

2024 TOP 100 GROWERS: A CLOSER LOOK



LAST YEAR AT THIS TIME, when we were conducting our Top 100 Growers survey, many growing operations told us that while they did not grow in size in 2023, they were planning for growth, in some cases significant, headed into 2024.

The numbers in our 2024 Top 100 Growers report certainly reflect this. More than 25% of the growers on this year's list saw an uptick in square footage, and several are capitalizing on this growth by investing in automation systems, as well as their team.

But the market is also facing headwinds, some of them internal and some dictated by external

market forces. As a result, this year's Top 100 Growers list is missing a few names: Dan Schantz Greenhouses in Pennsylvania, White's Nursery and Greenhouses in Virginia, Panzer Nursery in Oregon, and Skagit Horticulture in Washington.

Within this whitepaper, you can find information on how growers are investing in technology, how they are facing labor and logistics challenges, and more.

You can review the complete Top 100 Growers list below. Let us know if anything on the list should be updated by sending an email to bdsparks@meistermedia.com.

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2024 Rank	2023 Rank	Name of Operation	State	2024 Total (Env. Controlled sq. ft. in U.S.)
1	1	Costa Farms 	FL	49,941,040
2	2	Altman Plants	CA	38,480,855
3	3	Bell Nursery	MD	18,150,000
4	4	Bonnie Plants*	AL	15,908,587
5	6	Metrolina Greenhouses 	NC	9,400,000
6	5	Kurt Weiss Greenhouses*	NY	9,238,232
7	7	Rocket Farms*	CA	7,500,000
8	8	Green Circle Growers 	OH	6,534,000
9	n/a	Everde Growers	CA	5,800,000
10	9	Woodburn Nursery and Azaleas	OR	5,052,960
11	10	Olson's Greenhouse Gardens	UT	4,991,880
12	19	Dan and Jerry's Greenhouses	MN	3,880,325
13	11	Coastal Greenhouses*	NY	3,746,160
14	13	Speedling	FL	3,417,000
15	15	Dallas Johnson Greenhouses 	IA	2,831,400
16	16	Smith Gardens 	WA	2,800,000
17	18	Headstart Nursery	CA	2,711,000
18	20	Bergen's Greenhouses Inc. 	MN	2,592,737
19	21	Wenke/Sunbelt Greenhouses 	MI	2,526,480
20	26	Dewar Nurseries	FL	2,494,320
21	22	Young's Plant Farm 	AL	2,447,300
22	24	Matsui Nursery	CA	2,400,000
23	25	Natural Beauty Growers 	WI	2,381,000
24	27	Plug Connection LLC	CA	2,254,120
25	33	Armstrong Growers	CA	2,239,100

2024 Rank	2023 Rank	Name of Operation	State	2024 Total (Env. Controlled sq. ft. in U.S.)
26	34	Grower Direct Farms 	CT	2,130,596
27	30	Aris Horticulture*	OH	2,007,800
28	28	Garden State Growers	NJ	2,003,760
29	12	Milgro Nursery	UT	2,000,000
30	32	Lucas Greenhouses	NJ	1,876,980
31	29	N.G. Heimos Greenhouses	IL	1,873,080
32	39	Rockwell Farms 	NC	1,785,960
33	14	Bela Flor Nurseries	MO	1,758,540
34	36	Westland Floral Co.*	CA	1,740,000
35	43	Pineae Greenhouses 	UT	1,670,240
36	38	Willoway Nurseries	OH	1,654,800
37	44	Henry Mast Greenhouses/ Masterpiece Flower Co.	MI	1,587,004
38	40	Bailey Nurseries*	MN	1,560,754
39t	42	Kawahara Nurseries* 	CA	1,500,000
39t	17	Tagawa Greenhouses	CO	1,500,000
41	51t	Rambo Nursery	GA	1,410,000
42	45t	Corso's Horticulture 	OH	1,400,000
43	47t	American Color 	VA	1,393,920
44	50	Silver Vase, Inc.	FL	1,322,000
45t	61	Plainview Growers	NJ	1,306,800
45t	41	Post Gardens	MI	1,306,800
47	51t	Richardson Brothers Greenhouses*	IL	1,300,000
48	54	Heartland Growers	IN	1,226,682
49	57	Quality Greenhouses and Perennial Farm, Inc.	PA	1,219,680
50	56	Red Oak Greenhouses	IA	1,175,560

* = estimated; t = tie

2024 Rank	2023 Rank	Name of Operation	State	2024 Total (Env. Controlled sq. ft. in U.S.)
51t	37	Four Star Greenhouses*	MI	1,132,560
51t	58	Masson Farms of New Mexico*	NM	1,132,560
53	59	Green Valley Greenhouse	MN	1,112,000
54t	51t	Nash Greenhouses	MI	1,089,000
54t	n/a	Sakata Seed America	CA	1,089,000
56	60	Bob's Market and Greenhouses, Inc.	WV	1,085,000
57	63	South Central Growers 	TN	1,051,584
58	64	Van Wingerden International*	NC	1,022,693
59	65t	Catoctin Mountain Growers	MD	1,001,880
60	100	Welby Gardens	CO	1,000,000
61t	n/a	Deroose Plants 	FL	980,000
61t	65t	McCorkle Nurseries* 	GA	980,000
63	67	Dramm Echter Farms	CA	950,000
64t	69	Countryside Greenhouses*	MI	914,760
64t	85	Westerlay Orchids 	CA	914,760
66	72	Kube-Pak	NJ	905,000
67	70	Baucom's Nursery	NC	900,000
68	47t	Petitti/Casa Verde Growers	OH	895,000
69	71	Myriad Flowers International	CA	871,200
70	74	Sedan Floral	KS	852,135
71	75	Fessler Nursery	OR	850,000
72	81	Kent's Bromeliad Nursery	CA	840,000
73	78	Pleasant View Gardens 	NH	836,830
74	76	Botany Lane Greenhouses*	CO	835,000
75	77	Andy Mast Greenhouses*	MI	826,921

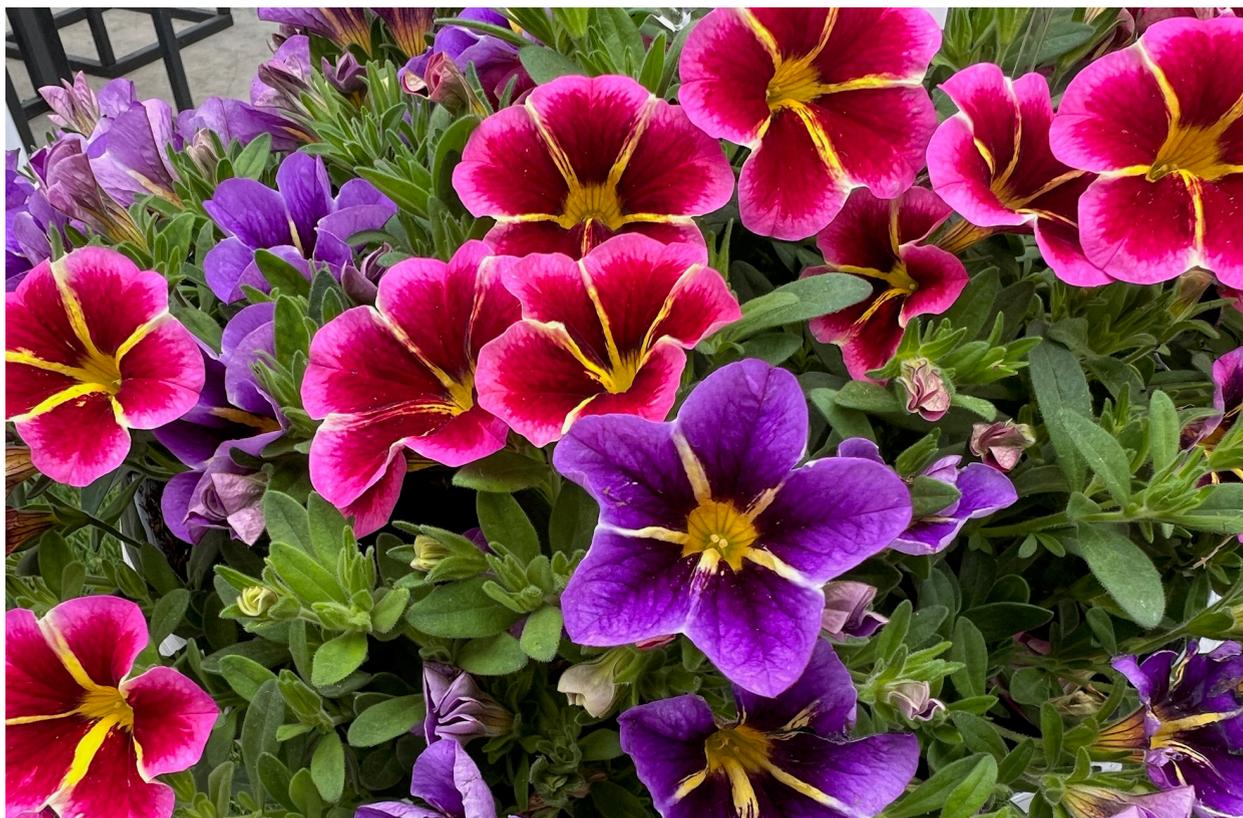
2024 Rank	2023 Rank	Name of Operation	State	2024 Total (Env. Controlled sq. ft. in U.S.)
76	82	Dutch Heritage Gardens	CO	784,080
77	84	Dickman Farms	NY	776,552
78t	79t	California Pajarosa	CA	760,000
78t	79t	Olive Hill Greenhouses 	CA	760,000
80	83	Plants Unlimited	MI	740,000
81	94	Naturally Beautiful Plant Products	NJ	721,500
82	86	Agromillora	CA	700,880
83	87	Knox Nursery 	FL	700,000
84t	88	Esbenshades Greenhouses	PA	696,960
84t	97	Hampshire Farms	IL	696,960
84t	n/a	Walters Gardens	MI	696,960
87	89	Parks Brothers Farm	AR	660,000
88t	90	Green Valley Floral	CA	653,400
88t	n/a	Veras Nursery	FL	653,400
90	91t	Loop's Nursery and Greenhouses	FL	650,000
91	95	Tidal Creek Growers	MD	622,908
92	n/a	Van Wingerden Greenhouses, Inc.	WA	609,840
93	n/a	Darrell Norris & Son Greenhouses, LLC	OH	608,592
94	96	Micandy Gardens	MI	605,000
95	98	Roseville Farms*	FL	570,000
96	n/a	N. Casertano Greenhouses and Farms Inc. 	CT	559,290
97	99	Sunshine Greenhouses*	UT	555,570
98	n/a	Emerald Coast Growers	FL	550,000
99	n/a	Plants In Design, Inc.	FL	522,000
100	n/a	Layser's Flowers Inc.	PA	520,000

* = estimated; t = tie

Varieties

How is your ornamental/floriculture crop mix changing in 2024?

Crop	Plan to Increase Production	Plan to Maintain Production	Plan to Decrease Production	n/a
Annuals	46%	35%	3%	16%
Container perennials	46%	30%	0%	25%
Flowering potted plants	33%	39%	5%	23%
Tropicals, potted foliage/houseplants	26%	29%	3%	42%
Plugs and propagation material	53%	34%	0%	13%
Woody ornamentals (shrubs), trees	10%	24%	2%	65%
Vegetable or herb transplants for gardens	31%	41%	2%	27%
Succulents	6%	40%	6%	49%
Other ornamentals/floriculture crops	19%	30%	0%	51%



Management

What's the best way to describe your greenhouse operation and its role in contract growing?

Response	2024	2023	2022	2021	2020	Five-year average
We produce plant material for other growers through contracts.	22%	18%	13%	16%	15%	16.8%
We contract other growers to produce material for us.	25%	19%	19%	20%	26%	25.8%
We produce plant material for other growers through contracts AND contract other growers to produce material for us.	18%	15%	17%	16%	13%	15.8%
We sell 100 percent of our material direct so none of the above.	35%	48%	50%	48%	47%	45.6%

Grower partnerships are on the rise, as fewer growers told us they produce just for themselves.



Management (cont'd)

What are your average annual sales in floriculture/ornamental crops?

Response	2024	2023	2022	2021	2020	Five-year average
\$700 million to more than \$1 billion	0%	0%	1%	1%	2%	.8%
\$300 million to \$699 million	5%	3%	1%	3%	1%	2.6%
\$50 million to \$299 million	29%	19%	20%	13%	11%	18.4%
\$1 million to \$49 million	65%	64%	65%	69%	70%	66.6%
\$500 thousand to \$999 thousand	0%	3%	3%	1%	1%	1.6%
Less than \$500,000	2%	11%	10%	13%	15%	10.2%

Who are your customers?

Response	2024	2023	2022	2021	2020	Five-year average
Independent garden centers	64%	52%	59%	54%	52%	56.2%
Supermarket chains, warehouse clubs	64%	64%	55%	54%	52%	57.8%
Home improvement chains	54%	45%	46%	38%	41%	44.8%
Other growers	51%	46%	46%	53%	44%	48%
Landscape contractors	45%	40%	36%	32%	38%	38.2%
E-commerce sites	25%	23%	19%	14%	14%	19%
Events (fundraisers, meetings, etc.)	25%	26%	14%	13%	13%	18.2%
Your own retail shop	22%	23%	23%	24%	29%	24.2%
Florists (retail and wholesale/brokers)	21%	29%	33%	27%	31%	28.2%
Municipalities	16%	12%	16%	12%	17%	14.6%
Farm markets	13%	14%	9%	13%	14%	12.6%
Food Services (restaurants, hospitals, schools, etc.)	4%	3%	2%	5%	2%	3.2%

Management (cont'd)

How is your operation changing with regard to size and ownership?

Response	2024	2023	2022	2021	2020	Five-year average
We have sought external financing/ownership in the past year.	5%	10%	5%	5%	3%	5.6%
We will seek external financing/ownership in the coming year.	0%	6%	5%	5%	5%	4.2%
We have made acquisition(s) in the past year	14%	4%	10%	6%	5%	7.8%
We plan to acquire additional location(s) in the coming year.	11%	6%	12%	11%	13%	10.8%
We plan to build more on our current site(s).	70%	51%	73%	68%	56%	63.6%
We plan to lease or contract our location in the coming year.	2%	2%	4%	2%	1%	2.2%
We plan to divest part of our operations in the coming year.	2%	4%	1%	3%	0%	2%
We plan to sell our operation and get out of the business in the coming year.	0%	0%	3%	0%	0%	.6%
We have created a succession plan in the past year, and transferred ownership.	9%	20%	19%	11%	11%	14%
We will create a succession plan in the coming year, for transition of ownership.	9%	10%	10%	14%	19%	12.4%



Management (cont'd)

Which topics are you most concerned about with regard to your business?

Response	2024	2023	2022	2021	2020	Five-year average
Labor costs	85%	75%	76%	72%	78%	77.2%
Government regulation (immigration, labor, health care, etc.)	55%	46%	51%	49%	48%	49.8%
Production costs (energy, equipment, etc.)	45%	54%	56%	60%	48%	52.6%
Availability of skilled labor	42%	41%	62%	59%	59%	52.6%
Availability of educated, experienced growers	38%	43%	42%	36%	34%	38.6%
The economy	30%	46%	28%	45%	50%	39.8%
Price pressure from retailers	30%	36%	15%	9%	22%	22.4%
Transportation (cost, availability, regulation, etc.)	27%	28%	54%	58%	43%	42%
Weather/changing weather patterns	21%	18%	9%	27%	32%	21.4%
Mechanization	20%	30%	21%	16%	12%	19.8%
Insect and disease pressure	17%	25%	18%	13%	14%	17.4%
Consumer interest in plants	15%	28%	15%	13%	6%	15.4%
Succession planning	12%	17%	14%	12%	14%	13.8%
Environmental sustainability	11%	13%	20%	13%	12%	13.8%
Supply Chain	11%	18%	58%	n/a	n/a	n/a
Access to credit/financing	8%	13%	2%	8%	11%	8.4%
Water (availability, quality, drought, etc.)	8%	13%	14%	11%	7%	10.6%



Photos Left to Right: Volodymyr Shevchuk - stock.adobe.com; ABCD - stock - stock.adobe.com; Elena - stock - stock.adobe.com; Deep Desert Photo - stock - stock.adobe.com

Management (cont'd)

Which business challenge has had the most significant impact, and how are you addressing it?

- **Labor and production costs** have gone up significantly in past three to four years. We have been able to get some price increases to help offset the extra burden.
- **Labor cost and government regulations.** Price increases to offset labor. Not much we can do with new rules.
- **Labor. Mechanization.**
- Depending on the day or topic, they all may be the most important. I can't do much about the weather, but we did make a system to identify plants that need to ship immediately so that we sell them before they become overgrown. If I have to pick just one, I would select **price pressure** because the others cause the need for higher prices. To keep cost increases to a minimum, we changed our packaging for our biggest item. We have implemented a system to adjust our production to better match the orders the customers placed in advance to reduce shrink and increase customer satisfaction.
- **Weather:** We can't control
- **Labor costs,** and we are doing our best to increase **efficiency.**
- We are committed to **"growing" young, talented folks** who want to learn and who want to earn increasing responsibilities
- The **rise in H-2A labor costs.** We are actively contacting our government officials and working with horticulture advocates to try to stabilize the labor cost.
- **Production costs** - in the past few years we have really had to address the costs of doing business and get as streamlined as possible
- **Labor** continues to be a key challenge. We've increased the percentage of our H-2A workforce to accommodate.
- **Skilled labor and transportation costs.** We are addressing this by increasing product availability and adding value through customized branding.
- **Transportation-** We have to lease our delivery trucks earlier than we need them in order to ship on time.
- **Government overstep in H-2A contracts** by raising the adverse wage so quickly. **The Farm Bill.** Congress working for Wall Street and not the American worker.
- **Pricing pressures** will always be a top concern for most growers. We always must improve our systems and methods to become more efficient.
- **Price pressure** from retailers. We are doing the best we can to take advantage of our relationships with vendors to blunt the impact on our end and not just get caught in the middle.
- Can't change the **weather** but it is the biggest factor to sales in spring. We are getting more involved in local government so we can try to make change that way
- **Labor Costs** - they continue to go up, H-2A regulation changes to allow more flexibility are slow (but we are working on them), so we continue to invest in automation to limit the labor need in the production of our product.
- **Price pressure.** Very little appetite for increases despite increased costs.
- **Production costs.** Looking to more mechanization and labor-saving opportunities.
- **Price pressure** and **customer demands changing**
- **Increase of cost.** We are focusing on standardization that allows more automation to be more efficient

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Management *continued from p.9*

Which business challenge has had the most significant impact, and how are you addressing it?

- **Labor Costs.** We use H-2A but the AEWR needs to come under control in the next five years if we are able to keep using it
- **Energy costs** - we plan to upgrade to more efficient space and use the space we have more efficiently.
- **Price pressure from retailers.** Continue to automate and look at alternative packaging to reduce cost in handling and freight
- **Labor/production costs.** Continue to drive mechanization and management concepts that focus on driving cost per unit down.
- Aside from hanging help wanted signs, we are **working with head hunter companies**
- **Weather** is always the biggest factor, and the one over which we have the least control.
- We had a successful year of **hiring for full-time positions.** We added several growers, logistics, office and maintenance team members in 2023.
- **Increasing costs and pricing pressure** from retailers are making margins razor thin. We are looking at all means of reducing input costs including propagating more of our material, buying more carts to avoid expensive cart rental costs, and mechanization to reduce labor.
- **Lack of qualified CDL drivers.** This is still a serious problem.
- **Staffing** new facility with qualified staff
- **Production costs:** more personnel, less hours
- **Lack of experienced growers.** We're approaching it by hiring people earlier and building in more training time.
- **Supply chain**
- **Labor costs** are the most significant. Washington State is one of the highest minimum wage states and continues to put pressure on agriculture with laws around labor.
- Availability of **skilled labor**, more specifically trained and available growers that are looking for long term-roles.



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Management (cont'd)

What was the best thing you did in 2023 to improve your profitability?

- **Rely on our H-2A workforce**
- **Raise prices** and **continue with fuel surcharge**
- **Develop business opportunities** to build revenue and **utilize capacity off peak**
- We **built an addition to our propagation facility** so that we could produce better quality more efficiently in the future. It was an investment in the future but did not improve 2023.
- **Cut waste**
- Continue to **automate** while keeping our **skilled greenhouse labor force at 100%**
- Slight **increase** in **pricing** and **fuller loads**
- **Focus on specific items that generate higher margin** while **reducing** or **dropping poor margin performers**
- **Added three robotic sticking machines**
- **Improved quality of plants**
- Developed an **exclusive, in-house, native pollinator brand**
- Added **more square footage** and **roll racks**
- **Align production** to **insure a better sell through**
- **Listen** to **customer demands** and **preferences**
- **Adjusting production forecast** to the **market demands** of today
- **Streamlined our product lines**
- **Retrofit outdated greenhouse/sticking facility**
- **Improve** my **processes** to **increase** my **margins**
- Acquired **additional capacity**
- We **managed** our **labor** more intentionally
- **Threw plants away as soon as possible** and didn't touch the plants if they weren't sold (spring 2023) - mainly because we had extra
- **Reduced shrink** and **labor hours worked**
- **Better space utilization**
- **Increased robot production of URC's** and **less manual sticking.**
- **Switch to pallet racks** for shipping
- Having **better weather** always helps. Sunny weekends are key.
- Starting to implement **lean flow for shipping processes**
- **Reduced** some **low-volume crops**
- **Increased propagation** to **reduce input costs, purchased more carts** to improved efficiency to order fulfillment
- **Improved** our **focus** on **hitting sales windows** allowed us to have a very strong April and May
- **Maintain production targets** and **invest in energy-saving lighting**
- **Grow less late spring annuals**

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Management *continued from p.11*

What was the best thing you did in 2023 to improve your profitability?

- **Licensed growers to grow material under our name.**
- **Lowering the COG** as well as **dialing in our product mixes**
- Becoming **more efficient**
- **Focus on the varieties that sell for a premium price**
- We have **increased our focus on reducing overtime and efficiencies in our operations.** Labor continues to be the driving influence on our profitability.
- **Implement live inventory** including **online ordering** to increase sell thru percentages of each crop schedule

Over this past year, there have been a number of Top 100 operations that have shut down. How has your company been able to adjust to dynamic market conditions?

- It is incredibly important to collaborate closely with your customers and manage your inventory closely.
- Our business model has changed as we concentrate our efforts on our core business.
- Continue providing high quality and remain a desirable supplier for our broker growers. No other changes.
- Diversify crops and customers.
- We filled in some gaps that other growers opened because of retirements or converting into real estate development.
- Always a good reminder to be humble when we learn of another growing closing. We have been able to provide product to customers who were left without a supplier. We continue to increase our selling prices to reflect the higher costs.
- Continue to build rapport with our customers
- We stick to what we are good at and constantly reevaluate where we can improve
- By changing and adapting to the ever-changing environment as soon as we realize it is necessary
- Careful management of spending (labor, admin costs, materials). Driving value through unique offerings that create a barrier to entry. Maintain high quality to ensure elevated pricing.
- Reevaluating everyday how our business operates and looking to pick up savings though operational changes. Market is stagnant in pricing so you have to look within
- Reducing personnel and implement technology and improve KPIs
- Increasing our customer base. Maintaining a diverse customer base. Slow and steady growth and not leveraging ourselves financially.



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Management *continued from p.12*

Over this past year, there have been a number of Top 100 operations that have shut down. How has your company been able to adjust to dynamic market conditions?

- We have a good customer base.
- We are always looking for ways to improve and being careful with overhead
- By controlling costs and spending. The hardest thing right now is that labor is up 40% since 2020.
- Maintain a solid customer base, and invest in automation for efficiencies
- Knowing costs and adjusting pricing accordingly.
- Our focus has been and remains on execution. If you don't execute the day to day well, you can't execute weekly/monthly or annually
- Most sell to chains and I do not so not a lot to adjust to.
- Relentless focus on what consumers are buying; Investments in Analytics, ERP, and Logistics systems; H-2A for our seasonal Labor Needs
- By controlling our destiny and not depending on other competitors.
- Maintenance of key accounts, lean operating
- By strengthening our customer relations, focusing on quality production and improving operational efficiencies.
- Social media
- A loyal customer base and flexible service.
- Try to keep costs down and maintain correct prices.
- Focus and deliver on internal and external customer satisfaction.
- I only have noticed box store suppliers shutting down. We don't supply box stores. Independents are strong.
- We have a very diversified portfolio so exposure is limited when certain product markets change.
- Be nimble
- Connect customers to the right plants, deliver with effortless logistics, listen to our customers, offer convenience in ordering products, offering solutions specific to customer needs
- We've been able easily adapt to change.
- A unique intersection of luck and skill.
- I think many went out of business due to a lack of a succession plan. We are currently on our third generation just starting out, so we have not run into that problem yet.
- We are learning to use data to help us determine what crops need to be increased, decreased or eliminated from our product mix.
- Good relationship with a community bank. Focusing on debt reduction. Retaining good employees.
- Drive down costs by increased efficiency and strengthening sales team
- This has increased demand for our products. To stay profitable and in business we have continued to raise our prices.
- We formed a partnership with Costa Farms

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Management continued from p.13

Over this past year, there have been a number of Top 100 operations that have shut down. How has your company been able to adjust to dynamic market conditions?

- We're increasing production space and licensing growers to produce under our name.
- We have stayed diversified and have adjusted to current market conditions.
- Selling to all different market's segments
- Grow what sells
- We have remained focused on what has been working for our unique situations. There are many opportunities to expand and add new products, but we only do so if it makes sense within our system.

Production

What are the biggest crop production challenges at your business?

Response	2024	2023	2022	2021	2020	Five-year average
Labor (cost, consistent supply, trained employees, management experience, etc.)	81%	76%	88%	88%	84%	83.4%
Production space management	43%	32%	37%	36%	32%	36%
Weather (hot humid summers, cold winters, etc.)	30%	26%	21%	18%	28%	24.6%
Planning production numbers accurately	29%	29%	21%	24%	22%	25%
Scheduling (planting, potting, etc.)	22%	19%	18%	11%	15%	17%
Insect control	17%	24%	20%	19%	18%	19.6%
Quality control	14%	19%	12%	14%	11%	14%
Disease control	13%	21%	17%	21%	11%	16.6%
Nutrient management	10%	5%	6%	7%	12%	8%
Light levels	5%	6%	2%	4%	11%	5.6%

Production (cont'd)

Which insects/pests were a particular problem this past year?

Response	2024	2023	2022	2021	2020	Five-year average
Thrips	75%	67%	67%	68%	69%	69.2%
Spider mites	45%	57%	43%	41%	49%	47%
Aphids	36%	31%	40%	45%	31%	36.6%
Fungus gnats	20%	31%	17%	17%	18%	20.6%
Whiteflies	20%	24%	24%	16%	18%	20.4%
Mealy bugs	11%	17%	21%	7%	13%	13.8%
Foliar nematodes	4%	3%	0%	6%	0%	2.6%
Shore flies	4%	7%	4%	12%	6%	6.6%
Cutworms, armyworms, loopers, and other caterpillars	2%	7%	4%	6%	5%	4.8%
Leafminers	2%	5%	3%	6%	3%	3.8%

Which diseases were a particular problem this past year?

Response	2024	2023	2022	2021	2020	Five-year average
Botrytis	42%	46%	42%	46%	57%	46.6%
Powdery mildew	36%	29%	36%	41%	27%	33.8%
Damping off and root rots: phytophthora, phythium, rhizoctonia, etc.	22%	35%	23%	19%	25%	24.8%
Downy mildew	20%	12%	19%	17%	14%	16.4%
Viruses: impatiens necrotic spot virus (INSV), tobacco spotted wilt virus (TSWV), etc.	14%	21%	9%	11%	19%	14.8%
Bacterial leaf spots	12%	23%	22%	24%	18%	19.8%
Fusarium and verticillium wilt	12%	15%	14%	17%	15%	14.6%
Soft rots: erwinia, etc.	10%	19%	10%	11%	12%	12.4%
Rusts	4%	4%	6%	5%	3%	4.4%

Production (cont'd)

What kind of biological products do you use currently?

Response	2024	2023	2022	2021	2020	Five-year average
Beneficial insects (BCAs)	80%	57%	72%	61%	71%	68.2%
Microbials (microorganisms that control pests)	47%	59%	59%	47%	48%	52%
Biochemicals (plant extracts, PGRs, etc.)	41%	46%	49%	44%	42%	44.4%
Biostimulants (biological products that focus on plant health rather than pest control)	24%	30%	29%	30%	29%	28.4%
I don't currently use biological products	12%	8%	6%	21%	9%	11.2%
Not using them yet -- looking into it	5%	8%	5%	3%	7%	5.6%

Technology

If you are investing in technology (automation, equipment, structures, software, energy efficiency, etc.), what factors have caused you to do so?

Response	2024	2023	2022	2021	2020	Five-year average
Cost of labor	90%	76%	74%	73%	80%	78.6%
Improved efficiency	82%	79%	74%	76%	88%	79.8%
Better uniformity and efficacy of production	46%	50%	48%	41%	54%	47.8%
Availability of labor	44%	59%	67%	62%	72%	60.8%
To allow employees to concentrate on other areas	43%	43%	46%	32%	45%	41.8%
Expanding our growing operation	38%	33%	33%	36%	28%	33.6%
We are not investing in new technology this year	2%	3%	10%	11%	28%	10.8%

Technology (cont'd)

Which of the following areas are you planning to invest in most this year?

Response	2024	2023	2022	2021	2020	Five-year average
Greenhouse Structures & Coverings (including energy curtains, etc.)	61%	39%	56%	65%	53%	54.8%
Computer Software (i.e. inventory, transportation, crop protection, etc.)	49%	36%	36%	42%	50%	42.6%
Irrigation Equipment & Controls (i.e. irrigation booms, sensors, automated watering, etc.)	46%	38%	40%	39%	42%	41%
Production Automation (Planting equipment, i.e. transplanters, seeders, dibblers, conveyors, basket systems, plug fixer, trimmer/sterilizer, etc.)	46%	45%	55%	35%	70%	50.2%
Functional Automation (i.e. spacing robots, foggers, environmental controls, etc.)	23%	17%	21%	14%	24%	19.8%
Shipping Equipment (i.e. plant handling/moving, conveyors, echo-veyors, etc.)	19%	19%	15%	18%	26%	19.4%
Technology (i.e. Drones, UAVs, computer hardware, AI, handheld technology)	19%	12%	11%	8%	17%	13.4%
Growing Media Equipment (i.e. pot fillers, tray fillers, soil mixers, grow lines, etc.)	18%	19%	26%	13%	23%	19.8%
Lighting (i.e. LEDs, etc.)	18%	26%	35%	24%	36%	27.8%
Robotics	18%	10%	10%	8%	17%	12.6%
Alternate energy sources (solar panels, geothermal, wind turbines, etc.)	16%	5%	5%	4%	3%	6.6%
Heating/Cooling Technology (i.e. alternative energy boilers, wind turbines, etc.)	12%	17%	13%	13%	8%	12.6%
Water Conservation & Quality Equipment (i.e. Ozonation equipment, etc.)	9%	7%	8%	6%	11%	8.6%
Postharvest & Packaging	7%	7%	8%	7%	4%	8.6%

Technology (cont'd)

Are you investing in new or retrofitted structures and coverings this year?

Response	2024	2023	2022	2021	2020	Five-year average
Yes, we are expanding our business and building new structures	37%	37%	49%	49%	42%	42.8%
Yes, we are investing in coverings this year	32%	34%	30%	25%	29%	30%
Yes, we are retrofitting our existing structures this year	31%	27%	30%	30%	40%	31.6%
We are planning an expansion, but not for this year	22%	15%	16%	16%	10%	15.8%
No, we have no need for additional structures or retrofits	10%	10%	11%	11%	8%	10%
No, we don't need coverings	8%	5%	4%	4%	8%	5.8%
We are planning to retrofit, but not this year	3%	14%	10%	10%	3%	8%

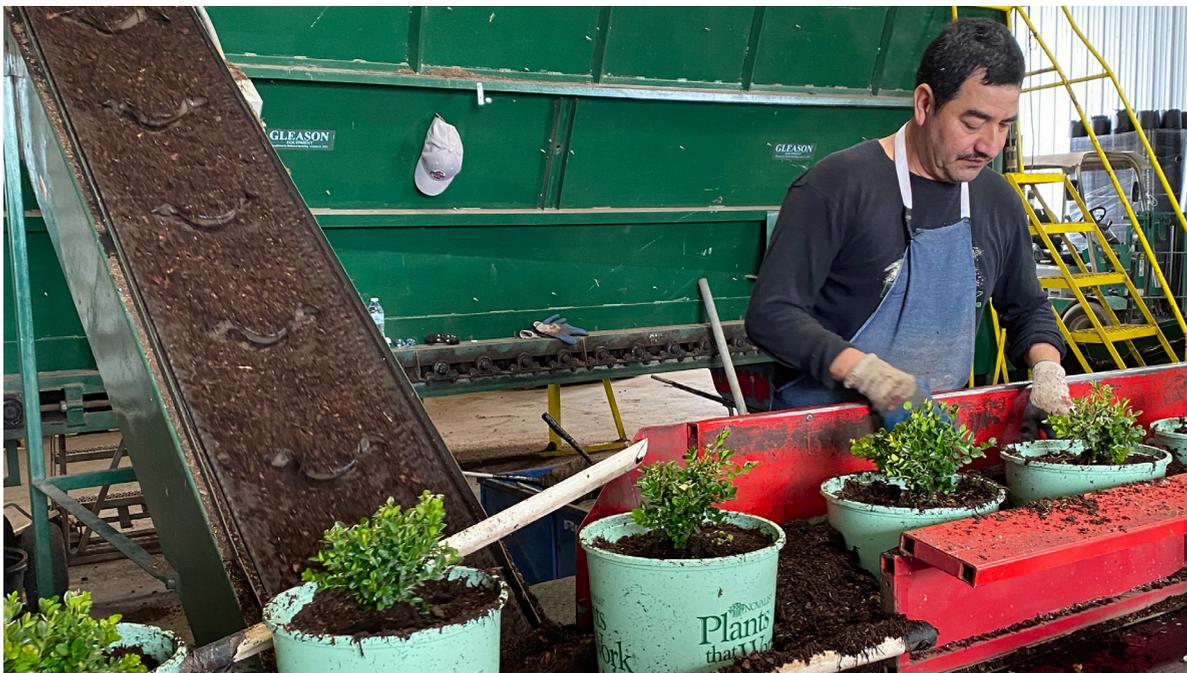
Are you using artificial intelligence systems in your greenhouse?

Response	2024	2023
Yes	5%	10%
No, but I would consider it	84%	71%
No, and I would not consider it	11%	19%

Technology (cont'd)

What technology do you feel still needs to be developed for this industry?

- More automation of repetitive tasks
- Pest identification, chemical tracking and integration into our production software.
- Better automatic labeling
- Inventory Tracking
- Robotics with AI
- Anything that benefits the greenhouses and cuts down on physical labor.
- Production planning software
- Plant spacing technology is still pretty rudimentary and seems to require ideal conditions. Also trimming technology at an individual level is generally cost prohibitive
- RFID labeling
- Forecasting technology
- Purchasing software
- E-commerce tools that consider plant-specific factors.
- Space allocation and supply chain management
- RFID tagging and tracking
- Irrigation sensing still needs to be improved
- Crop-specific automated growing techniques
- Better interface on environmental control software
- More handheld tablet-based technology to help growers grow. Irrigation management tools.
- Shipping advancements and streamlining



Labor

Do you use the H-2A program?

Response	2024	2023	2022	2021	2020	Five-year average
Yes	50%	54%	43%	32%	28%	41.4%
No	50%	46%	57%	68%	72%	58.6%



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If you don't use H-2A, which of the following best describes you?

Response	2024	2023	2022	2021	2020	Five-year average
No, I don't currently use H-2A but I plan to start using a guestworker program	7%	6%	12%	4%	3%	6.4%
No, I don't currently use H-2A but I plan to investigate guestworker options for potential use	34%	48%	38%	42%	48%	42%
No, I don't currently use H-2A and likely never will use a guestworker program	59%	45%	50%	54%	49%	51.4%

Labor (cont'd)

If you do not use the H-2A program, what is currently holding you back from using it?

Response	2024	2023	2022	2021	2020	Five-year average
I don't need to use it.	50%	50%	34%	33%	19%	37.2%
I have good alternative sources for labor.	50%	20%	21%	12%	18%	24.2%
Housing	30%	37%	38%	41%	35%	36.2%
Cost	20%	40%	28%	33%	29%	30%
Labor shortage is not severe enough to warrant the effort	20%	17%	6%	20%	19%	16.4%
Too complicated to manage	17%	23%	32%	31%	21%	24.8%
Local labor is less expensive	13%	20%	11%	16%	8%	13.6%
Time	10%	10%	13%	8%	5%	9.2%
Regulations, restrictions	7%	23%	21%	33%	29%	22.6%



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Labor (cont'd)

If you do not use the H-2A program, what resources do you currently use to secure enough production labor at your operation?

Response	2024	2023	2022	2021	2020	Five-year average
Returning laborers	77%	58%	61%	61%	69%	65.2%
Word of mouth	60%	42%	53%	61%	48%	52.8%
Employee retention	53%	52%	55%	51%	50%	52.2%
Offer higher wages or other benefits	47%	39%	41%	39%	37%	40.6%
Advertising (job fairs, postings, employment sites, etc.)	33%	32%	37%	43%	35%	36%
Friends and family	30%	23%	27%	35%	37%	30.4%
Temp services, staffing agencies	30%	13%	14%	31%	27%	23%
Contract labor	23%	23%	35%	29%	31%	28.2%
Work-release programs	0%	6%	6%	12%	3%	5.4%

What are your best strategies for training new employees?

- Our training programs could be improved. Many new hires lack motivation.
- Making a training plan together with targets for what they need to learn next.
- Group Training
- Positive workplace culture
- Outline expectations from the start, measure and monitor, then provide regular feedback to encourage positive behaviors while altering negative behaviors/patterns.
- Having them work closely with team leaders and experienced employees.
- Mirror a designated trainer for several weeks.
- Expose people at an early stage to reality and give them room to fail and then adapt
- Small crews with experienced crew leaders to train their crews.

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Labor *continued from p.22*

- We have a Learning Management System (LMS) that can take a new employee from orientation to promotion to career path. Still working on it, but making great progress.
- Immerse them in new areas of the operation and train.
- Having an actual intentional onboarding experience rather than just shadowing and hoping for the best
- Allowing them to work at their own pace and learn from others until they are confident
- Finding out what the talents are, and using them in those positions. If someone is that good at a certain job, we move them to something else where they are more productive
- Repetition. Repetition.
- We try to give them a section of a greenhouse to run with supervision from their trainer. Get them involved with as many processes as possible so they can begin to understand the big picture.
- Most of our training is on the job training whereby a trusted, tenured employee will train a new employee. Most of the “top down” training involves team building and communication improvement methods.
- Each supervisor has to be good at instructing.
- Hire early and build in additional time to train
- Recruiting the same employees through the H-2A program year after year to flatten the training curve in our greenhouse.



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Transportation

How do you transport your product?

Response	2024	2023	2022	Three-year average
We work with a broker or carrier	50%	44%	40%	44.6%
We use a combination of our own trucks and rented trucks	50%	38%	35%	41%
We own our own trucks	40%	51%	54%	48.3%
We rent trucks	27%	31%	29%	29%
We use our own trucks for short hauls and a broker or carrier for long hauls	27%	26%	32%	28.3%
We use a cross-dock or distribution center	6%	10%	14%	10%

What are your top transportation challenges?

Response	2024	2023	2022	Three-year average
Finding Drivers	56%	57%	72%	61.6%
Cost	54%	43%	53%	50%
Fuel Costs	41%	51%	36%	42.6%
Rules and Regulations	25%	20%	30%	25%
Optimizing Truck Space	28%	20%	9%	19%
Insurance	23%	10%	6%	13%
Delays/On-Time Delivery	18%	13%	17%	16%
Truck Maintenance (if you own trucks)	13%	13%	17%	14.3%
Negotiating Carrier Contracts	11%	10%	9%	10%

Transportation (cont'd)

What solutions have you found that worked to address your biggest trucking challenges?

- Full trucks or no delivery
- We use a system to monitor where the trucks are and dedicate a person to keep in communication with the customers. We use our computer system to organize the racks and shape the customer orders to fill each rack.
- Stay loyal to those who have helped us grow
- Hire a great dispatcher
- Onsite fueling station to reduce fuel costs. Working with other growers and industries to improve utilization, especially via backhauls.
- We only hire truck drivers with over the road experience. We also make sure that they have a good drivers record and comply with all of the regulations.
- Camaras in the trucks have been a game changer.
- Software investment of mileage optimization, cart pickup tracking, and route completion communication.”
- Going more into reefer trucks so plants arrive on time. Things are more competitive this year after the trucking industry experienced a slump
- Capped delivery radius.
- Paying more
- Hire a fulltime logistics Manager
- We trained in-house workers who are very interested in driving.
- Train from within. Keep striving for the best. Cut loose the bad attitudes and crazy, lazy or rude drivers.
- We are considering forming an LLC to pull some liability off of our trucking. I think trucking liability is a very dangerous area for us.
- During the spring we supplement our box trucks with rented trailers. We contract with a local trucking company to provide the tractor and driver. It is expensive, but allows us to move much more product during the peak season.
- We have recently converted all deliveries to 53 ft. tractor trailers, even local deliveries that were previously done with box trucks. We've also determined a clear strategy and mileage radius after which we think it more cost effective to use a brokered truck to deliver our product.
- Finding alternate delivery strategies such as cross docking.
- Gathering orders further in advance to route more efficiently and fill trucks to 100%.



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General

What is your preferred platform for receiving industry-related content? Please select all of the platforms you already do use, and that you would use if available to you.

Response	2024	2023	2022	2021	2020	Five-year average
eNewsletters	80%	69%	60%	65%	61%	67%
Print magazines	78%	81%	68%	71%	67%	73%
Live events	34%	30%	n/a	n/a	n/a	n/a
Webinars	34%	44%	36%	30%	29%	34.6%
Social media	31%	28%	20%	21%	23%	24.6%
Videos	27%	30%	21%	20%	10%	21.6%
Podcasts	20%	17%	13%	11%	11%	14.4%

What are you most excited about when it comes to the future of floriculture?

- New breeding efforts in gene mapping.
- Mechanization from sticking-planting to harvest products.
- Opportunities to compete with a great team
- Plants are part of the solution.
- Consolidation helps us
- Home gardening
- How AI will make us more efficient and profitable
- Spring always excites us. New cultivars and testing new genetics
- People will always use plants to beautify their homes. Sure things change, but if we do as well, things will continue to look bright
- Developing products to entice the next generation of consumers.
- The continued growth in the public's interest in plants and gardening in general.
- We are excited to see the beauty of our plants each year.
- New programs and growth possibilities.
- Quality will always be a game changer.
- New technology



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General *continued from p.26*

What are you most excited about when it comes to the future of floriculture?

- Next generation taking over
- The potential growth of our industry. Only 60% of 65% of consumers buy plants each year, so we have so many more consumers to gains vs. only worrying about how we keep the COVID ones.
- The opportunity to get the next generation involved.
- Locally sourced and grown plants becoming the most desirable for young and sophisticated buyers
- Be proactive in trends, stay ahead of everyone else, and be the first ones or be the trend makers on the market
- New technologies that are actually proven and stick around for longer than one year, not just smoke and mirrors or sales people tooting their own horn
- Continuing to improve the customer experience with our product
- That despite the fact of labor issues, ecological pressure etc., people will still want plants in their lives.
- A consumer that is excited about our product
- That we keep the public interested in the beauty and benefits that plants provide
- New breeding
- I think there are a lot of the younger generation that are excited about gardening right now!
- We are excited about the young growers that we hired this year. We are working hard to get them trained and look forward to the ideas and contributions they will make for us in the future.
- The continued interest in our industry as a way to connect with the outdoor world. I don't think we are doing enough to promote the health and wellness benefits of our industry at a time when consumers are eager to learn about the options for health and wellness.
- The next generation of growers
- The innovation in assortment and product add-ons combined with growing online sales
- People want to buy our product. It's not a necessity, but they enjoy it and makes them feel good.
- Continue to make them successful with their purchase and they will come back for more.
- Increased demand for our products so that the next generation can be successful.
- Working with a great team of colleagues.
- Gradually switching over to more biological products.
- Expanded use and availability of biopesticides
- The current demand for our products is strong and continues.
- The continued development of the foliage industry and expansion of new breeding in bedding plants to increase durability of crops.
- The amount of new gardeners in the industry is promising. Also, the new genetics in the perennial industry are outstanding and more research is taken to introduce better plants.