CHAPTER I
INTRODUCTION

Owing to the green revolution, there has been a phenomenal spurt in the production of vegetable crops in the country (Chaudhary 1972, Prasad and Prasad, 1978). In developing countries like India, vegetables have their paramount importance in the dietary systems of human beings. In facts the role of vegetables as protective food and for supplying minerals and vitamins and adequate quantities of carbohydrates and proteins, needs no special stress. According to dieticians, each adult requires ten ounces (284 gm) of vegetables per day for maintaining normal health (Chauhan, 1965; Nair, 1970; Prasad, 1977, Prasad et al., 1966).

It is estimated that the existing area under vegetables in India is nearly 6.8 lakh hectares with a production of about 50 lakh tonnes. At present, the status population growth creates the food shortage and is becoming an alarming item facing to the Nation where vegetables have the important place (Prasad and Pathak, 1969; Prasad and Nalini, 1983). With the fast growing population, it is doubtful whether the present intake is even 106 gm, a figure arrived at some years ago. This proves the urgency of increasing vegetable production (Jaiswal, 1966; Nair, 1970; Prasad and Prasad, 1977a; Prasad and Nalini, 1983).
With the understandable priority of food crops, increasing the area under vegetable production is not quite a feasible proposition. A large number of factors are responsible for the major development of crops towards the production. The best way to achieve the desired results would be to increase the yields through the use of high yielding and improved varieties (Nandpuri and Singh, 1967; Nath and Randhawa, 1959; Nautiyal and Prasad, 1974).

In fact, the vegetable cultivation in the country has been developing steadily in the last few years but it gained a fresh momentum after declaration of the Emergency when the need was felt to grow more and more vegetables not only to meet the requirements of our fighting forces but also the millions of our civilian population (Singh, 1966; Singh and Mittal, 1966; Khanna, 1966; Prasad and Nalini, 1983).

In India, with a large vegetable population, the uptake of vegetables needs to be greatly augmented by a change in food habits. The vegetable crops occupy hardly 0.1 per cent of the total acreage cropped in India out of which tubers and potatoes occupy about 50 per cent (Thompson and Kelly, 1949; Subramaniam, 1966). The nutritional value
of vegetables varies widely, and depends upon the part of
the plant that is utilised as food. The parts vary in their
water, protein, vitamin, mineral and carbohydrate contents
(Randhawa, 1966; Prasad and Prasad, 1980).

Growing of vegetables is not only important for
providing protective food but their role has to be adequately
recognised as important subsidiary foods playing a more signific-
ant role in the pattern of agriculture. The yields of vegetab-
les can best be increased by providing the most essential inputs
like the use of most productive improved variety by using the
best mineral, the timely and adequate amount of desired cultural practices for high yield, should be applied. Seed especi-
ally means a lot as an input which is the most important factor
for desired production. In fact, a good and healthy seed with
its purity and high germination capacity can assure a good
yield of a particular crop (Thompson, and Kelly, 1949;

The cucurbitaceae family is an important one which
comprises mostly the vegetable crops and forms the largest
group of summer vegetables. There are numerous genus of the
family cucurbitaceae which are well represented in India. They
are used as the sources of carbohydrates when cooked (squash,
pumpkin, marrow, chayote), as dessert or breakfast fruits (watermelon, muskmelon), as ingredients of salads (cucumber gherkin), or as pickles (Prasad, 1977; Prasad and Prasad, 1980; 1981; Sharma, 1982). Many of the vegetables of gourd family i.e. cucurbitaceae such as bitter gourd ash gourd (Benincasa hispida) cucumber (Cucumis sativus L.) are popular among contractors supplying vegetables to hospitals, hostels, orphanages and mother institutions as they are cheap and easy to grow (Kamalanathan, 1967; Prasad and Prasad, 1980, 1981).

It is also known as white flowered gourd and is widely grown all over the country (India) by kitchen gardeners and commercial cultivators and has a special importance during summer when very few green and fresh vegetables are available. In economic significance it has got utmost importance and is used in a variety of ways (Chauhan, 1965; Prasad and Tyagi, 1966). Its young fruits serve as vegetables of both the rich and the poor. It is in fact, more a poor man's vegetables as they are inexpensive and easy to grow during major part of the year.

Many fragments were found that had evidently been used as scoops or ladles. Some of the forms with long necks were used as fishnet floats.
It may also be possible to utilize the leafy wastes of vegetables for the preparation of some useful food products (Thompson and Kelly, 1949; Jaiswal, 1966; Subramaniam, 1966; Singh, 1966; Lal et al., 1967).

The fruits bottle-gourd have a cooling effect and prevent constipation. Being easily digestible, it is recommended during convalescence. Externally the pulp is applied as a poultice and a cooling application to the shaved head in delirium and also rubbed on the flat of the feet and hands to diminish the effect of heat. Wild forms are bitter in taste due to a monoglycosides bitter constituent known as cucurbitacin.

John (1919) and Arthur (1953) have defined the term "morphology" as the form and structure of plants. In the present studies all morphological and genetical aspects for path coefficients have been taken up for having the needful information.

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