

## ADAPTABILITY TEST FOR REARING OF A CHINESE F<sub>1</sub> HYBRID AT PESHAWAR

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### Abstract

Studies were conducted to find out economic characters and fitness of Chinese F<sub>1</sub> under climatic conditions of Peshawar. It was found that the F<sub>1</sub> Hybrid gave very good results. The average cocoon yield calculated for one seed packet was 30kg fresh cocoon with 20.5% as cocoon shell ratio, which is similar to China.

### Introduction

Silk produced by the mulberry silkworms varies a great deal in different breeds, areas and environments regarding its quantity, as well as quality. Every imported hybrid cannot be recommended for silk production in each and every part of a country until its adaptability is studied under the local climatic conditions. It is a common practice in many silk producing countries in the world to test a new hybrid or variety before commercializing or breeding it. Sericulture of course is practised in various regions of Pakistan but traditionally once a year, without knowing the voltinism, region and climate of area of a variety or hybrid. Although we have the two major geographical zones for rearing multivoltine varieties throughout the year under the tropical zone and bivoltine twice a year, in spring and fall under the temperate zone. It is therefore of prime importance to study the adaptability of a particular variety or hybrid to work out the correlation between the new hybrid, environment and the area.

Hussanein, H and F. Charaway in 1960 studied the biology of various imported races in Cairo, Egypt and selected the best suited ones for commercial rearing in the country. Ali-Ali, Aziz et al in 1973 studied the biology and determined the adaptability of a Japanese strain J 124 x C 122 for rearing it under the local climatic conditions for central Iraq. In Poland, Bakunika, Edmund and J. Kremky conducted research on the possibility of commercializing the Oak silkworm, *Antherea pernyi* G.

Keeping the above facts in mind studies were conducted for the first time on one Chinese bivoltine, Hybrid to investigate its fitness to Peshawar climate.

### Material and method

The egg of a Chinese bivoltine Hybrid namely Su<sub>12</sub> x Dong<sub>34</sub> were used to carry out this experiment in spring and autumn 1984 and 1985. The experiment was replicated four times with five hundred eggs in each replication. The eggs were subjected to the following constant temperatures and relative humidities.

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Stage	Temperature °C	Relative Humidity %
Incubation	25	80–85
Ist to 3rd instar	26–27	77.2
Fourth and Fifth instar	26	75
Mounting	26	65–68

Over all cover mode of rearing for the I and II Instar and semi cover rearing techniques was adapted for the IV and V instars. Five feeds were given at regular interval in 24 hours. Bed cleaning and spacing in each instar was done as and when necessary. At maturity the worms were mounted by hand picking on the rectangular wooden and wire netted mountages in the trays. The cocoons were harvested on 7th day of mounting. Various economic characters like practical hatchability, survival rate at larval stage, average weight of single full grown larva, rate of cocoon production, average weight of single cocoon, its shell and cocoon shell ratio were determined. The results thus obtained were compared with the standard results.

### Results and Discussion

Observations on the comparative performance regarding the above mentioned characters are tabulated as under:

Characteristics	Su <sub>12</sub> x Dong <sub>34</sub>			Standards for F <sub>1</sub> hybrid
	Spring 1984	Autumn 1985	Spring 1985	
Hatchability (%)	85.60	85.60	90.00	90–91.5
Survival rate (%)	93.00	90.00	95.00	96%
Average weight of one full grown larva (gm)	2.90	2.40	3.00	3.00
Rate of cocoon production (%)	91.05	90.00	95.00	97.02
Weight of single cocoon (gm)	1.45	1.35	1.5	1.50–1.55
Weight of single cocoon shell (gm)	0.28	0.23	0.29	0.29–0.300
Cocoon shell ratio (%)	20.00	20.18	20.5	20.00–21.00



Average cocoon weight, its shell weight and cocoon shell ratio in Spring 1985 are in close agreement with the standard figures of 1.50 gm, 0.29 and 20.00 to 21.00% although there is slight deviation on lower side in autumn 1985 and Spring 1984.

It is evident from the above data that the results of  $Su_{12} \times Dong_{34}$  are very good and are comparable to the standard results obtained in China. The present study thus shows suitability of this  $F_1$  hybrid for climatic conditions of Peshawar.

#### LITERATURE CITED

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