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Propagation and Production Changes at Johnson's Nursery

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INTRODUCTION

It's all about opportunity!

In the upcoming years, every company will be facing business challenges, following the trends of just about all the other older industries. Sales at our company are growing year over year since the recession, and our own production can hardly keep up. Some of our local business competition disappeared during the recession.

Industry Trends

High product demand and a small labor pool has forced us into a state of increased efficiency, we must prioritize activities to make the most money with the folks we have. We only take the best work and only produce the plants we're best at growing.

Other local nurseries we deal with have done similarly and we are developing more distinct product lines and methods that separate us and keep our individual values higher than if we were competing in the exact same category.

Another trend that might take a strong hold on our industry would be the "Amazon model" of business, where plant producers can list all of their inventory together and customers can immediately see all of the products and their variations in once spot (online) and make a choice of where to get their goods.

JOHNSON'S NURSERY FOCUS

Johnson's focus traditionally has been larger ball-and-burlap trees and shrubs, and we have a strong presence in that market. But where does a smaller container grower like me fit in?

Johnson's propagation department was founded with the idea that if we couldn't get it, we would grow it ourselves. In the 1980s, the focus was on trees and shrubs that our company had difficulty sourcing.

The 1990s was a time of increased focus on Johnson's specialties. This included many new plants developed by Mike Yanny, who is known for his work on Wisconsin-hardy

plants in many genera including *Carpinus*, *Viburnum*, and *Malus*.

It was in the later years that a container growing portion was added and we began to grow many of the popular container plants used by landscapers. These commodities were certainly easy to produce, but we were only slightly more competitive than buying in a finished plant from one of the huge container plant factories. These include Bailey's and Midwest Groundcovers, which are both located within the Midwest.

By 2010, the propagation department had grown to include the production on perennials, shrubs and trees from quart sized pots to #10 containers. And our field production included whip trees and bare root shrubs produced primarily for our own use in larger product sizes.

Right around this time our company was feeling the pressure of the recession. New development was down, city budgets were trimmed, and many salaries were frozen. Positions were eliminated. Some of our local competition went out of business.

Mike Yanny, essentially the founder of the propagation department at Johnson's, formed his own business designed to remain in close contact with the nursery and handle all the plant selection aspects of the business.

CHANGES SINCE 2015

I was promoted to managing the department in 2015. Since taking over the department there have been significant production changes. More native plant production, increased container tree production, increased interest in grafting specialty plants and production of plants in the winter months.

At Johnson's approximately half of our workforce was laid off for the winter. As it became more difficult to keep good people that would tolerate a 3- or 5-month layoff, an increased need was seen for productive winter work. This need combined with the fact that Wisconsin currently has many tree removals due to emerald ash borer, and that many tree care companies doing the removals also buy from us. This resulted in a pretty big opportunity.

We decided to try and grow some plants in winter. The first crops we decided to try ended up being vegetables and fruits (Fig. 1). The theory behind this was that it was going to be a nice source of revenue and marketing exposure for us in winter. We installed a large wood burner that supplied hot water to four growing structures. Two of these structures were for production of evergreen and hardwood cuttings along with some evergreen grafts. The other two were going to be the fruit and veggie houses, with an emphasis on greenhouse grown, vine-ripened tomatoes. We grew some mean tomatoes! They were selling close to $5 per pound at some local grocers and we had the production schedule designed to supply a steady flow with staggered plantings and ripening times. Our little greenhouses were supplying 190 pounds per week for about 4 months.

Figure 1. Produce grown in our greenhouses during winter.

A financial analysis was done on our little experiment, and we were surprised to learn that our limiting factor was mostly electricity and less than expected demand. Even though we did a great job growing these things, we weren't going to be profitable at the scale we were at. At a larger scale, the models looked better, but the decision was made to halt tomato and vegetable production and go back to our roots — propagating woody ornamentals for our own production. We modeled out growing liners in the greenhouses as a source of savings instead of a source of revenue.

Our nursery had traditionally been an outdoor grower, so there wasn't a great depth of knowledge when it came to greenhouse growing. We decided to focus on plants we had trouble with in the past. Many of these species were small-seeded ones that we've always wanted to grow but were difficult to grow in our outdoor seed beds. These included birch, *Cercidiphyllum* tree, *Viburnum*, *Ginkgo*, *Magnolia*, *Staphylea*, and many perennials. When we added up the value of our ornamental plant starts, it landed very close to a $12,000 savings in yearly plant purchases (Fig. 2).

Other projects include seed grafting of *Aesculus* in the very earliest part of spring (March). Hardwood cuttings collected in January have resulted in some pretty nice plants as well. As we are growing many natives from seed, some stand out with superior production characteristics and we are able to take cuttings and propagate these smaller experimental crops at a slower time of year. This is an important intermediate step in the selection of nativars and taking labor pressure off the main production season.

Figure 2. Winter production of plants we found difficult to grow outside.

Native perennials have sold well for years, but we would typically buy in nearly finished plants and pot them up for early summer sales.

Using some of the space in the greenhouses in winter, we can start perennials that are traditionally difficult for us to find or finish in time for summer sales (Fig. 3).

Figure 3. Examples of native perennials (*Aralia*, *Arisaema*, *Amsonia*) started in the greenhouses in winter that are traditionally difficult for us to find or finish in time for summer sales.

Quercus (oaks) have long been an important product for Johnson's Nursery. We have been working to grow oaks with fibrous root systems for nearly 30 years. The idea behind this is to make a more transplantable oak. This starts at the emergence of the radicle on a chitted acorn. We treat them chemically and manually prune the roots at every stage in the nursery. This results with an oak tree with an unnaturally fibrous root mass — resulting in increased transplant success and faster establishment.

Growing our own oaks also allows for us to screen for alkaline tolerance, which is a big problem in Southeast Wisconsin, where our soil pH can be near 8 and sometimes higher. In the case of swamp white oak, we prefer propagating its hybrid form *Quercus* × *shuettei* over the straight species. This hybrid has many of the ornamental features of swamp white oak, but also often includes inherited alkaline soil tolerance of the bur oak parent (Fig. 4). The hybrid between white and bur oaks, *Q.* × *bebbiana*, is our next area of focus, and we are currently trialing many plants that feature the look of a white oak, but have durability and growing characteristics of a bur.

Figure 4. Variance in alkaline soil tolerance in *Quercus* × *shuettei* groups.

Japanese maples (*Acer palmatum*) in our region are marginally hardy. Many varieties aren't hardy through most winters and the hardiest of the variations seem to be hurt more than we'd like to see on a tree. The hybrids between Korean maple (*A. psuedosieboldianum*) and Japanese maple (*A. palmatum*) are of great interest to us. Ideally, we will be getting many of the ornamental features of a Japanese parent combined with the increased hardiness of the Korean maple (Fig. 5). When we grow out the hybrid seedlings, many desirable characters are transferred from the Japanese parent. We look for seedlings with interesting foliage colors and forms, as well as a rapid growth rate.

Figure 5. Hybrids seedilings between Korean maple (*A. psuedosieboldianum*) and Japanese maple (*A. palmatum*) showing variation.

THE FUTURE

As we look to keep moving our businesses forward, I would encourage all of you to consider the road less travelled by. Keep your people evolving and growing, just like the plants we look to sell. The business model of Johnson's Nursery is rare these days, by having in-house propagation all the way through landscape install. By maintaining all these different facets, our company can offer an unmatched degree of service and knowledge about our plants.

When someone works with us, they are purchasing solutions to the problems that they might have bought from someone else.

Some of our most well-known products, including the transplantable oak, came about because of attention to common problems experienced by various clients. Keep your eyes open and observe what you can do to solve your client's issues.

The production of native plants at our nursery is going to be our next big shift. The sale of natives has roughly doubled in the past ten years and the sales of native container material has increased about 4 times over. If you can promote local ecotype material and reduce national competition and make an even bigger difference for the world.

As the newer generations are coming into their buying powers, I foresee a larger emphasis on how a plant can be useful as a living thing in the world and a decreased emphasis on bloom size and color. Form follows function and as the architects of what plants are out there for people to purchase, we will be held to a higher standard on what our plants can do for adding ecological as well as ornamental value to our surroundings.