Nursery production: overview

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This publication provides general information about commercial greenhouse and nursery operation in Idaho and is intended for prospective growers. Additional information is available from the University of Idaho Cooperative Extension System in your county. Particularly helpful publications are listed in the "For further reading" section at the end of this article.

Nursery stock comes in all shapes, colors, and sizes, from small bedding plants to large trees. Each crop has its own particular needs in terms of soil, climate, and management. Because of diverse topography, soils, and climatic zones, Idaho has many potentially good nursery sites. As shown in Figure 1, farm gate sales of Idaho nursery stock increased from $3.6 to $57.6 million between 1973 and 1993. Success of a nursery enterprise is far from automatic, however. Nursery crops are labor and management intensive. The time from planting to harvest ranges from a few months for bedding plants to as many as 12 years for certain trees.

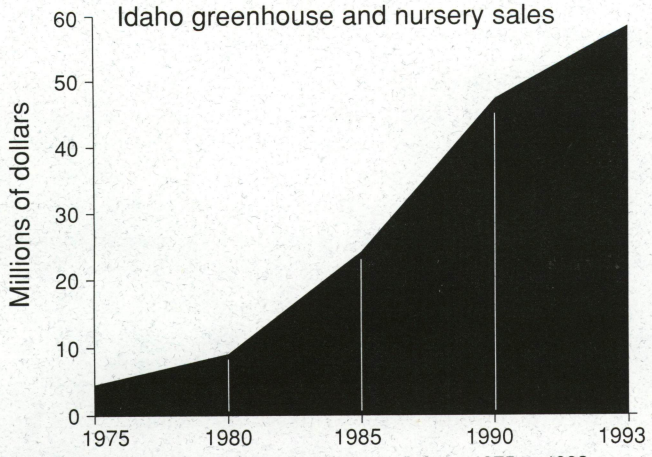

Fig. 1. Farm gate sales of Idaho nursery stock from 1975 to 1993. Data taken from *1980 Idaho Agriculture Statistics* and *1994 Idaho Agriculture Statistics*, issued by the Idaho Department of Agriculture.

Commercial success depends largely on selecting and preparing an excellent site and planting the right crops. Because there are many different kinds of nursery crops, no one site is "best." Field crops usually grow best on well-drained soil that has good nutrient and water-holding capacity. Most crops require at least 18 inches above hardpans and high water tables, and 24 to 36 inches of rooting depth is better. For seedlings and trees that will be sold bare-root, light sandy soil is best. For trees and shrubs that will be dug and sold ball-and-burlap, you will need a well-drained loam that will hold together during digging and shipping. Some nursery crops can be produced on alkaline sites (soil pH greater than 7.0), but most grow best on slightly acid to neutral soils (pH 5.5 to 7.0). Depending on the crop and site, you may need irrigation water.

Where soil conditions are unfavorable for field crops, you can grow plants in containers, either outdoors or in greenhouses. Container stock, however, requires frequent irrigation, is susceptible to wind damage, and often needs winter protection. Container nurseries are typically more labor and management intensive than field production nurseries.

Management

Producing quality nursery crops always requires intensive management. You need to know the physiological needs and proper cultural practices for your crops. You must also gain skill in identifying and controlling pests, diseases, and weeds. If your business is going to be successful, you have to run it like a business. You must understand financing, cash flow, business management, and marketing. Attention to detail and meticulous record keeping are critical. You will also need to understand and comply with state regulations for producing and marketing nursery stock. The process is complex in every aspect.

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Costs and returns

Start-up costs vary according to the type and size of the nursery operation. If you already own the land and implements, you can probably diversify part of an existing farm to raise field-grown conifers for around $10,000. Starting a large greenhouse from scratch runs into the hundreds of thousands of dollars or more. Besides land, equipment, and plant materials, raising nursery stock requires plenty of labor. Changes in minimum wages, taxes, and worker protection laws have increased labor costs in recent years.

Before purchasing land, equipment, or plants, you should develop an enterprise budget. This step helps ensure that you have enough resources not only to successfully establish and operate a nursery, but also to survive a poor harvest. For bedding plants, you may develop a positive cash flow the first year, although you'll typically have the expense of building and operating a greenhouse to consider. Tree seedlings sold for reforestation projects or as planting stock to other nurseries are typically marketed in 1 to 3 years. Slow-growing species, however, may require 5 years or more to reach the market. Deciduous trees and shrubs typically take at least 2 to 3 years to reach harvest maturity, but larger stock may take as many as 5. Conifers usually take from 3 to 12 years to mature, depending on size and species. While your crop is growing, you must cover the cost of establishment and production using other sources of funds. Because nursery operations are very diverse, describing all of the expenses involved in production is beyond the scope of this publication.

Greenhouse production requires a greenhouse structure, irrigation system, and containers. Many greenhouse operations also require heating, cooling, and lighting systems. The costs of greenhouse establishment and operation vary greatly according to the technology. Some businesses may be small operations that depend strictly on hand labor. Others may use large, fully automated greenhouses.

Field operations are simpler than greenhouses, but not necessarily cheaper. Besides land, you will need tractors and equipment to plant, cultivate, and harvest the stock. Many operations require irrigation equipment, deer fences, and storage buildings. Roads that allow harvesting year around and even during inclement weather are critical. When planning your operation, also consider the cost of complying with labor protection and pesticide regulations.

Some growers shorten the period of negative cash flow by interplanting quick-growing crops in fields of more valuable but slow-growing stock. You might, for example, plant mugo pines between Colorado spruce trees. The small mugos are harvested in 2 to 5 years, about the time the spruce begin crowding them. Digging and selling the mugos creates space for the spruce and provides income. The spruce are harvested about 8 to 12 years after planting.

The amount of stock you produce per acre and the price you receive depends on the type of crop. You might grow half-a-million seedlings or more per acre and sell them for $0.10 to $0.20 each. On the other extreme, you might produce 1000 spruce trees per acre and sell them for $80 to $100 each.

Marketing

Idaho's nursery industry experienced remarkable growth between 1975 and 1993, as shown in Figure 1. One key to that success was the early decision by growers to produce high-quality, cold-hardy stock.

During a recent study, researchers from the University of Idaho examined the barriers to establishing and operating a specialty farm. We found the single greatest challenge to be marketing. Getting the capital to start and run an operation came next, followed by a shortage of skilled labor. Growing the plants is often the easiest task in an enterprise.

Marketing is an ongoing process of research, forecasting, and analysis. You should begin the marketing process before you pick a site or decide what to grow. Research how and where you will sell your stock because these decisions will influence your choice of location and crop varieties. You must select crops that are in demand. No matter what else you do, if you cannot sell your products at a profit, your business will fail.

If you plan to direct-market to retail customers, your nursery must be easily accessible and close to a population center. If you plan to ship your stock to wholesale buyers, you have more flexibility when it comes to site selection.

You also must decide if you have the resources and skills necessary to produce quality crops and get them to the market at competitive prices. You should construct an enterprise budget that projects expenses, income, and cash flow. If you have little or no farming experience, you may want to hire a farm manager, at least on a part-time basis, to manage the day-to-day operations. As you gain experience and skill in your crop, you can assume more responsibility in producing it.

In regard to selling, you must identify and contact prospective customers and convince them that they should buy stock from your nursery rather than someone else's. Although the potential for new nurseries is excellent, be aware that the industry is highly competitive.

Direct marketing — Few large production nurseries in Idaho sell directly to the public. Most growers prefer to sell their plants to retail nurseries, garden centers, brokers, or landscapers. Opportunities do exist for retail production nurseries however, particularly near population centers. Popular direct retail items include bedding plants sold to local gardeners. These nurseries often begin producing flower and vegetable seedlings during late winter in greenhouses and sell most of their stock in early spring.

Direct marketing may be as simple as selling stock at a farmers' market or having a retail outlet on your farm. When choosing this marketing strategy, be sure that local laws will allow you to sell directly from your farm.

Some nursery operators primarily enjoy selling to and interacting with hobby gardeners and are not particularly enthusiastic about growing their own stock. If you feel this way, consider starting a garden center where you buy your stock from other nurseries. Focus on what you enjoy and do best.

Wholesale marketing — Most production nurseries in Idaho sell to wholesale buyers, many of whom are located in other states. There are several advantages in owning a wholesale rather than retail nursery. First, you can concentrate on one or a few crops, whereas in a retail nursery, you generally have to carry a wide variety of products. Focusing on one or a few varieties allows growers, particularly those who are new to nursery operation, to produce higher quality crops. If you are new to growing nursery stock, keep your operation small and simple to begin with. Once you become proficient in growing and marketing, you may want to expand.

In a wholesale operation, you sell to nursery stock brokers, retail nurseries, landscapers, and public agencies. This market allows you to sell large volumes of stock at once, often by the truckload. Producing many diverse crops is more management intensive and often more expensive than producing a single crop. Focusing on a single crop may allow you to keep your cost per plant more competitive.

Risks

Weather plays a major role in nursery production. Severe winter temperatures or untimely frosts can damage or kill a crop. Hot, dry conditions during the late summer and early fall can delay or prevent fall digging of nursery stock. Extended snow cover, frozen soil, or prolonged rains can delay or prevent spring digging. Since nursery stock is primarily for ornamental use, its appearance must be excellent. Stock damaged by pests, diseases, environmental stress, or poor growing techniques may be impossible to sell. Weeds can overrun a nursery field, impeding production. Pests, diseases, and weeds create problems in meeting the phytosanitary requirements involved in shipping nursery stock.

Labor, marketing, and transportation represent risks as well. Some nursery crops, such as bedding plants, have a narrow harvest window and must be sold as soon as they are ready. A labor or trucking strike can leave your crop sitting in the nursery or on a loading dock. Greenhouse crops require constant care and can be quickly damaged or killed if irrigation, fertilization, or other care is interrupted. Production of a crop by other nurseries can cut into your profits. Nursery customers are fickle, and a species or cultivar that is popular when you plant may no longer be in demand when your stock is ready for harvest.

Minimize your risks. Planning and marketing well in advance will reduce risks associated with harvesting, transporting, and selling a crop. Proper site and crop selection, site preparation, and diligence in carrying out cultural operations will reduce crop losses.

You still want to grow nursery stock?

Okay, you still want to grow nursery stock? So what do you do now? First, start small. New specialty farmers often start with too much acreage and too little knowledge and experience. If you lack experience in *commercial* nursery production, start with no more than about 1 acre. Home landscaping experience will not fully prepare you for the intense management needed for even a small commercial operation.

After you gain some commercial experience, if you still consider commercial nursery production feasible and desirable, you will probably have developed the skills you need to successfully manage additional acreage. You may also find that farming isn't for you. Discovering this fact with a small investment is better than with a large one.

Diversification into nursery stock from another crop by an experienced farmer who already owns much of the needed equipment is more likely to be successful than starting from scratch. The need to start small and gain experience with nursery stock before becoming a full-scale operation, however, is still critical.

For further reading

Beginning in the Nursery Business. J. Pinney and R. Pinney. 1985. American Nurseryman Publishing Co. Inc., 111 North Canal Street, Chicago, IL 60606.

Nursery Management: Administration and Culture. 3rd ed. H. Davidson, R. Mecklenburg, and C. Peterson. 1994. Prentice Hall, Englewood Cliffs, NJ.

Managing a Greenhouse. R. Langhan. 1990. Halcyon Press, Ithaca, NY.

Publications and Organizations for Nurseries, Landscapers, and Groundskeepers. CIS 950. D. Barney and J. Guenthner. 1992. Agricultural Publications, Idaho Street, University of Idaho, Moscow, ID 83844-2240.

Specialty Farming in Idaho: Site Selection. EXT 744. D. Barney, T. Finnerty, and C. Mancuso. 1992. Agricultural Publications, Idaho Street, University of Idaho, Moscow, ID 83844-2240.

Other publications on horticulture, general farming, and business management are available from the University of Idaho College of Agriculture. To find out about these, contact the University of Idaho Cooperative Extension System office in your county or write to Agricultural Publications, Idaho Street, University of Idaho, Moscow, ID 83844-2240 or call (208) 885-7982.

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The Alternative Agricultural Enterprises publication series was supported by a grant from the Northwest Area Foundation, St. Paul, Minnesota.

Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, LeRoy D. Luft, Director of Cooperative Extension System, University of Idaho, Moscow, Idaho 83843. The University of Idaho provides equal opportunity in education and employment on the basis of race, color, religion, national origin, gender, age, disability, or status as a Vietnam-era veteran, as required by state and federal laws.

300, March 1995 Produced by the Agricultural Communications Center 50 cents

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