

# The grass is greener: Farmers' experiences with pastured poultry

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## Abstract

Rearing poultry outdoors on pasture for egg and meat production is a growing industry in the USA. However, little has been written on farmers' experiences with this practice. This paper presents the results of in-depth interviews and surveys with 18 California pastured poultry producers (62% response rate). Although the sample size of growers is small in absolute numbers, it represents 62% of nearly all pastured poultry growers in California, a state known for the pioneering work of growers who specialize in alternative agricultural practices. Such alternative systems merit critical analysis in order to refine their implementation and contribution to sustainable food production. This research aims to provide such critical analysis of pastured poultry production, a highly innovative and emergent practice. Growers were queried concerning the values that brought them to participate in alternative animal production, the benefits and challenges of integrating pastured poultry into farming operations, the use of heritage and industrial breeds, and management practices. Results showed that the influence of Joel Salatin, farmer and author of *Pastured Poultry Profits*, tied with farmer desire to sustainably produce meat and/or eggs as the main drivers respondents gave for raising pastured poultry (39% each). Farmers reported the primary benefit of pastured poultry was soil fertility (61%), followed by marketing appeal (44%). The most commonly cited challenge to pastured poultry growers was predation of birds (44%) followed by cost of feed (22%). Pastured poultry were directly profitable to 50% of farmers, although 78% of respondents cited indirect profits through savings on items such as fertilizer and pest management. This paper places these results in the context of value-laden farmer decision-making.

**Key words:** poultry, pasture, alternative food network, farmer, eggs, survey

## Introduction

Livestock sit at conflicting crossroads in the USA; one road is defined by ultra-efficient confined production and the other road reaches into an older history, pre-1920s, when animals were raised outdoors as a matter of course<sup>1</sup>. The second path re-emerges today in pasture-based livestock agriculture. At this uneasy crossroads, former vegetarians are doing the slaughtering and most sales transactions happen under the radar of agricultural statistics, involving no more than producer and consumer. Pastured livestock are a rapidly growing sector of alternative agriculture<sup>2</sup>. Portrayed as a form of meat and animal product production that allows natural animal behavior and positive environmental outcomes, pastured livestock enterprises contain 'embedded qualities'<sup>3</sup> of naturalness and environmental soundness at the core of their identities. In pastured animal production, the 'moral economy'<sup>4</sup> is emphasized over ultra-efficient production successes that define US industrial meat and animal production. This paper reports on one particular pastured livestock, poultry and growers'

experiences with profitability, whole-farm management and ethical dilemmas in this emerging 'alternative agro-food network'<sup>5</sup>.

### *Alternative poultry production*

Alternative meat production is one of the fastest-growing sectors of the US food system with organic poultry comprising 60% of this growth<sup>6</sup>. Twelve percent of consumers in the USA regularly purchase organic poultry and 15% buy organic eggs<sup>7</sup>. Poultry is considered a gateway food in the organic sector with consumers' first purchasing organic poultry and then other organic products<sup>6,8</sup>. Similar to organic poultry, pastured poultry are promoted as humanely raised, environmentally friendly and beneficial to food nutritional quality<sup>2</sup>. Pastured production differs from organic management, however, in that poultry live on and consume pasture, whereas organic regulations stipulate only that birds have access to the outdoors. Pastured poultry are raised outdoors and fed a grain-based diet that is naturally supplemented when birds graze their pasture<sup>9</sup>.

Studies regarding pastured poultry are few and primarily address meat and egg quality. For example, Ponte et al.<sup>9</sup> found that pasturing poultry significantly increased the *n*-3 (omega-3) fatty acid content of meat, whereas Karsten et al.<sup>2</sup> found higher vitamin A, vitamin E and *n*-3 fatty acid content in eggs from pastured poultry in comparison to caged birds with no access to pasture. These studies shed light on product outcomes in this new industry but do not assess grower outcomes of participation with a new alternative agricultural practice. Analysis of farmers' experiences with pastured poultry is critical to assessing areas for future research and to informing alternative agro-food network theory.

### *The farmer experience of alternative animal production*

Growers that raise pastured poultry are participants in a new management practice. Although poultry have been reared outdoors for centuries, the practice of raising poultry for commercial sale at scale without confinement is a new one<sup>10</sup>. The conventional poultry industry in the USA is characterized by high efficiency, confinement and extreme vertical integration<sup>10</sup>. Pastured poultry growers face steep price competition with the conventional industry and must rely on niche marketing<sup>10</sup>. In order to analyze growers' experiences with this new practice, the objectives of this research were: (i) to explain what drives farmers to participate in pastured poultry production, (ii) to describe the benefits and challenges farmers experience and (iii) to analyze the most contentious debates between grower participants in the emerging pastured poultry alternative agro-food network.

## **Methods**

This paper reports on the results of a survey that queried farmers on firsthand experiences with pastured poultry agriculture in California. Survey administration occurred between April and August 2010. All pastured poultry growers in California were sought for inclusion in the study, a small group given the newness of the practice (Fig. 1). Requests for participation were sent out to all poultry farmers in the California Eat Wild network (<http://www.eatwild.com>). Additional requests for participation were sent to all pastured poultry farmers found via the California Certified Organic Farmers (CCOF) database and by word of mouth. The response rate for the survey was 62% of 29 requests for participation. The survey was delivered via two channels, in-person administration or online completion. Thirty-nine percent of growers opted for in-person survey completion, whereas 61% completed the survey online.

The survey instrument addressed background information regarding location of farm, organic certification, quantity of farm animals and acreage of crops. Producers were asked to comment on the benefits and challenges

of raising poultry as well as on specific management practices (e.g., managing predators and maintaining pasture). Farmers were then asked to comment on the profitability of pastured poultry and what stimulated them to raise pastured poultry. All questions were open ended allowing farmers to provide as much information as they preferred. A copy of the survey will be available at: <http://www.surveymonkey.com/s/VDNWKMQ>.

Survey responses were coded by topic (<sup>11</sup>: p. 400). For example, responses to the question on what inspired farmers to work with poultry were coded as 'exposure to Joel Salatin', 'profitability' and 'pest control'. Themes and relationships between coded variables were assessed quantitatively. For example, profitability was analyzed for a relationship to farm product (e.g., meat versus eggs). Data could not be analyzed by geographic region because using word of mouth to find survey participants necessarily skewed the geographic range of respondents to the Santa Cruz, California area, the location of the author's university. The following equations were used to calculate breed richness. Breed diversity was calculated as

$$R = C_a + C_b + C_{...}$$

where  $R$  is breed richness and  $C$  represents a count of 1 for each distinct poultry breed. The average breed richness across all farms was calculated as:

$$\bar{R} = (\sum R_1, R_2, R_{...})/F$$

where the sum of breed diversity at each farm was divided by  $F$  for the total number of farms. Finally, each breed's relative abundance was determined as:

$$A = (N_c)/(\sum R_1, R_2, R_{...})$$

where  $A$  is abundance,  $N$  is the number of farms with a particular breed,  $C$ , and the denominator accounts for the total breed richness of all farms.

## **Results**

### *Farm information*

Eighteen pastured poultry farms participated in this study, all located in the state of California. Thirty-three percent of farms were certified organic, but 58% of non-certified farms specified that they used organic practices. All farms had layers; the average number of birds/year/farm was 591 (range = 50–3000; median = 300). Sixty-seven percent of farms also raised meat chickens; the average number of birds/year/farm was 5066 (range = 200–20,000; median = 1150).

### *Drivers of pastured poultry*

The influence of well-known farmer, Joel Salatin, tied with the desire of farmers to sustainably produce meat and/or eggs as the primary drivers California survey respondents gave for raising pastured poultry (Table 1). Following those



**Figure 1.** Map of California counties where the survey was administered.

two reasons were a suite of responses related to the role of poultry at the farm-scale, such as improving soil fertility with manure, birds cleaning up fruit and vegetable waste on farm, and chickens aiding in pest management through predation. Other farmers were motivated to raise pastured poultry because of perceived profitability.

### *Benefits of pastured poultry*

Farmers were asked what benefits they experienced from having poultry (Table 2). The top response was soil fertility, and approximately one-third of respondents went on to say that enhanced soil fertility contributed to better crop and/or pasture growth. Other common responses were with regard to marketing benefits and the production of

quality food as a benefit. Many growers also commented on the intrinsic value of animals as a benefit.

### *Pastured poultry profits*

Growers responded with lengthy qualitative responses to the question, 'Has raising poultry been a profitable endeavor for you? Why or why not?' Fifty percent of farmers reported *direct* profitability from pastured poultry. There was no interaction between profitability and whether a farm had meat chickens versus layers or whether a farm was certified organic. In response to the same question, 78% of growers reported that pastured poultry were *indirectly* profitable because they attracted new customers to the farm, enhanced customer loyalty and contributed to

**Table 1.** Reasons given by farmers for deciding to raise pastured poultry.

Reason	Percentage of farmers giving this reason (%)
Exposure to Joel Salatin	39
Desire to produce sustainable meat and/or eggs	39
Pasture poultry are a good fit with other farming operations	22
Profitability	22
Animal person	22
Soil fertility	22
Exposure to other farmer with pastured poultry	17
Poultry clean up vegetable and fruit waste on the farm	11
Educational purposes	11
Pest control	6
Desire to raise a food with high protein	6
Unique product	6

savings on fertilizer, fuel and pest control. Specifically, 44% of respondents reported marketing advantages in response to this question.

### Challenges to pastured poultry growers

The top issue for pastured poultry growers was carnivore predation of birds, with 44% of growers commenting on this in a question regarding challenges (Table 3). Besides predators, pastured poultry growers were challenged by costs and labor, food safety concerns, the ability to handle large quantities of feed, regulations, pasture growth, a lack of background and constructing appropriate infrastructure.

### Chicken breed diversity

Breed diversity was higher for hens than for meat chickens, both across all farms and within farm. Among all farms, 21 breeds of layers were represented; the average breed richness per farm was 4.3. Table 4 shows the breakdown of richness by breed.

Far fewer breeds made up the diversity of meat chickens; six breeds were represented across all 12 farms surveyed with meat chickens. Of these, the industrial Cornish Cross represented 47% of all breed richness and was reared on 58% of the farms. Freedom Rangers (a.k.a. Colored Rangers or *Poulet Rouge*), a bird known for its livability on pasture, represented 27% of breed richness. K-22's, Plymouth Rock/Brit hybrid, Slow White Broilers and Slow Red Broilers were all reported by one farm each.

## Discussion

### Farmer identity: the productivist meets the activist

Just as the consumer faced with a refrigerated case of eggs bearing labels such as cage-free, organic and local must

**Table 2.** Benefits described by farmers of raising pastured poultry.

Benefit	Percentage of farmers citing this benefit (%)
Soil fertility	61
Marketing	44
Production of quality food	44
Intrinsic value of animals	39
Better crop and/or pasture growth	28
Profitability	28
On-farm diversity	22
Weed control	17
Feels better for the environment	17
Pest control	17
Education	11
Soil tillage	11
Lifestyle	6

grapple with values and definitions of sustainability, so too must pastured poultry producers struggle when implementing their values on the ground. Production imperatives sometimes conflicted with activist strategies in the survey responses, forcing farmers to place their values in a hierarchy of importance<sup>12</sup>. Growers critiqued each other regarding the relative morality and cost of breed type, pen type, organic versus conventional feed and other aspects of management. For example, some farmers argued that conventional grain was the key to profitability while others refused to use feed grown with synthetic products and genetically modified organisms. Other growers stood squarely behind raising heritage breeds, whereas some argued that the industrial breeds should only be used because they are more efficient at converting feed to meat or eggs. The juxtaposition of values with the economic reality of pastured poultry challenged producers as they tried to implement sustainability on the ground, yet growers were driven to raising pastured poultry by the desire to produce food with ethical attributes. Growers were also driven by the influence of one particularly outspoken advocate of pastured poultry, Joel Salatin.

### Why pastured poultry?

Joel Salatin, a rancher from Virginia, leader in pastured meat chicken production and author of *Pastured Poultry Profits*<sup>13</sup>, was a main driver for farmers to raise pastured poultry. He captured the public's imagination when he was featured in the bestseller, *Omnivore's Dilemma*, by food journalist Michael Pollan<sup>14</sup>, and his impact on the swiftly growing pastured poultry movement cannot be underestimated. He emerged as an opinion leader in this survey, inspiring many of the survey respondents to enter into the new pastured poultry industry.

One of Salatin's most pivotal contributions to pastured poultry production has been a floorless moveable field pen, also called a chicken tractor. Moveable pens were

**Table 3.** Challenges described by farmers to raising pastured poultry.

Challenges	Percentage of farmers citing this challenge (%)
Predators	44
Cost of feed	22
Too much work/cannot take vacations	17
Cost of organic feed	17
Not profitable	11
Cost of labor	11
Food safety concerns	11
Handling large quantities of feed	11
Regulations	11
Pasture would not grow	11
Lack of background	11
Infrastructure	11
Cost of insurance	6
Sales and marketing	6
Weather/climate	6
Disease	6
Lack of local breeders	6

developed as a solution to the problem of meat chicken susceptibility to predators in pasture-based systems. Salatin's 3 × 3.7 × 0.6 m floorless pens house 75–90 meat chickens and are moved daily, affording birds access to pasture, insects and dust, the three main components in natural bird behavior. Salatin's style of pastured poultry is controversial, however. Although the pens do protect birds on pasture, they also represent a form of semi-confinement, which is an animal welfare issue for some growers and consumers.

The other controversial aspect of Salatin-style pastured poultry production is that he promotes the use of the Cornish Cross, the principal industrial breed for meat chickens. Cornish Cross birds have an excellent capacity to convert feed to body mass, reaching harvest weight in 6–8 weeks<sup>15</sup>. However, they are bred for confinement and not pasture-based systems. Although they can survive and sometimes thrive in pasture-based systems, they may have higher mortality, greater incidence of heart disease and more leg problems than slower-growing varieties<sup>16</sup>. Despite the health issues of Cornish Cross birds, they can be a profitable choice for pasture and for confinement alike because of their grain-to-meat efficiency<sup>16</sup>.

### *Chicken breed diversity*

The great efficiency of the Cornish Cross was reflected in the breed diversity results, which showed higher diversity for hens than for meat chickens, both across all farms and within farm. Among all farms, 21 breeds of layers were represented. Rhode Islands and Plymouth Rocks topped the list and are known to be prolific layers of brown eggs. Ameraucanas were third on the list; they are reliable layers of blue eggs, a trait that helps growers market a colorful

**Table 4.** Hen diversity and abundance of breed type among all farms.

Breed	Abundance across all farms (as measured by % of total breed richness)
Rhode Island	12
Plymouth Rock (a.k.a. Barred rock)	11
Ameraucana	11
Star (a.k.a. Red and Black sex links)	9
Araucana	8
Leghorn	8
Delaware	5
Wyandotte	5
Andalusian	3
Australorp	3
Bantam (all true Bantams)	3
Marans	3
Naked Neck (a.k.a. Turken)	3
Orpington	3
Welssummer	3
Buckeye	2
Golden Nugget	2
Hyline	2
New Hampshire Red	2
Production Reds	2
Sicilian Buttercup	2
Unknown mixes	2

dozen. Stars were the fourth most abundantly represented breed; they are also prolific layers of brown eggs and are valued by hen growers because they can be sexed by their color as chicks. Far fewer breeds made up the diversity of meat chickens. Of these, the industrial Cornish Cross represented 47% of all breed richness and was reared on 58% of the farms.

These disparate diversity results are explained by efficiency imperatives. There are many varieties of layers that can efficiently convert feed and forage to eggs, whereas Cornish Crosses are currently the most efficient meat chickens. As fast growers, they are less expensive to rear to market weight than slower-growing breeds<sup>16,17</sup>. This creates a paradox for pastured meat chicken producers. They may be endeavoring to satisfy animal welfare criteria, but economic imperatives push them toward selecting industrial genetic varieties with lower livability on pasture than slower-growing varieties. This paradox is inextricably tied to the chicken digestive track and the cost of feed. Chickens, unlike ruminants such as cows, do not fit comfortably into the grassfed world. Poultry do not have the digestive system of ruminants that allows them to digest fiber and convert grass into energy<sup>18,19</sup>. So although pasturing poultry does increase the nutritional content of meat and eggs<sup>2,9</sup> and affords access to protein from legume foraging and invertebrate predation, it does not reduce the amount of carbohydrates required by poultry, meaning that poultry growers must supplement pasture with grain-based

feeds, which can be expensive. In California, organic feed can cost nearly twice as much as conventional feed; typical conventional feed sells for  $\$0.53 \text{ kg}^{-1}$  ( $\$0.24 \text{ lb}^{-1}$ ), while organic feed costs  $\$0.97 \text{ kg}^{-1}$  ( $\$0.44 \text{ lb}^{-1}$ ). Growers in this alternative agro-food network, then, are caught in the space of justifying every choice as they solve for myriad unknowns, prioritized on values at times productivist and at times activist.

### *The grass is greener: indirect profits*

Although the top reason that growers cited for choosing to raise pastured poultry was the influence of Joel Salatin and his *Pastured Poultry Profits*<sup>13</sup> book, in this survey, only 50% of farmers reported *direct* profitability from pastured poultry. However, pastured poultry were *indirectly* profitable to 78% of surveyed growers because they attracted new customers to the farm, enhanced customer loyalty, and contributed to savings on fertilizer, fuel and pest control. One farmer said of indirect profits, ‘With the price of the organic feed we usually come just over break even price. However if we factor in the value of what we’d have to pay for a fertility or bug control program then it still makes sense’, and another responded, ‘We make \$6 per bird, but the fertilizer makes it worth it’. Growers reported both that chickens directly fertilize soil and that droppings are used as an ingredient in compost. ‘[We see an] improved topsoil ecosystem. [The] grass is darker green, grows taller, and soil retains moisture longer because of chickens, pasture, not spraying and not tilling’.

On a farm-finances scale, poultry were described as indirectly profitable because of their contribution to the overall marketability of a farm. Farmers said things like, ‘[Having pastured poultry] builds customer loyalty because we have a product year-round’, ‘Customers love ethical products’, and ‘We stand out more [than crop-only farmers] at farmers’ markets’. To stand out in a direct marketing environment such as a farmers’ market or CSA (Community Supported Agriculture), growers have to ‘embed values’ into the food they grow and sell<sup>20</sup>, a process abetted by the advertisement of an ethical product. Consumers, especially in a direct-marketing environment, may be likely to align themselves with producers whom they perceive as having similar values. Animal products are also a unique item at farmers’ markets, where fruits and vegetables are more common. One such grower said, ‘You might even think of it as partly an advertising expense’.

Growers also cited the production of safe, high-quality food among the benefits of raising pastured poultry, saying things such as, ‘We eat safe healthy and wholesome food, as do our customers’. Developing a niche in this setting can be critical to successful marketing<sup>21</sup>. In terms of overall profitability, then, the results of this study suggest that pastured poultry combine well with other farming activities and are best suited to diverse farms where the benefits of soil fertility and customer loyalty add value to other products.

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