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# **D**esigning A Production Budget For A Saskatoon Orchard

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## **Introduction**

Potential growers of saskatoons must give serious consideration to the high costs of orchard establishment, and the minimum 4 to 5 year delay in obtaining any return on their initial investment. Budget projections are necessary to summarize the costs of an orchard operation and to estimate returns. Budget projections are based on an estimation of projected incomes, capital investments and operating expenses.

The gathering of data is the most important step in a developing a budget projection. Unfortunately, accurate estimates of yield and production costs are often lacking for saskatoon orchards, making it difficult to develop an accurate budget projection. Consequently, a number of assumptions must be made. Budget projections for saskatoon orchards are sensitive to yields obtained, method of harvest, loss of potential yield and marketable yield, and method of marketing. As a result, the amount and timing of return on investment can vary substantially.

Potential growers can consult the following publications which contain budget projections for saskatoon orchards, but these projections should be used as guidelines only.

1) Economics of saskatoon berry production. Farm Facts Bulletin, Saskatchewan Agriculture and Food, and Saskatchewan Rural Development. Regina, SK, 1990.

2) Commercial Saskatoon Berry Industry. Ag-Ventures Agriculture Business Profile. Alberta Agriculture, Food and Rural Development. Agdex 238/830-1. June 1996.

3) A Consensus of costs and returns for a 10 acre saskatoon berry production enterprise in the Peace River Region of Alberta. G. Monner and G. N. Chaudhary. Alberta Agriculture, Food and Rural Development, Economic Services Division, Production Economics Branch. Publication #288. October 1996.

Potential growers must develop budget projections for their own operations based on their experience, anticipated yields, production costs and market prices, and must be able to adjust these projections on an ongoing basis. The use of spreadsheet software on a microcomputer is an appropriate and powerful tool that can be used to investigate various production scenarios and assumptions.

The objective of this factsheet is to provide an overview of what factors a

grower must consider in developing a production budget for a saskatoon orchard.

## **Factors To Consider When Designing A Production Budget**

Budget projections are comprised of three main categories: a) projected income based on technical data concerning the orchard; b) capital investment; and c) operating expenses.

### ***Projected Income***

The technical data required include the area of the orchard, the total number of plants per hectare, expected yield per hectare, anticipated price per kilogram of fruit, and type of operation (U-pick, machine-harvested, owner cleans and bags fruit, or not).

Accurate figures for expected yields and anticipated prices are critical to accurately estimate returns, however, both figures may vary substantially from year to year. Current data indicates that average yields for mature plants (6 to 7 years old) are approximately 3,300 to 4,500 kg per hectare. The potential maximum yield appears to be 13,500 kg per hectare. Yields may or may not remain constant from year to year. Current prices for saskatoon fruit vary from less than \$3.30/kg (U-pick) to \$6.60/kg (pre-picked). Processors pay from \$3.30/kg to \$4.40/kg fruit. These prices are approximate only.

### ***Capital Investments***

Capital investments include

everything necessary to establish and operate an orchard. Capital investments include refrigerated storage and other buildings, machinery (truck, tractor, transplanter, cultivator, harrow, mower, pesticide sprayers, harvester, fruit sorter and cleaner), other equipment (for pruning, harvesting, maintenance, safety), irrigation system and dugout, land preparation, fencing, and mulches. It's obvious that capital investments may vary considerably depending on the type of orchard operation to be run, and what the grower already has in their possession. Data concerning capital investments include the purchase price, useful life, depreciation, and interest on loans for purchase.

Used machinery is a fraction of the cost of new and usually will be suitable, although some modifications may be necessary.

The initial cost of a drip irrigation system ranges from \$1,800 to \$3,000 per hectare (not including the cost of equipment used to supply water to the site, or chemical injection equipment). A good quality drip irrigation system will last for many years if properly maintained.

In areas not located near a river or lake, dugouts may be needed to supply water for irrigation. Government subsidies may be available for the construction of a dugout.

Depreciation is the reduction in the market value of a machine due to wear, obsolescence, and age. This cost is a tax deduction, and can be used to decrease net farm income, thus reducing taxes paid. As well, depreciation can be used as an

indication of replacement cost. Each year a machine depreciates, the amount of depreciation should be put into the bank for purchasing a replacement for the machine.

Land preparation may or may not be a major expense. Costs of preparation may include cultivation and spraying, as well as rock picking and land leveling.

### *Operating Expenses*

Operating expenses consist of fixed costs and variable costs. Fixed costs include the cost of plants, property taxes, and possibly land rental. Variable costs include labour, inputs, fruit losses, overhead, marketing, and unexpected expenses.

Saskatoon orchards require over 2,000 plants per hectare; the exact number varies with the dimensions of the orchard, and distance between the rows. The cost of saskatoon plants varies from less than \$1.50 to \$5.00 each. It is reasonable to expect a 10% loss of plants during the first two years of orchard establishment and these plants will need to be replaced. Consequently, a grower's investment in plants can be substantial.

All land has a property tax attached to it. The amount varies with the assessment of the land and the MIL rate. In some cases, the cost of land rental may need to be taken into consideration.

Labor is one of the greatest expenses in fruit production. Planting, pruning, spraying, weed control, irrigation, collection of samples for soil and leaf tissue analyses, harvesting, sorting and cleaning, marketing

and maintenance are all included in labor. Estimates of the hourly costs of labour and of the total number of hours required vary. Some studies suggest that 350 to over 600 hours per hectare per year are required. If the farm is a corporation, management or supervisory salaries may have to be paid. As well, some growers may wish to draw a salary before waiting until the end of the production year.

Orchard inputs include herbicides, fungicides, insecticides, water, fertilizer, equipment operation and maintenance, containers, packaging, and transportation.

Fruit losses will occur during harvest, sorting and cleaning. Handpicking usually results in about a 5% loss of fruit. Machine harvesting may result in a 15% loss of fruit.

Overhead costs include electricity, heating and water. These costs will vary with the size of buildings and machinery, and the extent to which they are used.

Marketing costs vary depending on the type of advertising. For example, newspaper ads are less expensive than TV ads. Transportation costs also may be incurred. Telephone calls and faxes are a part of marketing often overlooked. Calls to potential buyers can become quite costly.

Some unexpected expenses will occur throughout the production year. Extra labor, equipment rental and repairs may be needed.

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