



## Raising Poultry for Profit: Small-Scale Production<sup>1</sup>

For those considering small-scale poultry production of meat or eggs, there are many factors involved in being successful! Small-scale poultry production refers to operations that generate less than \$100,000 per year in gross sales, and raise a small flock of birds, typically fewer than 100, for commercial purposes. In this fact sheet, chickens are discussed as the most common type of poultry operation, although many of the same management principles apply to ducks and other poultry species. A 2011 USDA study showed that nearly 17% of all agricultural operations included poultry, often in combination with crops and other livestock species (most commonly beef cattle).<sup>2</sup> Though less than 25% of all operations used any specific marketing claims or labels, 25% of small-scale operators marketed their livestock and poultry as pasture-raised, and 17% marketed cage-free layers.

Given that smaller or more diversified operations may be trying to maintain a greater number of enterprises on one farm or operation, it may be more difficult for those producers to stay on top of good management practices, as well as any requirements necessary to remain in good standing with local government and marketing partners. For example, these small-scale poultry operations may be maintained on a limited number of acres, thus requiring very careful land and animal management. Additionally, many smaller-scale operations are located in areas where agriculture is not the primary land use. Such operations may be in the urban-rural interface, the suburbs or even in towns or cities. This fact sheet will provide a basic overview of production, management and marketing considerations for smaller-scale poultry production, and discuss the relationship between resource stewardship and long-term business viability.

### Develop Viable Markets for Your Products

Good resource stewardship results in practices that you can market to your customers through your promotional information. This is important since small-scale poultry producers will most likely be marketing their products through direct-to-consumer markets, as opposed to conventional marketing through wholesalers and grocers. Today's consumers are increasingly interested in how livestock and poultry are raised, handled and processed. They may look for specific practices or management techniques that demonstrate their concerns are addressed throughout the production process. Second- and third-party certification programs assure retailers and consumers that the products they are buying

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<sup>2</sup> "An In-depth Study of Small-scale U.S. Livestock Operations", 2011, February 2012. USDA, Animal and Plant Health Inspection Service, Veterinary Services, #618.0212..

come from animals raised according to a specific set of treatment and diet standards. Among the more prominent certification programs are:

- Animal Welfare Approved
- Humane Farm Animal Care (HFAC) Certified Humane
- USDA Certified Organic
- Global Animal Partnership
- Food Alliance
- American Humane Certified
- American Grassfed Association (AGA)
- Certified Naturally Grown

In addition, there are emerging market opportunities in ethnic markets such as those designated as kosher (processed and prepared according to the customs and beliefs of the Jewish faith) and halal (processed and prepared according to the customs and beliefs of the Muslim faith). However, the demand for kosher and halal livestock products is often not aligned with the typical livestock production calendar of later fall breeding (see this ethnic holiday calendar at <http://www.sheepandgoat.com/articles/ethniccalendar.html>). Therefore, producing meat chickens for spring holidays is easier than producing them for the winter holidays when you would be feeding your birds into the winter and encountering greater challenges in keeping them warm and fed enough to continue to gain. The investments you would need to make in insulated housing and in feed may be worthwhile depending on the strength of those markets in your area. In any case, market research is essential to ensuring that you have buyers for your products at the times they are ready for sale, and at the prices you anticipate, especially when considering specialty markets. For more information on conducting your own market research, see:

<http://ag.arizona.edu/arec/wemc/nichemarkets/07conductingmarketresearch.pdf>.

There are several issues poultry producers should consider when deciding whether to seek certification, including:

- Benefits—Certification may offer producers opportunities to enter new markets (e.g. specialty food stores and restaurants) that require that their animal products be sourced from humanely raised animals. Producers may also enjoy greater customer interest and loyalty or a premium price at farmers' markets and CSAs.
- Goals— A producer should seek certification from a program whose goals and philosophy align with his/hers, and will provide a benefit to the business. Retrofitting an operation or changing a business plan in a manner that is far from the current mission may cause unneeded stress and result in a “bad fit” in the long-run. The producer also should evaluate the feasibility of meeting the scope and stringency of certification program standards.

- **Animals**—Some programs, such as USDA Certified Organic, offer certification for virtually all domestic livestock, while others, such as Global Animal Partnership, have developed standards for a more limited range of species.
- **Standards**—Certification program standards generally address animals’ living conditions, healthcare requirements, nutrition and water, access to the outdoors/pasture, prohibitions on animal alterations and animal transport and slaughter. However, not all areas are covered explicitly by all programs, and the stringency of standards can vary considerably across programs.
- **Certification Process**—Generally, achieving certification includes the following steps:
  1. Reviewing program standards and fees and determining the feasibility of implementation of any required changes,
  2. Completing a formal application for certification,
  3. Audit of production practices by the certifying organization or a contracted third-party agency,
  4. Reviewing audit results by the certifying organization (in the case of a third-party audit),
  5. If necessary, altering production practices deemed necessary post-audit.
- **Fee Structure**—Most certifications require a combination of application, audit and annual certification fees. Some fees may prove prohibitively expensive for small-scale producers, although reduced pricing is available for some programs. Through the USDA’s Organic Cost Share Program, for example, any certified producer or handler can apply for assistance and receive a maximum of \$750 per year and be reimbursed for up to 75% of annual certification costs. Although Animal Welfare Approved is a free program, it maintains stringent animal welfare standards which will require additional management time to meet.
- **Timeline**—From the time of application, certification typically takes several weeks for most programs. However, the timeline may be extended significantly if changes to production practices are required or, in the case of the USDA Organic Program, if a farm has not been employing organic practices for three years.
- **Production Costs**—Producers may incur increases in production costs as a result of complying with animal welfare standards. Some of the more common sources of increased costs include:
  - a. Larger roaming area per bird
  - b. Increased feed costs
  - c. Alterations or additions to animal facilities
  - d. Changes to animal health care practices
  - e. More extensive record-keeping regarding flock history and production practices

For more information on animal certification programs, see:

[http://create.extension.org/sites/default/files/Animal%20Certification%20Programs\\_final\\_0.pdf](http://create.extension.org/sites/default/files/Animal%20Certification%20Programs_final_0.pdf).

A final consideration in planning for meat or egg production is identifying how you will process the product for direct to consumer markets. Such markets may include farmers' markets, retail and wholesale buyers, restaurants and institutional buyers. Each buyer will have specific tastes and preferences for the product they want to purchase, and meat and certain volumes of eggs must be processed or produced according to federal and state regulations. Packaged retail cuts of meats must be processed in federally inspected facilities (or in facilities where the state cooperates with federal inspectors), and it is often challenging for small-scale producers to find a processor who can work with a smaller volume of product. For assistance in locating a meat processor, see

<http://www.nichemeatprocessing.org/>.

There are two exemptions to USDA processing regulations for small-scale poultry processing. First, if you sell a chicken to your customer before slaughter, your customer becomes the new owner, who then can pay the processor directly. Second, depending on the state where you farm, you may be able to process a certain number of birds on your own farm, for on-farm sales (1,000 birds per year limit) and for retail sales (20,000 birds per year). For additional information, see:

<http://www.extension.org/pages/18947/understanding-poultry-exemptions>.

If you have a laying flock of fewer than 3,000 hens, your eggs are exempt from USDA grading (<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateN&navID=GradingCertificationandVerification&leftNav=GradingCertificationandVerification&page=PYShellEggGradingandCertification1&acct=poultrygrd>), and are covered under your state's laws. If you have 3,000 or more laying hens then you must register your business with the US Food and Drug Administration (FDA-<http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/ShellEggProducerRegistration/default.htm>).

### **Plan for Your Production and Your Markets**

Before marketing your product you should carefully research the breed(s) of birds you will raise and know how you will care for and manage those birds.

There are many different breeds of chickens, some of which are most appropriate for egg production, some for meat, and some known as dual purpose which have reasonable egg production, as well as meat yield. For an overview on chicken breeds, see:

(<http://www.extension.purdue.edu/extmedia/as/as-518.pdf> and <https://attra.ncat.org/attra-pub/poultry/genetics.html>). There is growing interest in heritage chicken breeds for meat and egg production; however, note that conventional breeds of meat birds have been selected for their ability to grow more quickly (that is, convert feed to growth more efficiently), whereas the heritage varieties may take several weeks longer to reach the same marketable size as a more conventional breed.

You must plan carefully for the costs of feeding, housing and caring for slower growing breeds, and review the impact of the additional feed and labor costs versus a smaller overall marketable carcass size. Furthermore, as an egg producing flock ages, it will produce fewer eggs of more variable size. Use breeding companies' web sites to obtain more information on raising their specific breeds. Remember that choice of breed is a business decision; since meat producing birds cannot typically lay enough eggs to be financially feasible laying hens for your business, nor can an egg producing hen grow sufficiently to produce the same yield as a meat bird would.

Choosing a hatchery for obtaining your birds is one of the most important decisions you will make for the health of your flock. A list of hatcheries participating in the National Poultry Improvement Plan—which establishes standards for evaluating poultry breeding stock and hatchery products so they are free from egg-transmitted and hatchery-disseminated diseases—may be found at:

[http://www.aphis.usda.gov/animal\\_health/animal\\_dis\\_spec/poultry/downloads/primary\\_breeders\\_export.pdf](http://www.aphis.usda.gov/animal_health/animal_dis_spec/poultry/downloads/primary_breeders_export.pdf)). Be sure to choose a hatchery whose chicks come from clean stock and one that will vaccinate your chicks for Marek's disease. The ATTRA publication, Meat Chicken Breeds for Pastured Production, provides in-depth information on working with hatcheries.

Hatching your own chicks is also an effective way to increase your flock; however, you must first educate yourself on proper brooding techniques and equipment, as well as ways to reduce the possibility of transmitting poultry diseases to yourself or your workers. For more information on hatching your own chicks, see: <http://www.extension.umn.edu/distribution/livestocksystems/di0631.html>.

You must also be vigilant about protecting your flock from acquiring diseases by thoroughly cleaning poultry housing before introducing new birds, regularly cleaning and disinfecting equipment and supplies (including feeders, waterers, roosts and boxes), and separating your flock by age and by type. Keeping your poultry housing and range area clean is important for protecting your flock from disease, as well as keeping you and any employees safe. For information on understanding poultry diseases, see: <http://edis.ifas.ufl.edu/ps044>. For an overview of cleaning and disinfecting poultry facilities, see: <http://ohioline.osu.edu/vme-fact/0013.html>.

Appropriate nutrition and veterinary care are key to raising healthy birds for marketable products. All poultry require adequate water, as well as a balanced ration of carbohydrates (starch, sugars, and fiber), lipids (fat), proteins, minerals and vitamins. Feed will be the greatest cost in your poultry operation, but it will also promote growth and good overall health, so carefully target feed to the stage of growth and the end product for which you are raising your birds (eggs versus meat). For information on poultry nutrition, see: <http://www.ag.auburn.edu/~chibale/an12poultryfeeding.pdf> and <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/17469/pnw477.pdf?sequence=1>. Supplement feed lightly with grains (scratch) and other foods such as composting vegetables so as to maintain the nutritional balance obtained through the feed rations you are providing to your flock.

Appropriate housing is essential for protecting your flock from weather, disease and predators. This means that you must have well-ventilated shelter for your birds to protect them from precipitation, cold, heat and different types of predators. There are many types of housing and pen systems, but

remember to check with any certifying agency you use to market your end product, as well as with your county and municipality, so that your structures conform to all certification and zoning requirements. A few resources on poultry housing include: <http://pubs.ext.vt.edu/2902/2902-1092/2902-1092.html>, and <http://susdev.appstate.edu/sites/susdev.appstate.edu/files/poultryhousemanage.pdf>.

You must also understand the regulations for predator control in your area (as well as what is acceptable to your neighbors), and the types of predators you are likely to encounter. Both aerial and ground predators present the potential for poultry injury or death, culminating in significant financial loss for your business. Therefore, you need to know which predators will be present in your area, by season of the year. Some of the most persistent predators may be household pets such as your own, or your neighbors' cats and dogs. In part, your choice of housing will help with predator management. For example, pasturing your birds exposes them to aerial predators during the day, while covered pen areas provide the greatest degree of protection. A combination of fencing and guard animals will likely protect your flock but, especially in the case of guard animals, you must be prepared to manage and care for your guard animals also (which may include guard dogs, llamas or donkeys). For additional information on predator control for poultry, see the ATTRA publication on "Alternative Poultry Production Systems and Outdoor Access: <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=222>.

### **Plan for Sound Resource Management**

Your ability to produce a healthy, marketable product from your birds depends on how you manage your land, water and poultry. Consider that good resource stewardship results in a cleaner, healthier production operation which, in turn, makes for more compatible land use with neighboring businesses and residences. There are several key issues that require intensive management: manure produced by the birds you raise on your land, pasture areas for your poultry, water sources on or draining off of your property, and disposal of dead birds.

Manure is a byproduct from your operation that must be proactively managed, either by composting it on-site or disposing of it responsibly off-site. Properly managed, manure or litter resources may be a source of nutrients and organic soil amendment. When manure is not properly managed it can create insect, rodent, dust and odor problems, as well as water quality issues. For information on managing manure from your poultry operation, see: <http://create.extension.org/node/91463> and <http://www.extension.org/pages/17213/storing-manure-on-small-farms-:-good-management-practices>.

Maintaining good water quality in surrounding surface water and wells (a groundwater source), is an important responsibility. Nutrients, such as nitrogen and phosphorus, pathogens, and organic matter in runoff from manure can result in poor water quality. If you are managing other livestock in addition to your poultry, keep in mind that overgrazed pasture can result in eroding soil that can be washed into streams and ponds, potentially contaminating both animal and human drinking water sources.

Understanding the species of grasses your livestock will consume, as well as the carrying capacity of your grazing land, will help you manage your pasture for appropriate grazing intensity. When pastures are properly grazed, water is better able to infiltrate the soil and is less likely to become runoff that

causes erosion. In addition to actively managing potential sources of contamination, regular water quality testing of impacted water sources is key to understanding how well your management plan is being implemented. For information on managing water quality impacted by your poultry operation, see: <http://create.extension.org/node/91463>. For pasture management information, see: <http://www.extension.org/pages/8894/pasture-management-on-small-farms>. For information on water testing and finding an analytical laboratory to assist you in water quality monitoring, see: <http://www.ext.colostate.edu/pubs/crops/00520.html/> (note that this publication also covers soil and manure testing).

Mortalities (bird deaths) are an inevitable part of raising poultry, and it is important to know how you will manage both small-scale and larger-scale (or catastrophic) mortalities within your flock. This means removing the carcasses of your deceased birds and disposing of them according to state and local regulations. Improperly managed carcasses can result in contamination to your remaining healthy flock, water and soil contamination, and human health hazards. The most common methods for carcass disposal include:

- on-farm composting (<http://poultrywaste.okstate.edu/fact-sheets/files/BAE1749%20On-Farm%20Mortality.pdf>),
- rendering,
- on-farm burial, and
- off-site burial/disposal in a landfill.

For more information on livestock mortality management, see:

<http://www.extension.org/pages/19942/managing-livestock-and-poultry-mortalities>.

Biosecurity—taking measures to reduce the probability that an infectious disease or other contamination either deliberately or accidentally affects your operation—is an important issue for any scale of poultry business. For additional information on protecting your birds, your property and your employees, see: [http://www.agrosecurity.uga.edu/annexes/Annex03\\_Procedures.pdf](http://www.agrosecurity.uga.edu/annexes/Annex03_Procedures.pdf) and [http://livestock.colostate.edu/documents/sheep/Sheep\\_Biosecurity.pdf](http://livestock.colostate.edu/documents/sheep/Sheep_Biosecurity.pdf).

Lastly, consider developing an environmental vision for your operation (<http://create.extension.org/sites/default/files/EPS%20packet%20worksheets%20and%20handouts.pdf>) that can help you plan for, document and communicate your stewardship practices to your business partners, your buyers and your neighbors.

### **Ensure Safe Production and Processing to Grow Your Markets**

Careful resource management results in safer production, processing and marketing practices for your livestock business, all of which may be documented and certified for your buyers. Increasingly, buyers (especially for institutional purchases such as farm-to-school and care facilities) are choosing to purchase products from farms with certification in Good Agricultural Practices (GAPs), or other safe food

handling protocols. Following Good Agricultural Practices in managing your poultry, feed and any byproducts (including wastes) reduces the risk of illness among your poultry, keeps your employees safe, and reduces potential contamination of any food products produced and handled within your operation. Example best practices include:

- Keeping poultry housing and manure storage areas away from wells and other water sources
- Documenting the source of any compost you use or generate, as well as the composition, and the process by which it was produced
- Storing manure 150 to 200 feet away from crops meant for human consumption or their handling areas
- Preventing cross-contamination between raw and finished compost by using separate equipment for handling and/or application.
- Transporting poultry to sale or processing facilities in clean vehicles
- Keeping all meat products and eggs at correct temperatures during transportation, handling and storage
- Training any employees in safe handling practices such as hand washing, tool/equipment cleaning and sanitizing, animal management, and food production and storage

For more information on GAPs consult the National GAPs program at <http://www.gaps.cornell.edu/>.

Furthermore, to ensure safe products travel from your farm to your end consumer, make sure you have safe processes in place. Follow these guidelines when handling meats and meat products:

- Handle all raw poultry carefully to prevent cross-contamination.
- Chill to 40°F or less within a specified time after slaughter. Keep poultry products cold (40°F or below) or frozen (0°F or below) during transport.
- The term ‘fresh’ may only be placed on poultry that has never been below 26°F.
- Raw poultry held at a temperature of 0°F or below must be labeled with a “keep frozen” handling statement.
- Raw poultry has a very short refrigerator shelf life and should be frozen or cooked within two days of purchase.

Follow these guidelines when handling eggs:

- Gathering: keep nests clean and gather eggs 3 times/day to keep clean
- Washing: use unscented, food-grade detergent + rinse water; keep water temperature between 110°F and 120°F
- Sanitizing: dip in 120°F water and bleach at 100-200 ppm chlorine (1oz bleach per 1 gallon water)
- Candling: discard meat spots, blood spots and cracked egg shells
- Drying: dry on racks before putting in cartons
- Refrigerating: store between 33°F and 41°F
- Transporting: maintain cleanliness & appropriate refrigeration temperature

Lastly, when handling live birds remember that live baby poultry (chicks, ducklings, gosling and turkey poults) may carry Salmonella. These bacteria may be in their droppings, feathers, feet, or beaks. Therefore, wash your hands thoroughly before handling baby poultry (to protect the poultry from disease you may spread), and wash your hands thoroughly after handling baby poultry (to protect yourself from disease the poultry may spread to you). **After** handling any livestock and **before** entering a food production or handling area, wash your hands thoroughly and change footwear.

### **Understand the Business Environment**

Certain regulations and conditions impact the viability of your business from the start. For example, local land use regulations, commonly known as zoning, can dictate where you may, and may not, operate a poultry business. In areas of low population density (where neighbors may be less impacted by each other's choices) land use regulations may be less stringent in terms of animal agriculture but, in more densely populated areas, local land use codes may influence:

- the number of birds per acre (and your ability to keep roosters as well as hens),
- the species of birds permissible,
- restrictions on flock housing, and
- restrictions on slaughter.

Always present any plans for a commercial poultry enterprise to your local planning and zoning board **early** because they may influence your long-term plans. In fact, their input may be valuable to you before purchasing any birds and making any other business investments such as housing or promotional materials (for example, roadside stands). You may need to obtain a permit to operate your poultry business in your zoning district, and that may entail an annual or one-time fee payment.

In addition, before beginning your business, it is wise to introduce yourself to neighboring landowners since dust, noise, odor, and insects are potential impacts from your poultry operation that may affect your neighbors. Having a plan for managing these potential impacts, and maintaining open friendly communication will help keep good neighbors. For example, covering your composting manure pile with chopped straw, maintaining proper moisture, and turning it only on non-windy days are strategies to help mitigate spillover effects of odor, dust and flies. Lastly, if you are within a homeowners' association, verify that the association allows commercial agriculture to take place on your property.

There are also some activities that are required of any small business. Before attempting to sell your meat or egg products, register your business with your state's secretary of state, and ensure that you have obtained any required licenses to operate your business. These may include a state and/or local sales tax license, income tax withholding account and, if you have employees, contributing to your workers' compensation fund and paying unemployment insurance. See <http://www.sba.gov/content/learn-about-your-state-and-local-tax-obligations> to investigate any tax or licensing requirements in your state. Some states and local governments require additional business licenses.

Thorough research on regulatory and licensing requirements at the federal, state and local levels pertinent to your new business—before you launch it—protects you from making costly mistakes that may delay or prevent you from starting your small-scale poultry operation. Lastly, consider creating a plan to guide your business development. As one example, AgPlan ([www.agplan.umn.edu](http://www.agplan.umn.edu)) offers a free business planning template, complete with examples, to guide you through the process.

Lastly, several states have produced business guides or references for those involved in direct marketing of their products or interested in researching potential opportunities. See, for example:

**Colorado:** [www.cofarmtomarket.com](http://www.cofarmtomarket.com)

**Idaho:** <http://www.ruralroots.org/Resources/directmarketing/handbook/41066-%20Rural%20Roots%20Booklet%20Table%20of%20Contents.pdf>

**Illinois:** <http://www.ilstewards.org/legal-guide-for-direct-farm-marketing>

**Nebraska:** <http://food.unl.edu/web/localfoods/selling-to-consumers>

**New Mexico:** [http://farmersmarketsnm.org/Farmers\\_and\\_Vendors/index.html](http://farmersmarketsnm.org/Farmers_and_Vendors/index.html)

**New York:**

<http://www.nyfarmersmarket.com/publications/ResourceGuideDirectMarketingMeatPoultry.pdf>

**Tennessee:** <http://agmarketing.extension.psu.edu/Retail/PDFs/PB1711.pdf>

**Washington:** <http://agr.wa.gov/marketing/smallfarm/directmarketinghandbook.aspx>