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RESEARCH ARTICLE

How agritourism helped farmers during the pandemic

California farmers mitigated some of the losses they suffered during the pandemic through direct-to-consumer sales and agritourism.

by Rachael Callahan

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Abstract

During COVID-19, California small farmers and ranchers suffered significant disruptions and shifts in the marketplace, marked by a loss in wholesale outlets and an increase in demand for direct-to-consumer sales. This study examines how agritourism operators responded to the challenges and opportunities created by the pandemic. In 2021 and 2022, in the midst of the pandemic, the UC ANR Agritourism Program held a series of trainings for California farmers interested in starting or expanding agritourism enterprises. Some of the key themes that emerged from the trainings were that farmers had to shift their operations to ensure social distancing and reduced crowd sizes, while at the same time, they experienced an unprecedented demand for direct-to-consumer sales and on-farm visits. Agritourism, in varying degrees, contributed to the resiliency of most of the participants in our study. Moving forward, it would be worthwhile for researchers, agricultural professionals, and decision-makers to examine equity in agritourism and agritourism's role as a risk-management strategy to help mitigate other types of disruptions in the future. Our findings also point to the need to provide farmers with technical assistance around e-commerce and sustainable business planning.

The closure of restaurants and institutional purchasers during COVID-19 due to shelter-in-place orders had a drastic impact on California's small farmers and ranchers, who relied on these outlets to buy large quantities of their products (Sparling 2020). At the same time, public demand to purchase farm products directly from their local farmers skyrocketed, as seen in the unprecedented boom in community supported agriculture (CSA) subscriptions (Westervelt 2020). When making decisions about how to stay in business during the pandemic, farmers faced uncertainty about rising costs, the longevity of shelter-in-place orders, the permanence of consumer demand for direct sales, and the challenges of making last-minute adjustments to business plans (Sparling 2020). While farmers' business decisions in response to the pandemic varied widely, this project explores how California's agritourism operators responded and seeks to better understand the relationship between participation in agritourism and the resiliency of small farms and local food systems.

Agritourism, including direct-to-consumer sales, is an increasingly popular strategy for small-scale farmers to increase and diversify revenue and connect



Agritourism operators were able to stay afloat during the COVID-19 pandemic by providing farm products, on-farm recreation, and educational opportunities to the public. *Photo*: Elena Zhukova.

Agritourism, including direct-to-consumer sales, is an increasingly popular strategy for small-scale farmers to increase and diversify revenue and connect with the public.

with the public. Although emerging research indicates that there is more to learn about the profitability of agritourism as an independent enterprise, studies find that agritourism can increase whole farm income, as well as provide a market for farm products and a tool for engaging the public in the food system (Brune et al. 2020; Hollas et al. 2021; Khanal and Mishra 2014). Diversifying revenue through agritourism is also a tactic for managing the inherent risk of running an agricultural business (Crane et al. 2013). The unique circumstances presented by the pandemic provide an opportunity to analyze the effectiveness of agritourism as a risk-management strategy.

The University of California Division of Agriculture and Natural Resources (UC ANR), first through the Small Farms Program and now through the Sustainable Agriculture Research and Education Program, has engaged in agritourism research and education since the mid-1990s. Agritourism extension efforts in California, pioneered by Ellie Rilla, UC Cooperative Extension (UCCE) Marin County Advisor Emeritus, are rooted in stakeholder engagement and aimed at increasing the profitability of small farms and ranches (Schmidt et al. 2022).

There is no universal understanding of what can and should be considered agritourism; however, researchers have developed a framework conceptualizing agritourism activities as falling within five categories: direct sales, education, entertainment, hospitality and outdoor recreation (Chase et al. 2018). UC ANR defines agritourism as "any income-generating activity conducted on a working farm or ranch for the enjoyment and education of visitors", including on-farm sales, educational activities, accommodations, special events, and outdoor recreation. A 2019 survey (fig. 1) shows that California agritourism operators engage in a variety of agritourism enterprises, with on-farm direct-to-consumer sales representing the most common agritourism activity, followed by on-farm education (UVM 2021).

Rising interest in agritourism

In response to the disruptions in farm operations and the increased public interest in agritourism activities seen in the first several months of the pandemic, the UC ANR Agritourism Program launched a project



A young woman carrying freshly picked root vegetables. *Photo*: UC Davis.

providing resources and trainings for California farmers in adapting existing agritourism operations during COVID-19 and adopting new agritourism and direct sales revenue streams. The project, entitled Strengthening California Local Food Networks with Agritourism and Direct Sales, was funded with support from a USDA Farmers Market Promotion Program grant and implemented in partnership with UCCE and agricultural service groups.

The project began with a series of eight rapid-response webinars on topics such as "Best Practices for U-Pick Operations During COVID-19 and Beyond." The webinars included presentations by agricultural professionals and panel discussions with agritourism operators across California, sharing their experiences of running an agritourism enterprise during the pandemic. Once it was safe to do so, the project offered in-person workshops in targeted regions; this article will draw data from five in-person workshops conducted in Butte, Solano and Sonoma counties. The in-person workshops followed the same format as the webinars, this time featuring locally based speakers. UCCE advisors and other agricultural professionals were consulted to identify speakers who had experience in the specific webinar/workshop topic, would be comfortable sharing their story, and would represent different types of farming and ranching operations, if possible.

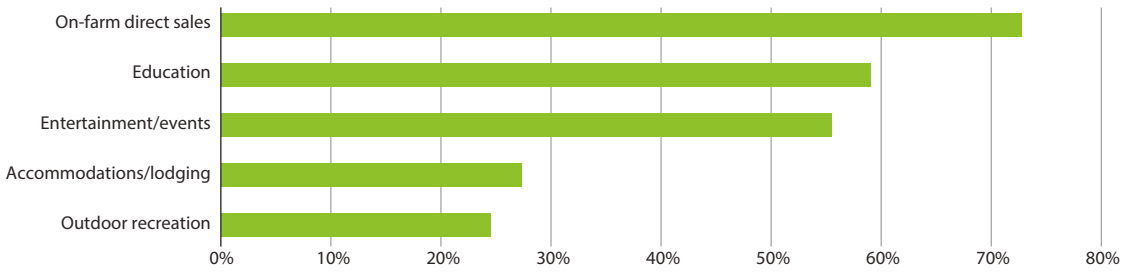


FIG. 1. Types of agritourism enterprises offered by California operators responding to 2019 survey (*n* = 139).

The technical assistance project extended to a research project after the first several webinars, once consistent themes began to emerge from the presentations and attendee participation. It was evident that the impact of the pandemic on agritourism operators — and the opportunities and challenges that it presented — needed to be collected to document the experience of the operators as well as to identify lessons learned for the future.

We collected data through field notes taken while reviewing recorded webinars (eight), during in-person workshops (five), and during pre-interviews conducted with the speakers (20 individuals). Notes outlined themes, examples and anecdotes. Data were also collected through post-training evaluation surveys that were completed by the attendees (93 individual surveys completed). In total, data were drawn from 113 individuals (20 speakers and 93 attendees), collectively referred to as "participants." Data were analyzed for key themes drawn from frequency and level of engagement around topics and then coded. Because many findings are not applicable to all participants and the qualitative approach of the study limited uniformity in data collection, analysis was conducted on subsets of the participant pool, illustrated in tables throughout the discussion. After analyzing the data, we conducted follow-up semi-structured phone interviews with eight speakers to gain a more in-depth understanding of their experiences as it connected to the themes and to obtain additional examples and quotes that would illustrate the findings.

Information about participants' business and experience level was collected during registration. Demographic self-identification was collected through post-training surveys. Providing this information was voluntary, resulting in varying levels of completion. The majority of participants, of the data available, were female, white, and non-Hispanic, with a roughly equal percentage of established and beginning farmers (fig. 2).

Key themes

The results identified two key findings: the importance of on-farm direct-to-consumer sales for the farms' businesses and the increase in demand for on-farm activities.

Direct-to-consumer sales

Direct-to-consumer (DTC) sales played a key role in the business operations of the participants. For the purposes of this project, DTC sales include on-farm direct sales (farm stand and CSA) and online sales with on-farm pickup or delivery. U-pick operations, which are a form of DTC sales, will be discussed below in the Farm Visits Increased section, as their experiences were most closely aligned with participants engaged in on-farm visits. The overwhelming majority of participants experienced an increase in consumer demand to purchase farm products directly from them. At the same time, many participants lost other market channels, such as restaurants, due to pandemic-related disruptions, and turned to direct-to-consumer sales to fill in the gap.

Participant experiences fell within two categories: existing DTC sales enterprises and emerging DTC sales enterprises. Nearly all participants adjusted their operations to manage high consumer demand for DTC sales and COVID-19 safety measures. The extent of the adjustments and the challenges varied but tended to be correlated with the operation's pre-pandemic market outlets.

Already making direct sales

Participants that already had DTC sales as part of their market strategy were in many ways better equipped to handle the increase in consumer demand (table 1). These operations already had a customer base and at

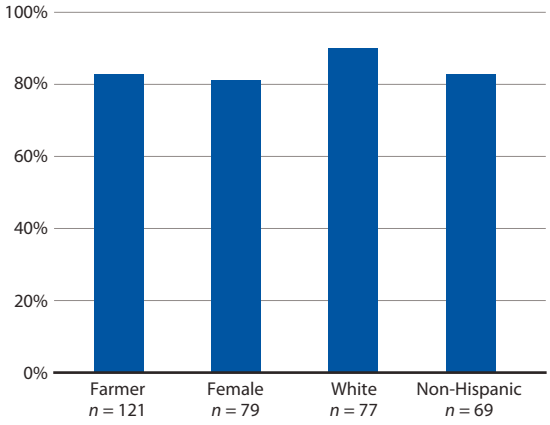


FIG. 2. Demographics of participants, percent of total participants responding to voluntary self-identification forms.

TABLE 1. Existing DTC participants

Experiences during pandemic:	Speakers	Attendees
Increase demand for DTC	100% (18)	91% (59)
Lost market channels	33% (18)	40% (40)
Started/expanded online sales	50% (18)	40% (40)
Made changes to business to comply with health and safety protocols	100% (18)	100% (23)
Challenges:		
Connecting with customers	0% (18)	11% (19)
Communicating with customers	10% (18)	14% (19)
Packaging products	11% (18)	10% (10)
Complying with health and safety protocols	0% (18)	19% (36)
Public health information	27% (18)	23% (13)
Ecommerce	40% (10)	67% (29)
Delivery	100% (2)	56% (9)

Percent of participants that indicated experience/challenge, followed by total number applicable and/or from whom data was gathered.

least some of the hard and soft infrastructure — buildings, signs, packaging supplies, staff, point of sales systems, communication channels — in place to support DTC sales. Some operations expanded to accommodate the increase in demand; others shifted their sales so that DTC became their primary outlet; and the rest kept their sales consistent with pre-pandemic levels, putting systems in place to manage the demand. Regardless of their strategy, participants pointed to incorporating safety protocols and communicating with customers as their primary focus — and at times their primary challenge — during the pandemic.

Adjusting operations to incorporate health and safety protocols was top of mind for all participants, although the approaches to doing so and the challenges created by the approaches differed. On May 8, 2020, the California Department of Food and Agriculture released Guidance for Farm Direct Sales and Pick-Your-Own Operations During COVID-19, providing recommendations for social distancing, increased sanitization, and enhanced services to protect the public from the spread of COVID-19. The state-level guidance was supplemented by county-level guidance and ordinances (CDFA 2020). Generally, participants found it feasible and not cost-prohibitive to comply with the guidance, although some participants indicated that lack of clarity and communication at the county level regarding the requirements was a challenge.

Many operations required minimal adjustment to comply with guidelines, such as erecting signs and providing hand sanitizer. On the other hand, several participants running farm stands significantly transformed their operations to ensure health and safety and to accommodate expansion. Online pre-ordering of farm stand products, with on-farm pickup or delivery, was employed by many participants. The primary challenge identified by participants employing this model was the implementation, expansion, and/or management of the e-commerce technology required to facilitate online purchasing. Managing delivery and resources to evaluate the feasibility of delivery was also identified as a challenge.

Participants within this category attribute pre-existing communications platforms as contributing to their success in navigating changes to their operations and the influx of customers. Communicating with customers about changes in hours and operations, safety protocols, and product availability was essential to maintain safety and ensure customer satisfaction. Of the 41 existing DTC participants questioned on this topic, all reported that they were making changes in real time to respond to changes in health and safety recommendations and product availability, thus increasing the importance of communicating with the public. The communication platforms varied — website, social media, email lists, signs — but it was vital that the systems were already in place and the operations' core customer base knew where to find information.

TABLE 2. Emerging DTC participants

Experiences during pandemic:	Speakers	Attendees
Increase demand for DTC	100% (2)	88% (34)
Lost market channels	100% (2)	100% (34)
Started/expanded online sales	100% (2)	52% (23)
Made changes to business to comply with health and safety protocols	100% (2)	100% (17)
Challenges:		
Connecting with customers	100% (2)	78% (23)
Communicating with customers	100% (2)	65% (23)
Packaging products	50% (2)	75% (8)
Complying with health and safety protocols	0% (2)	12% (17)
Public health information	27% (18)	23% (13)
Ecommerce	100% (2)	74% (23)
Delivery	100% (1)	80% (5)

Percent of participants that indicated experience/challenge, followed by total number applicable and/or from whom data was gathered.

Adding direct sales

Participants that did not have previous experience selling direct-to-consumer faced more challenges than their counterparts (table 2). The majority of this group had been selling their farm products to hospitality industry clients — restaurants, hotels and spas — and lost all or most of their business due to the pandemic. With the collapse of their market channels, participants turned, or were considering turning, to direct-to-consumer sales. This group did not have much of the hard and soft infrastructure for DTC sales. Connecting with customers, packaging products for sale to individuals, and establishing systems to accept payment and e-commerce were identified as the leading challenges.

Despite customer demand, most of the participants had no established connection with the public. Many did not have websites, social media accounts, or a history of being open to the public. A variety of approaches were used to find a customer base, including partnering with other DTC farms, investing time and resources in creating a web presence, and utilizing the resources that emerged during the pandemic to connect the public to local food sources. In recognition of the need to connect farmers to consumers, many agricultural service providers, hunger relief organizations, and others launched tools and resources to bridge the gap. For example, Sonoma County Farm Trails, a nonprofit with the mission of connecting the public to the local agricultural community, added a page to their website where member farms could post their offerings (Hiller 2020). Though connecting with customers was an impediment, participants in this project indicated that they were able to overcome the challenge.

Another challenge faced by the new DTC operators was packaging their farm products for sale to individuals, rather than selling in bulk. Identifying appropriate volumes and subsequent pricing and obtaining packaging materials amongst supply chain disruptions were

identified as significant barriers. For example, one participant's business sold bulk meat, whole or half cut, to restaurants. Since most individual consumers are not prepared to process meat in this form, the business worked with their butcher to cut and package smaller portions. Their processing costs increased; however, they were able to sell their product at the higher price point of DTC, rather than wholesale.

Finally, establishing systems for payment and e-commerce was perhaps the most vigorously agreed-upon challenge. Many participants had previously sent invoices to clients and received payment by check or ACH. These participants did not have point-of-sale (POS) systems to accept credit card payments from individual customers. In addition, the majority did not have an e-commerce platform to make online sales. Because participants in this group did not have an established customer base coming to their farm for on-farm sales, online sales and e-commerce were employed at higher rates than the participants with existing DTC enterprises. Delivery tended to be of higher interest to this group as well. Not surprisingly, these participants indicated the technical barriers of e-commerce as a leading challenge.

Farm visits increased

Participants offering on-farm activities, such as U-pick and farm tours, experienced a significant increase in demand from the general public (table 3). At the same time, health and safety guidance or ordinances called for social distancing and limited crowd sizes (CDFA 2020). The ability of participants to modify their operations to account for these opposing factors, as well as the impact on their revenue, appeared to be correlated with the soft infrastructure that was already in place, as well as the types of visitors and on-farm activities that were central to their business before the pandemic.

The major factor in hosting on-farm activities, as identified by the participants, was maintaining health and safety protocols, especially pertaining to limiting crowd size. The majority of participants used online reservation systems to control crowd flow. Many participants offering farm tours already had this system in place, while most of the U-pick operations launched the system during the pandemic, which caused technical challenges for participants. Once visitors were on the farm, social distancing was maintained through signs, staff intervention, and adjustments to the existing layout, such as separating the check-in table from the supply pickup table and limiting harvesting to every other row. Operations that were managed with a "hands-on" approach before the pandemic tended to have the staffing and crowd flow infrastructure already in place, resulting in an easier shift than the operations that were previously managed with limited staff and visitor oversight.

Increased public demand did not always equate to increased revenue or an increase in total visitors. The necessity to limit crowd size typically resulted in offering more visitation windows with fewer visitors in each window, resulting in the net number of visitors remaining the same or fewer than before the pandemic, although the time and effort for the operator remained the same or increased. A few participants did expand their operation to accommodate an increase in visitors, by opening on more days and, in the case of two operators, planting new U-pick fields; however, the majority of participants either chose not to or did not have the capacity to expand. Many participants raised their prices to reflect increased operational costs (registration management and sanitation). This typically offset the losses in total visitors, resulting in equal or slightly higher net revenue than before the pandemic.

On the other hand, participants that relied on institutional visitors (school groups, summer camps, or corporate groups) and international visitors experienced significant loss in revenue and visitor totals. In some cases, participants were able to shift their strategy to attract local individuals and families, but most participants still operated at a net loss or just broke even. Similarly, participants whose operations were structured around a limited number of high traffic days (such as pumpkin patches) or large events (such as weddings) reported operating at a loss or break-even level, as reducing crowd size either was not feasible or did not offset operational costs.



A U-pick farm in Santa Cruz County. Visitor demand to visit farms increased significantly during the pandemic. *Photo*: Melissa Kopka, iStock.com.

TABLE 3. Participants offering on-farm activities

Experiences during pandemic:	Speakers	Attendees
Increase demand for on-farm activities	100% (12)	85% (47)
Started pre-registration	66% (12)	70% (40)
Made changes to business to comply with health and safety protocols	100% (12)	81% (31)
Lost revenue from on-farm activities	0% (12)	22% (23)
Challenges:		
Communicating with customers	25% (12)	39% (31)
Complying with health and safety protocols	25% (12)	45% (31)

Percent of participants that indicated experience/challenge, followed by total number applicable and/or from whom data was gathered.



On-farm direct-to-consumer sales were an important part of farmers' businesses during the COVID-19 pandemic. *Photo*: Elena Zhukova.

Lessons from the pandemic

The pandemic provided a look into how agritourism can contribute to small farm viability. This project found practical takeaways for agritourism operators, as well as areas that need more research and attention by agricultural professionals.

In particular, our research points to the importance of market and enterprise diversity for small-farm resiliency. Participants with various market channels, more than one agritourism enterprise, and/or diversification within their agritourism enterprise reported that their businesses were less negatively impacted than their counterparts. For example, one participant selling wholesale flowers lost business when its distributer went out of business, but the impact was reduced by the revenue generated through other activities, including farm visits. Responding to disruptions was also easier, as participants could shift more resources to the viable aspects of their business, rather than building a new venture from the ground up. For example, one participant had been selling products to restaurants and at its farm stand. After losing the restaurant outlet, it sold all products at the farm stand and invested in safety, efficiency, and customer satisfaction. Participants reported that the disruptions caused by the pandemic instilled or reinforced the importance of diverse market channels and revenue streams. Several participants that turned to DTC sales after losing all their wholesale business are revisiting their business plans to incorporate a mix of market channels.

This finding supports the view of agritourism as a risk-management strategy — a view that is held by many agritourism research and extension professionals (Crane et al. 2013). Outside of future public health crises, California's small-scale farmers have been experiencing disruptions due to disasters such as drought and fire, and very likely will continue to face these challenges. Future research could evaluate the potential of agritourism to increase the resiliency of small-scale farms in the face of such disasters and findings could be used by extension professionals, regulators, lenders and insurance agencies to support the development of agritourism as a risk-management strategy.

Learning to use e-commerce

In addition to identifying more opportunities for agritourism in the future, small-scale farmers said that during the pandemic, resources quickly emerged to help them identify challenges and opportunities for more online sales and farm-direct deliveries. These included the Community Alliance for Family Farmers Small Farm Tech Hub, which provides free resources and consultations for small-scale farmers, food hubs, and farmers markets in California (CAFF 2020). In this context, participants discussed their successes, failures and uncertainties about incorporating online sales and delivery into their operations. On one hand, consumers have continued to buy food online post-pandemic. On the other hand, the public has shown an interest in the on-farm experience. A common denominator is a quickly changing landscape of e-commerce platforms. In this landscape, continued technical assistance and research are needed to assist farmers in making informed decisions about engaging with online sales and delivery (Held 2020).

Managing visitors

Many participants expressed surprise and gratitude for the public's interest in visiting their farms. One participant noted, "We open our visitor slots and they sold out in minutes. We had a waiting list. I never expected that. But I think sometimes we take for granted the farm life and don't understand why anyone would want to drive hours to spend time here. It's a nice reminder of how special this is." While the demand for farm visits during the pandemic was unprecedented, the social benefits that farmers receive from participating in agritourism are well documented. Numerous research findings have identified social factors, such as customer interaction and the ability to educate the public, as a motivation for farmers and ranchers to participate in agritourism (Quella et al. 2021).

At the same time, when asked which pandemic-era operational changes they would keep, many participants expressed their satisfaction in using pre-registration for farm visits, finding it easier to plan and control crowd flow. Several also plan to keep crowd sizes smaller than their pre-pandemic levels, citing a better visitor experience, less stress on plants (for U-pick operations), and a calmer and more sustainable management experience. In the words of one participant, "Before the pandemic, one Saturday there were like 500 cars lined up outside of our gate. It felt like Lollapalooza on our farm every weekend that summer. I was stressed, my staff was stressed. It was unhealthy and unsustainable. After experiencing the tranquility of the past couple of years [2020–2021], I can't go back."

There exists a tension between managing a working farm and operating an agritourism enterprise. Inviting the public onto one's farm presents many challenges, including liability concerns, traffic, opposition from

neighbors, and balancing time between farm tasks and running an agritourism enterprise. Pre-registration could be one strategy to ease this tension.

As enterprise and market diversification are being considered by the farmer, the challenges must be assessed alongside the social and economic benefits. Agricultural professionals and others encouraging farmers to engage in agritourism must also understand and work to address the challenges faced by agritourism operators. Of note, a recent regional comparison of challenges identified by agritourism operators found that farmers in the West were 2.1 times more likely to experience challenges from city and county zoning and permitting (Wang et al. 2022). This finding is consistent with California-wide survey results conducted in 2009 and 2015 (Hardesty and Leff 2020). The persistence of this challenge warrants attention.

Equity in agritourism

The participants in this project — existing agritourism operators and farmers who were able to pivot their operations to direct-to-consumer sales — identify as majority white and non-Hispanic. Consequently, the results may not be representative of the experiences of Black, Indigenous, or people of color (BIPOC) farmers. On the contrary, reporting shows that many of California's small BIPOC farmers experienced significant barriers, including technological and linguistic, in pivoting their operations during the pandemic, highlighting existing inequities in the system (Ricker 2020). This raises questions, and the need for more research, about the demographics of agritourism operators, the reach and accessibility of agritourism extension efforts, and the opportunities and barriers for BIPOC farmers to participate in agritourism and DTC sales. As this study suggests that agritourism and market diversification contribute to the viability of small farmers, assessing these risk-management strategies through an equity lens is essential for advancing the viability of all of California's small farmers.

Agritourism as a safety net

Agritourism played an important role in the livelihood of California small-scale farmers during the pandemic and demonstrated how agritourism can serve as a viable risk-management strategy. Agritourism operators were able to stay afloat by providing farm products, on-farm recreation, and educational opportunities to the public. This helped maintain the viability of the food system as a whole during the pandemic. More research is needed to better understand the role agritourism can play in future disasters and to ensure equity in the industry. Farmers can also benefit from business development technical assistance to support decision making related to enterprise diversification and e-commerce. CA

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