

# GUIDELINES FOR INTRODUCING NEW FRUIT CROPS

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We have introduced 25 new fruit crop and many cultivars of them in Sindh during the past 20 years and for the people or organisation interested, we lay down the following guide-lines.

## General requirements.

To introduce new crops it is not a venture for every one, though it is not too difficult, if there is a basic understanding of following factors:

- a) Previous knowledge and experience of agricultural crops in general and fruits and nuts in particular are absolutely necessary to avoid mistakes.
- b) Management ability is an essential requirement as; the venture will require high investment. Small scale operations may not give results, and large scale operation may be an economic failure. Start can be made with 1 to 4 acres per crop but management has to be alert until the first harvest. Personal supervision and involvement is needed at every state and year around.
- c) Knowledge can be gained from books and literature provided the person is well equipped with previous knowledge of agriculture and has management ability discussed above. However experience is best teacher. One has to teach oneself.
- d) Ability to understand operate horticultural machinery and horticulture operations when performed manually.
- e) Understanding of economics. Modern farming involves high investments. Farmer must understand at least 10 years projection of costs and returns, before making up his mind.
- f) Understanding of marketing. For any new product, farmer has to be sure of market position and acceptability. Any product can sell if it is good. Karachi City can absorb any new fruits and nuts, but when production exceeds demand, prices will fall and if efforts are needed to sell a product out-side Karachi; due to general conservatism of people marketing can turn into a difficult and losing job.

g) Study of export potential. There is great potential for export of many fruits and nuts, but channels need to be established, before an economically reasonable start is made.

h) Site environments have to be as good as possible. Any draw backs will lead to lower production. One therefore has to select an area for horticulture production, based on:

- \* Good well drained fertile soil.
- \* Reliable good quality water supply. Tube-well water may be brackish. Canal closures if long can result into damage to a crop. For non-perennial area ground water may be used occasional but very limited use of brackish water, may save some crops, but it can be injurious to other crops.
- \* Sunlight is adequate in Sindh but some crops may not be able to stand excessive light. They can be raised under shed.
- \* Area is to have freedom from frost or crops have to be frost tolerant.
- \* Proximity to market can increase returns and reduce management problem.

i) Tables below reflect on some important factors for consideration of growers. Similar data can be collected for any crop.

j) Likely returns can be worked out from projected yields and expenditure. This task can be done for farmers by specialists.

k) Large reserve of funds and ability to raise funds is an important part of the management. Since agriculture yields depend upon climatic factors, yields will fluctuate between 40 to 100% with average at about 65-70%. Grower has to understand this and be ready for funds in case of low returns during certain year.

l) Exchange of knowledge locally can be possible, if a quarterly journal with year book is published. The experience of all new entrepreneurs can thus be pooled together, as a permanent record. This will catch attention of new growers and create competition of excellence. Such a thing has never been explored in Pakistan.

m) Crops have to be staggered, so that management as well as employees are equally busy year around for most economic venture.

- n) For a holistic farmer it is essential that before selecting horticultural site, soil may be analysed and if it is deficient, programme to improve before planting must form a part of plan. Soil improvement can then continue side by side with cultivation year after year. For high returns, soil as well as plant leaves are to be analysed, for micro-nutrients like iron, copper, zinc, manganese, boron and molybdenum. If these deficiencies can be fully improved, yields can be doubled.
- o) Farmer also has to understand his soils, which when mixed with water can be rolled between first figure and thumb. Loamy soils can be ribbed to 2.5 cm, clay loam to 5 cm and clay to 7.5 cm. First one is the best. The second one can be improved. The third one is difficult to improve, except for some crops. Sindh has all 3 types of soils.
- p) Horticultural crops need about 2" of water a week for evapotranspiration in summer months (April to August) in Sindh. Usually 50% more water is applied and this extra water is allowed to seep and thereby reduce accumulation of salts in the soil. Even water of the Indus river canals has 150-250 ppm of salts per million parts of water. Some surface evaporation of water takes place as if field was a pond. Pan evaporation for April to June is about 3 inches a week for most of Sindh.
- q) Physical access to area by road, transport of produce to market is first essential. If area is prone to flooding and closing of roads it may not be suitable, for farming of high return crops.
- r) Agricultural operations are labour intensive, critical of time and labour supply has to be readily available. A labour housing colony at the site is not only attraction for labour, but is the only insurance against labour shortage.
- s) Farm Location: has to be accessible all the time. The top management should be able to get to site once or twice a week.
- t) Extra labour may be needed for harvest. This needs to be recognised and organised sufficiently early in the season.
- u) Farm roads, houses, water supply system, haulage of product, temporary storage at site, transport of equipment (Manual or powered), housing, layout of land, watercourses and each type of fruit plants, has to be planned before hand.
- v) Personal aptitude: Personal aptitude may be thereto introducing a new crop, but its negative aspect is over-confidence and not consulting specialists and allows one self to be misguided. On other hand there may be prejudice or contempt for specialists. This will invariably lead to wrong decisions and failures.
- w) Crop management technique/grafting/budding/layering/tissue culture, fertiliser requirements, water needs, inter-cultivation, weed control disease control, timely application of all inputs harvesting period post-harvest technology and year around operations calendar is to be known.

- x) Crop manipulation is latest technology of controlling tree canopy growth, root growth at will, bringing early flowering, delaying flowering, bringing early harvest or postponing harvest for couple of weeks, convert alternative varieties into regular and many other manipulations with aim of escaping diseases, bring fruit to market, when prices are high, increasing number of trees/acre, producing hedge row of fruit trees or vase shape for better management and yield and pruning for yield enhancement are new technologies for Pakistan, but it is possible to manipulate, if management is able, alert, and technologically strong.
- y) Marketing needs Standardisation of quality and size of fruit, fixing the date for first harvest of a fruit tree, fixing types and sizes of boxes, and cartons, for local use and export. Government has to do this.
- z) Minimum prices have to fixed so that grower gets about 50% of retail value.