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Welcome



ECONOMICS OF CASTOR SEED AND ERI COCOON PRODUCTION WITH SELECTED CASTOR GENOTYPES

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INTRODUCTION

- × India is the only country that produces all the commercially exploited silks *viz.*, Mulberry, Eri, Tasar and Muga.
- × Among the non-mulberry silkworms, tasar and muga feed chiefly on the leaves of forest trees.
- × Attempts to increase silk production by non-mulberry silkworms have been confronted with certain limitations.

RAW SILK PRODUCTION IN INDIA

Type of Silk	MT	%
Mulberry	21,272 MT	74.73%
Eri	4,633 MT	16.27%
Tasar	2,404 MT	8.44 %
Muga	158 MT	0.55%
Total	28,467	100

- × The eri silkworm (*Samia cynthia ricini* Boisduval), also known as 'Ahimsa Silkworm', can be exploited for the silk of commerce with considerable ease.
- × The eri silkworm is the only vanya silkworm species domesticated completely and adopted to indoor rearing all through the year, accounting for in excess of 75% of vanya silk production.
- × Coupled with domestication, its affinity for feeding castor (*Ricinus communis* L.), which is cultivated in large areas in the country exclusively for oil seed production, has rendered eri silkworm rearing convenient.

- *Recinus communis* L. (Castor), a minor oilseed crop can be linked with ericulture to maximize the returns if right choice of castor genotype is made. Castor genotype is made for dual purpose of ericulture and seed production.
- Ericulture has got tremendous scope in castor growing areas without affecting seed production. It is important from the point of view income generating and employment.
- Castor can be exploited both for castor seed and leaf production which in turn helps in eri cocoon production.

Life cycle of Eri silkworm



OBJECTIVES

- ✓ To record the castor seed and eri cocoon production in different castor genotypes.
- ✓ To workout the economics of castor and eri cocoon production.

The background of the slide is a light blue sky with a faint grid pattern. In the bottom right corner, there is a small, stylized city skyline with various buildings and a prominent tower. The text is centered in the middle of the slide.

Research Methodology

METHODOLOGY

1.	Castor genotypes	Eight elite castor hybrids / varieties
2.	Cultivation practices	Recommended package
3.	Observations	Leaf yield & Seed yield
4.	Statistical design	Randomized Complete Block Design
5.	Eri silkworm breed	White - plain
6.	Rearing practices	Recommended package
7.	Observations	Cocoon shell yield
8.	Statistical design	Complete Randomized Design



DCS-9



48-1



Kranti



DCH-177



GCH-4



DCS-32



DCS-85



Local Green

CULTIVATION OF CASTOR

- ❖ Eight genotypes of castor seeds were sown at a spacing of 0.9 m x 0.45 m with plot size of 5.0 x 4.0 m and the crop was raised as per the recommended package of practices under irrigated condition with three replications.

OBSERVATIONS RECORDED

LEAF YIELD

- Leaves were harvested @ 50% defoliation.
- Leaf yield was recorded at 90 days after sowing.
- Leaf yield/plot was calculated using the formula.

Leaf yield (kg/plot) = Total number of plants X Average leaf yield/ plant (kg)

SEED YIELD

Seed yield/ha was calculated by using the formula:

$$\text{Yield/ha (kg)} = \frac{\text{Yield/net plot (kg)}}{\text{Area of net plot (m}^2\text{)}} \times 10,000$$

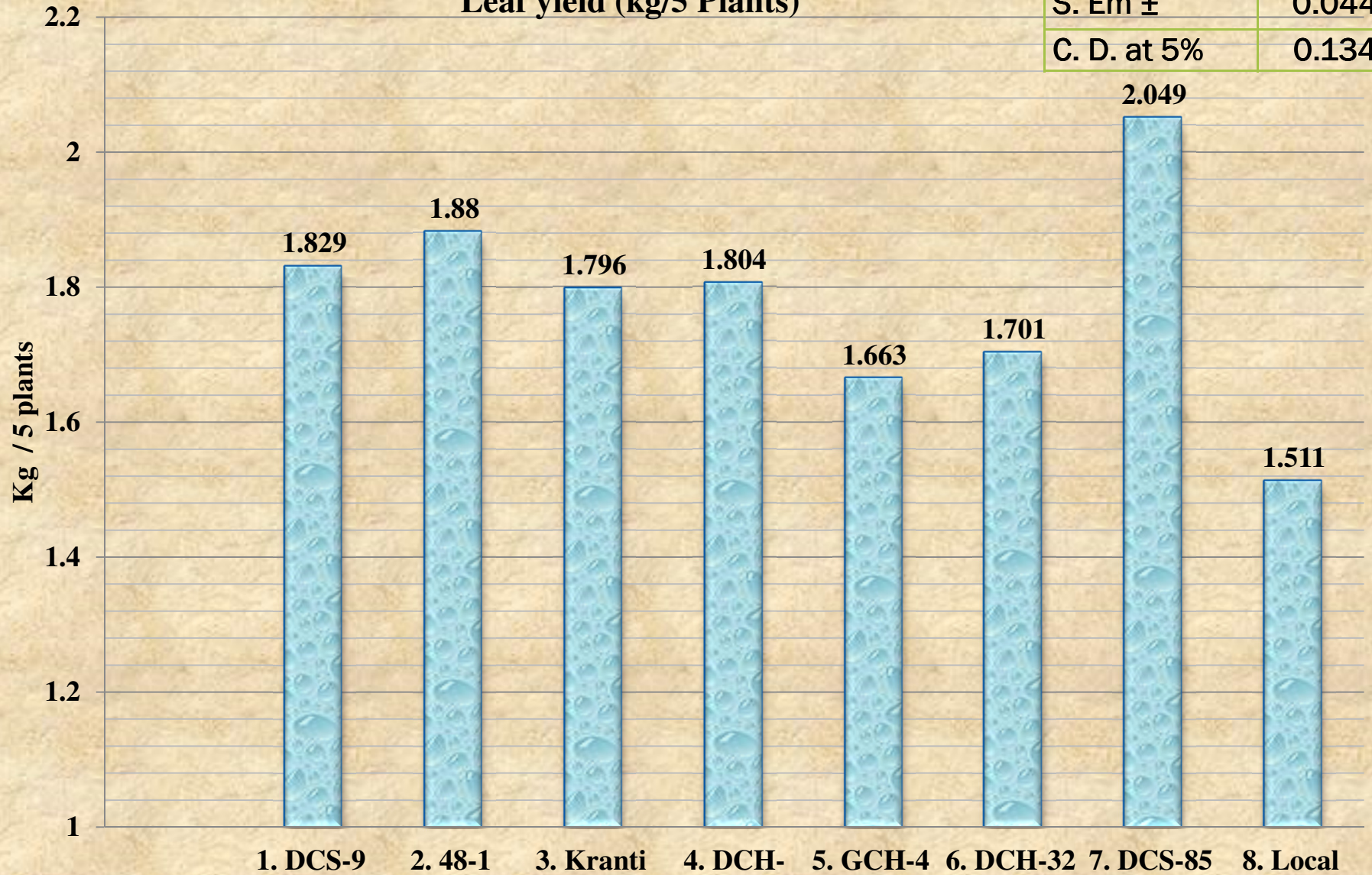
The cost of castor seed and eri cocoon production among the eight selected castor genotypes and returns were worked out by taking the current prices of inputs and outputs.



RESULTS

F-test	*
S. Em ±	0.044
C. D. at 5%	0.134

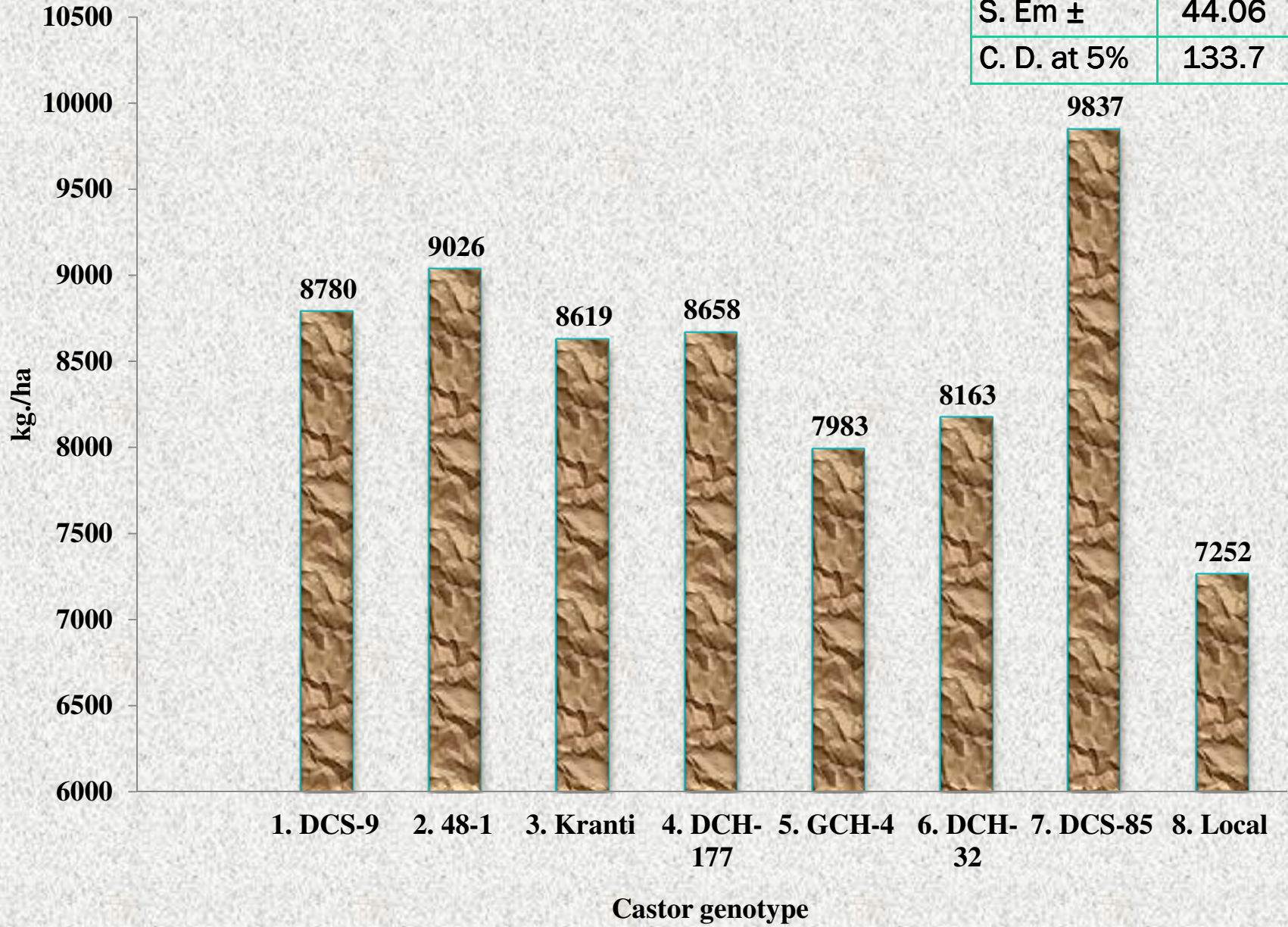
Leaf yield (kg/5 Plants)



177
Castor genotype

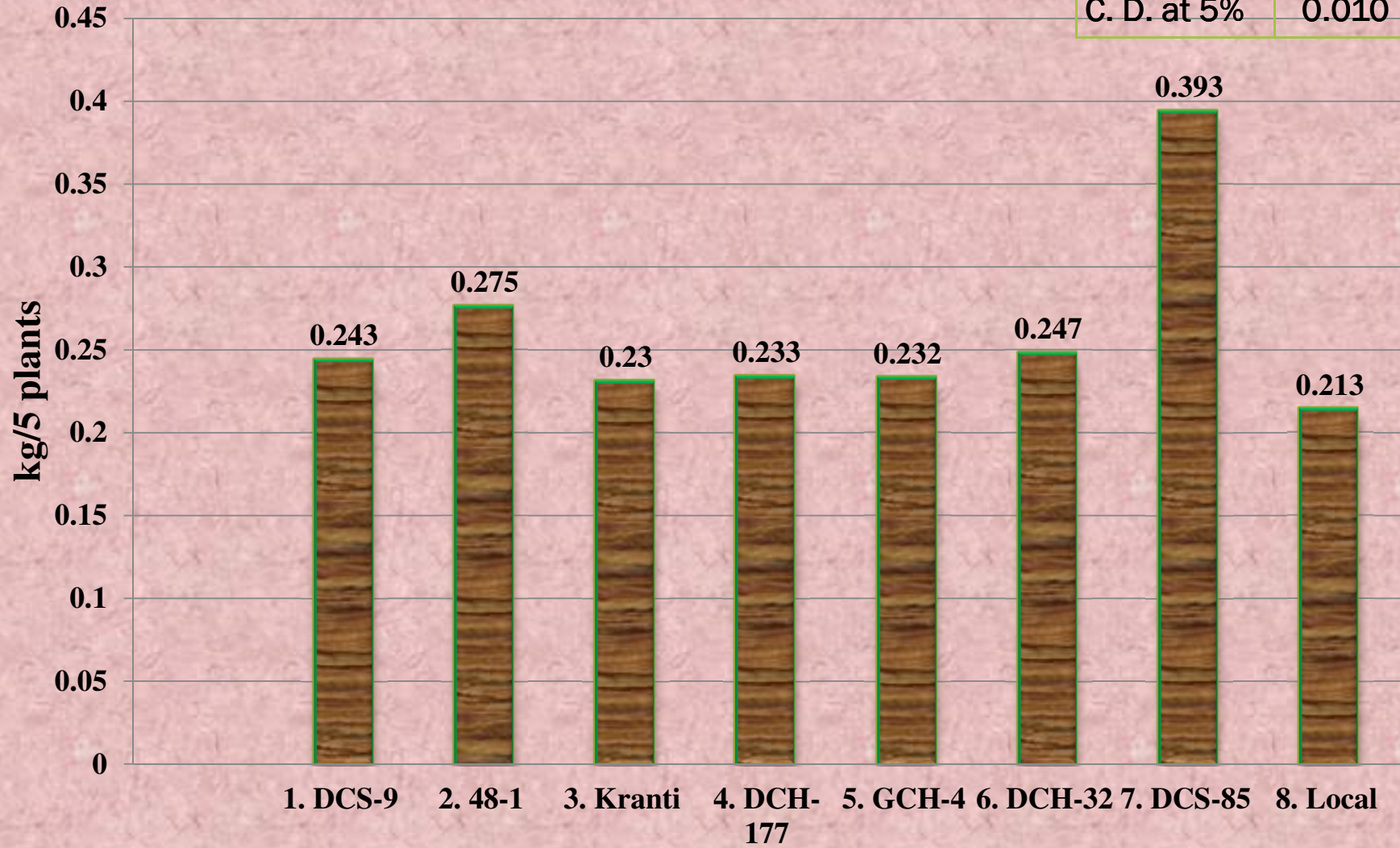
Leaf yield (kg/ha)

F-test	*
S. Em \pm	44.06
C. D. at 5%	133.7



Seed yield (kg/5 Plants)

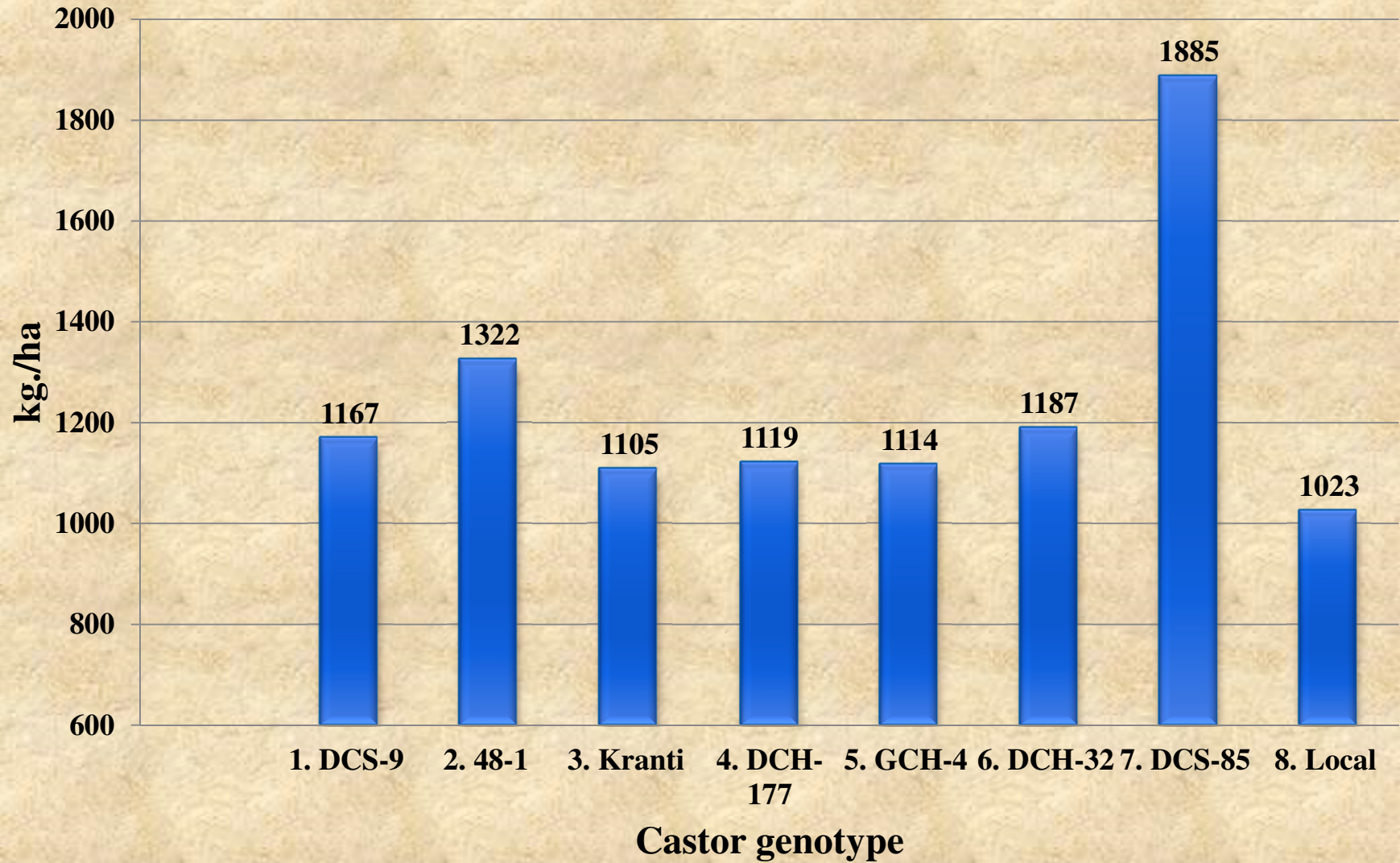
F-test	*
S. Em \pm	0.003
C. D. at 5%	0.010



Castor genotype

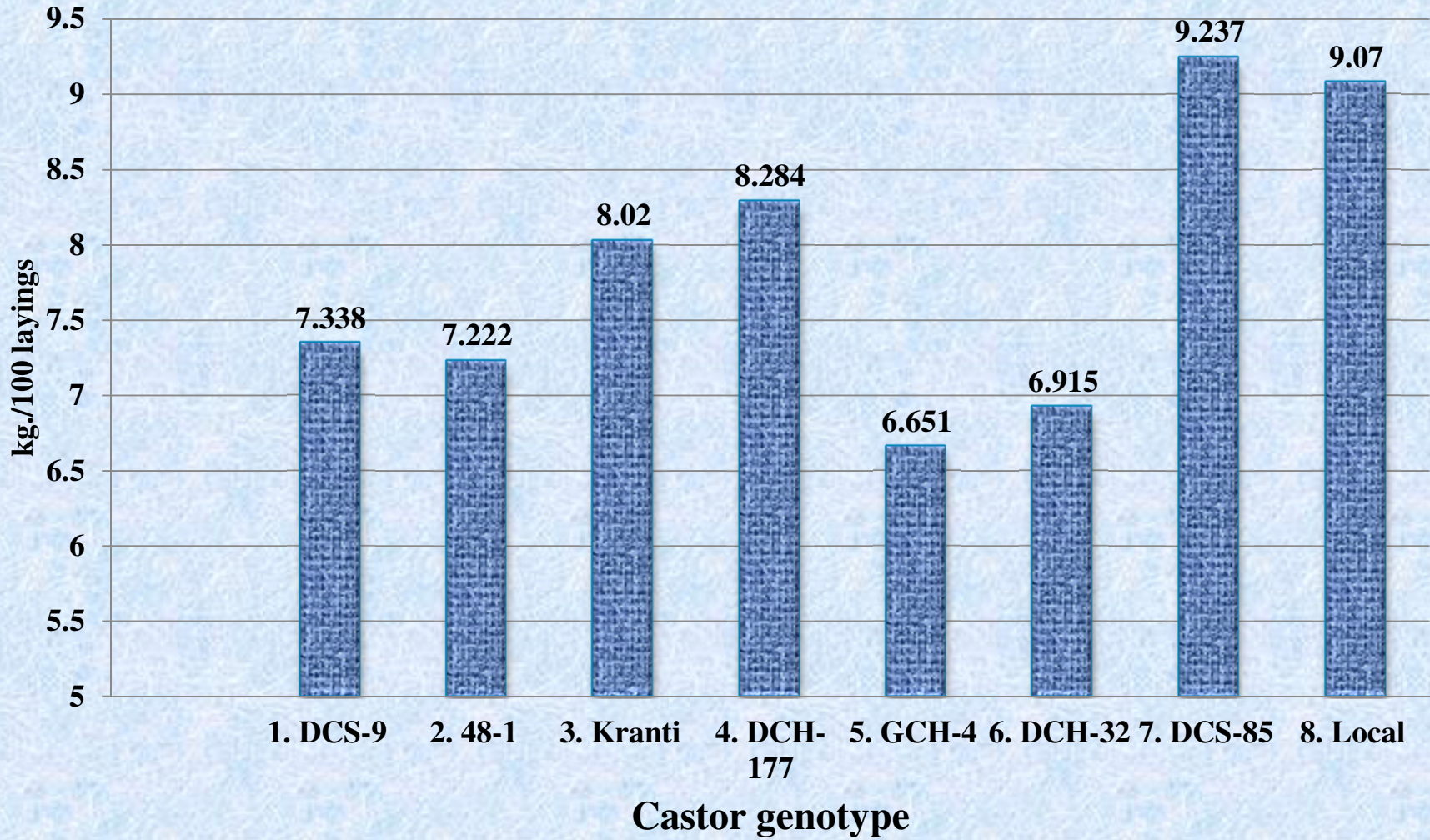
Seed yield (kg/ha)

F-test	*
S. Em \pm	51.94
C. D. at 5%	157.6



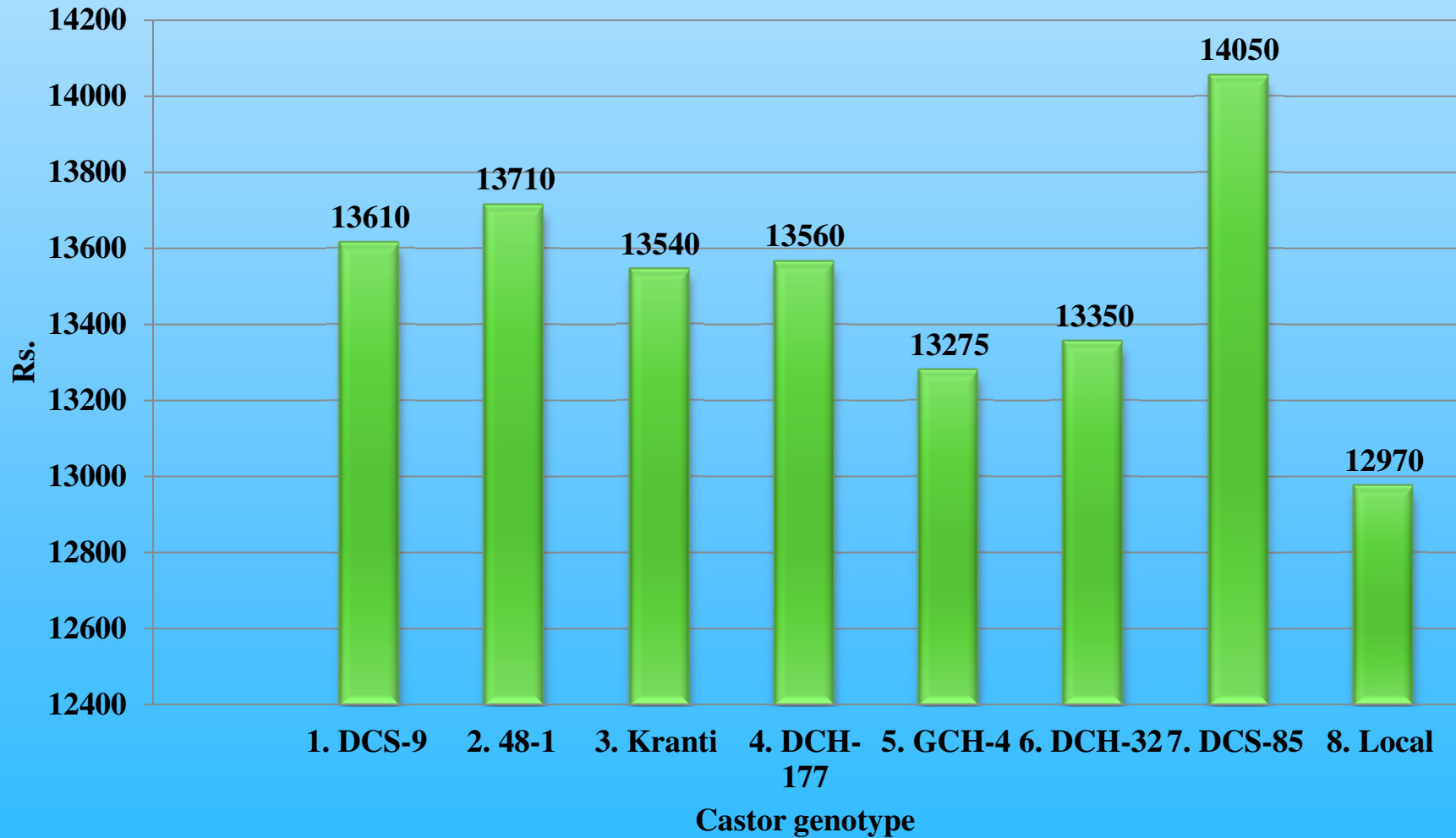
Cocoon shell yield (kg/100 layings)

F-test	*
S. Em \pm	0.069
C. D. at 5%	0.207



Total Cost of Production (Rs.)

F-test	*
S. Em \pm	134.5
C. D. at 5%	212.9



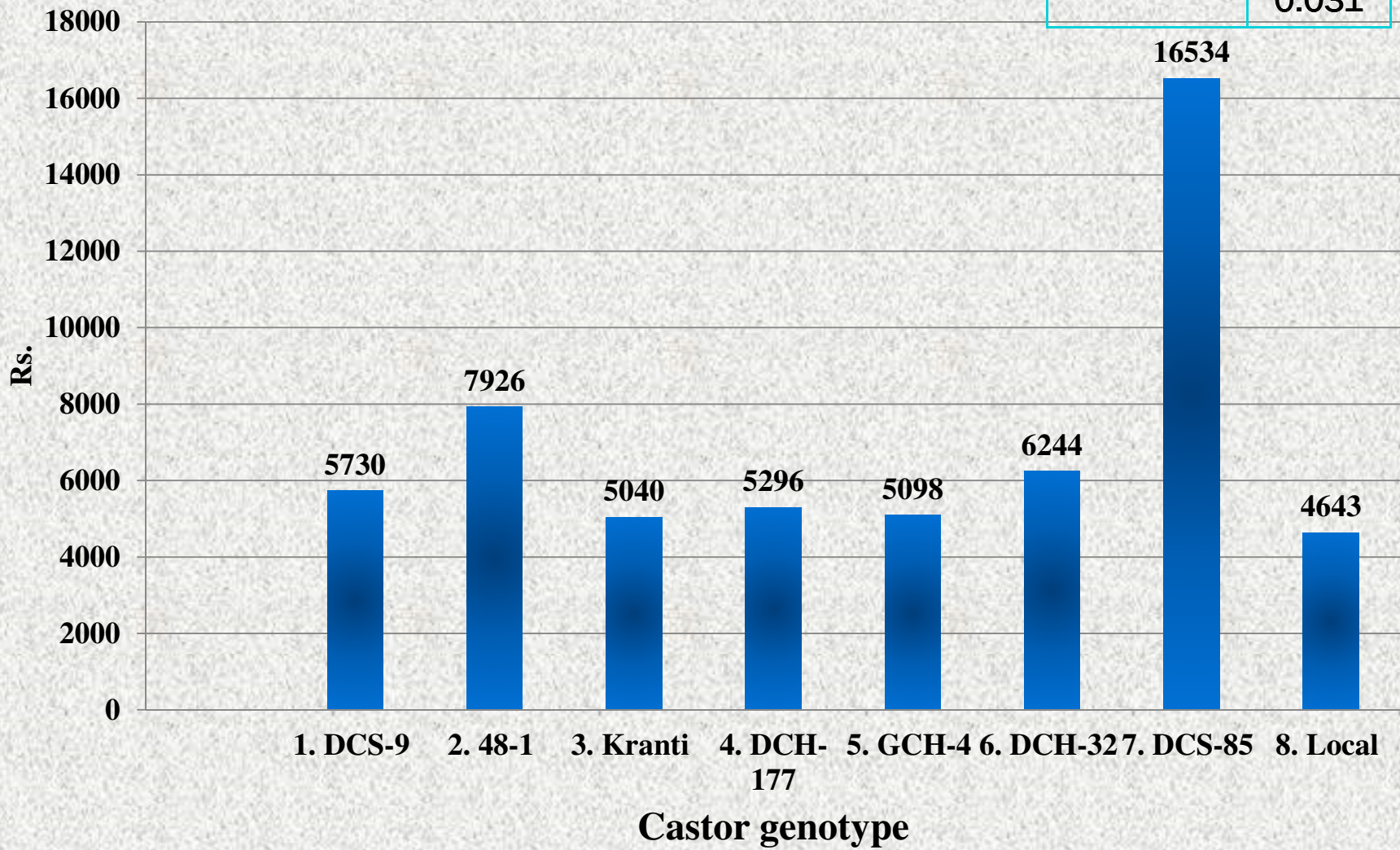
Gross Returns (Rs.)

F-test	*
S. Em \pm	534.8
C. D. at 5%	847.1



Net Profit

F-test	*
S. Em \pm	0.020
C. D. at 5%	0.031



SUMMARY

- The study revealed that, high gross returns were realized by rearing eri silkworms on leaves of DCS-85 (Rs.30,584/ha). The genotypes 48-1 (Rs.21,636), DCH-32 (Rs.19,594) and DCS-9 (Rs.19,340) were found next best and the least with Local genotype (Rs.17,613).
- Profit was more with DCS-85 (Rs.16,534/ ha), However, it was less with Local genotype (Rs.4,643). Significant variation in B:C ratio was observed among selected castor genotypes when they were used for both castor seed and eri cocoon production.
- B:C ratio was more with DCS-85 (1.777:1) followed by that in respect of 48-1 (0.578:1), DCH-32 (0.468:1), DCS-9 (0.421:1), DCH-177 (0.391:1) and Kranti (0.372:1). However, B:C ratio was least with Local genotype (0.358:1).

CONCLUSION

- ✓ It is inferred that castor genotype DCS-85 can be raised under rainfed condition for seed production and ericulture (@ 50% defoliation) to earn more gross return (Rs. 30,584 / ha), net profit (Rs. 16,534 / ha) and B:C ratio (1.777:1).
- ✓ DCS-85 genotype could be used with cost effectiveness for dual purpose of castor seed and eri cocoon production under rainfed situation.

A close-up photograph of a bouquet of daisies in various colors including yellow, pink, red, and magenta. A white card with the words "Thank You" written in a black cursive font is placed among the flowers. The background is a soft-focus green, suggesting foliage. The entire image is framed by a thin, light blue border.

Thank You