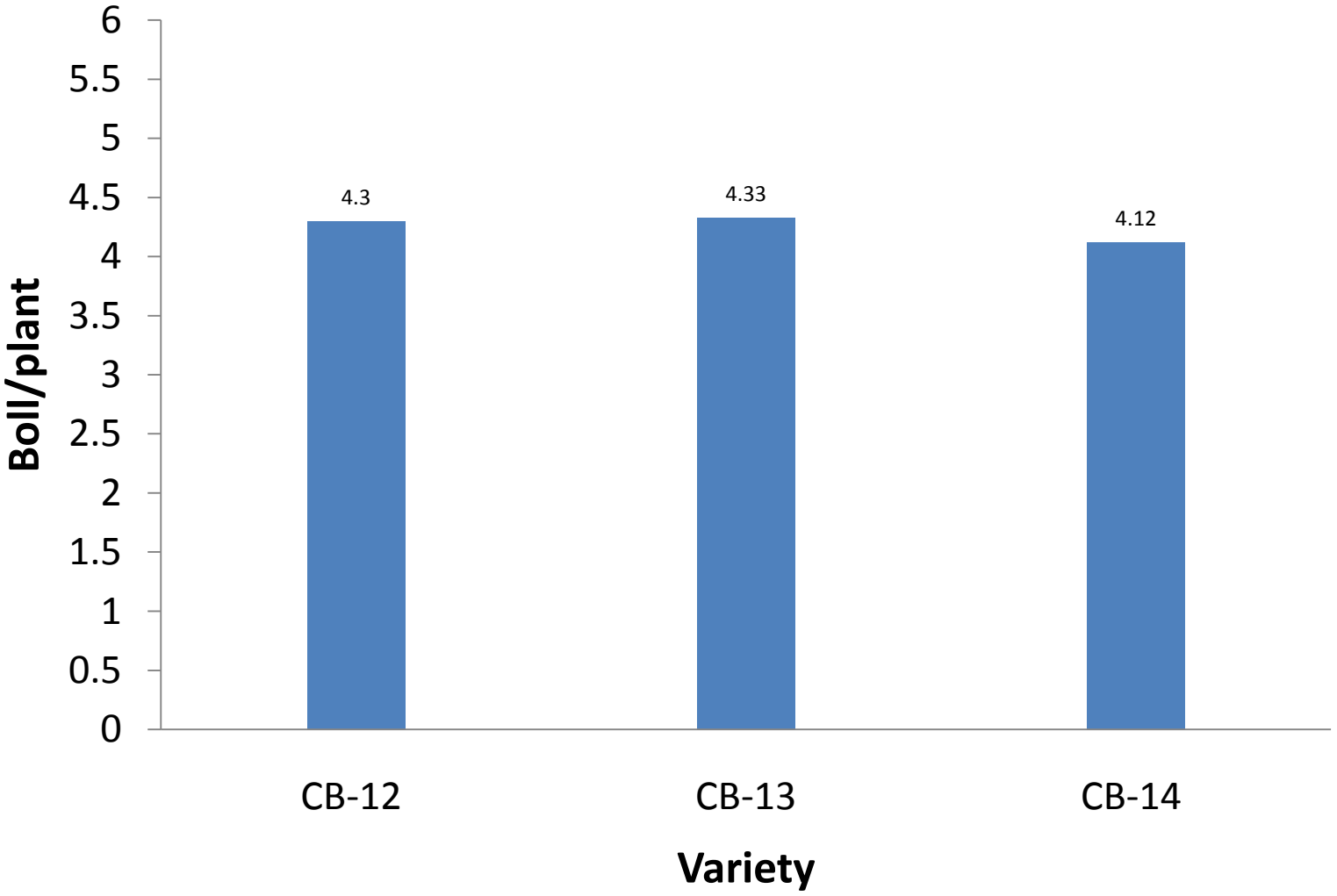

Fig 18. Effect of genotype on boll weight (Sx^{-} 0.0562)

Table 9 Interaction effect of variety and Fertilizer levels on boll weight

Treatment (Variety × Fertilizer)	Boll weigh(g)
CB- 12 × Control	3.06 f
×25%lessthan RDF	4.20 d
× RDF	4.42 b-d
×25%higherthan RDF	4.72 a
×50%higherthan RDF	4.68 ab
×75%higherthan RDF	4.71 a
CB- 13 × Control	3.12 f
×25%less than RDF	4.47 a-d
× RDF	4.52 a-c
×25%higher than RDF	4.59 ab
×50%higherthan RDF	4.63 ab
×75%higherthan RDF	4.65 ab
CB- 14 × Control	3.04 f
×25%less than RDF	3.78 e
× RDF	4.26 cd
×25%lhigherthan RDF	4.48 a-c
×50%higherthan RDF	4.54 ab
×75%higherthan RDF	4.65 ab
Sx-	0.1251
CV (%)	3.96

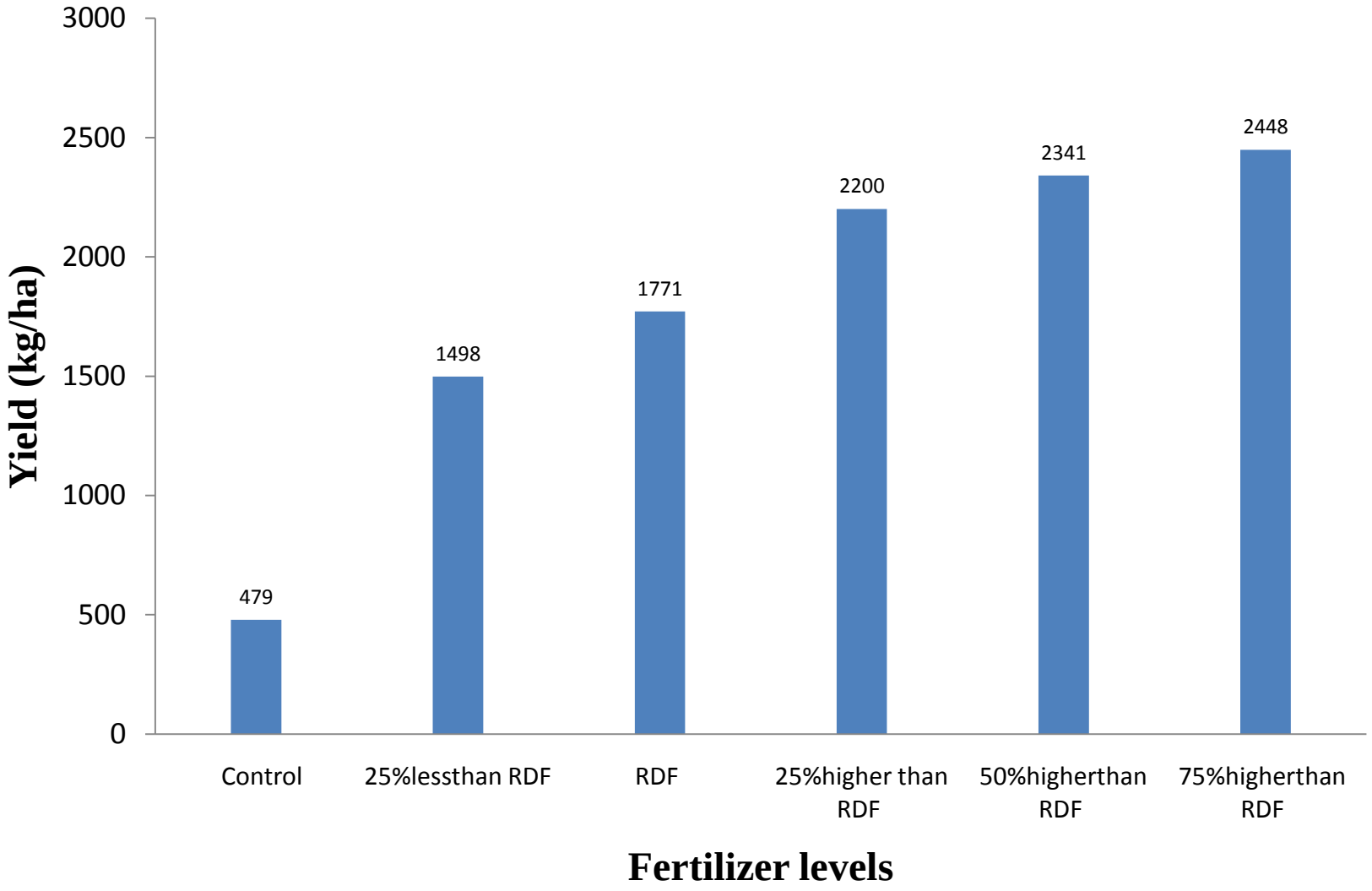

Fig 19. Effect of fertilizer levels on yield $Sx^{-} = 65.755$)

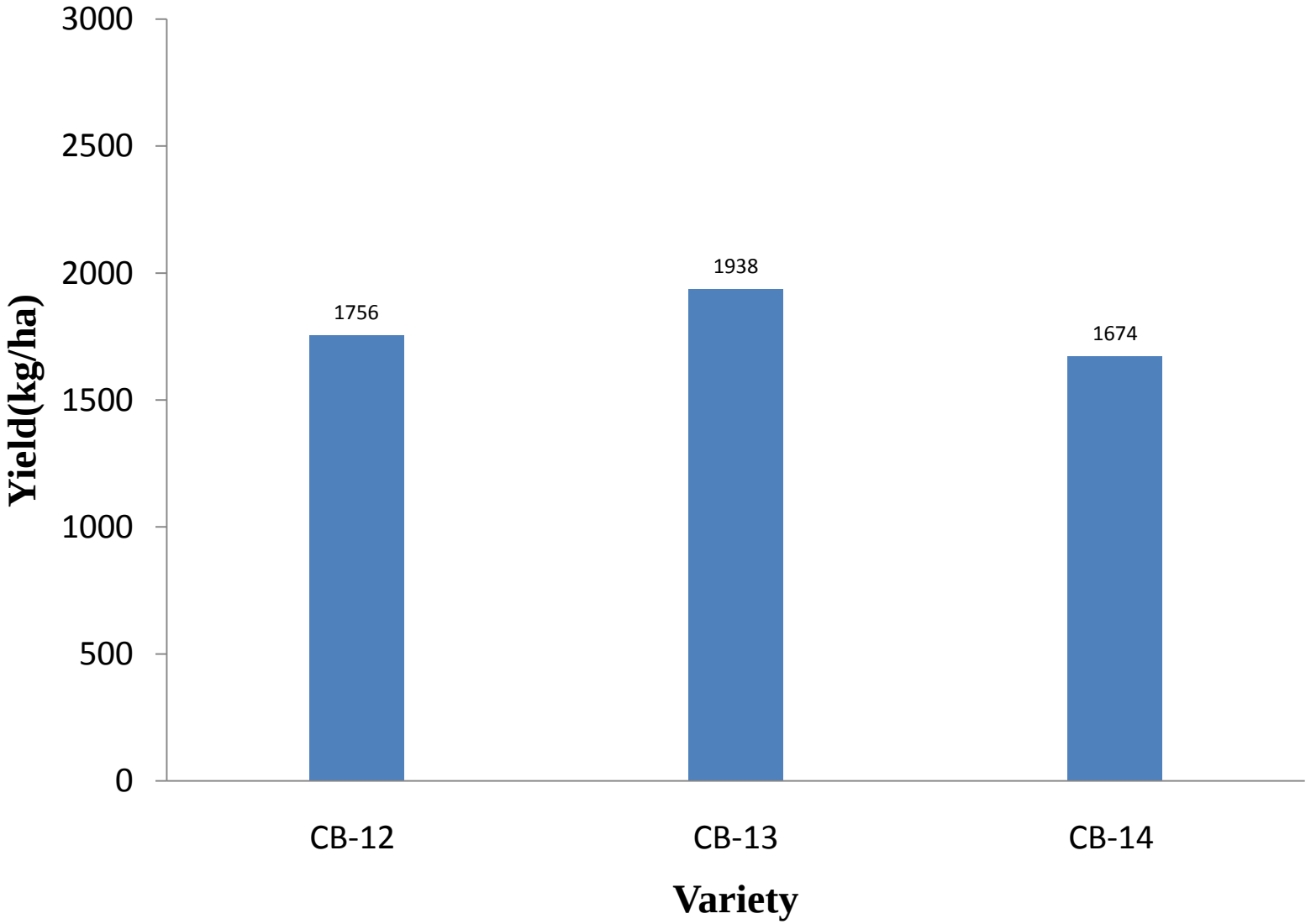

Fig 20. Effect of genotype on yield (Sx^{-} =59.836)

Table 10. Interaction effect of variety and Fertilizer levels on boll weight

Treatment (Variety × Fertilizer)	Yield (kg ha^{-1})
CB- 12 × Control	412 i
×25%lessthan RDF	1466 gh
× RDF	1710 fg
×25%higherthan RDF	2275 b-d
×50%higherthan RDF	2275 b-d
×75%higherthan RDF	2434 a-c
CB- 13 × Control	474 i
×25%less than RDF	1722 fg
× RDF	1868 ef
×25%higher than RDF	2315 b-d
×50%higherthan RDF	2575 ab
×75%higherthan RDF	2676 a
CB- 14 × Control	552 i
×25%less than RDF	1307 h
× RDF	1735 fg
×25%lhigherthan RDF	2047 de
×50%higherthan RDF	2175 cd
×75%higherthan RDF	2233 cd
Sx-	136.55
CV (%)	7.79

Conclusions:

Based on the experimental results, it may be concluded that

i) The effect of the cotton genotypes and fertilizer levels had positive impact on phenological, growth characters, yield and yield attributes.

ii) The inbred variety CB-12, CB-13 and CB-14 with 75% higher than the recommended dose of fertilizer seems to be more suitable for achieving higher seed cotton yield.

And

iii) As the experiment conducted only one year, for better perfection the experiment should be repeated.


THANKS TO
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