

Organic Livestock Production and Marketing

by David Zodrow and Harold Rachuonyo

Passage of the the National Organic Program's final rule in 2001 marked the beginning of an exciting era of growth for organic livestock production in the United States. The 2001 national standards replaced multiple and often conflicting sets of standards that private and state-sanctioned certifying groups established beginning in the early 1970s. Conflicting interpretations frequently arose on farms and in the marketplace as the various certifying organizations tried to enforce multiple sets of standards. As a result, organic proponents lobbied through the 1980s for passage of federal legislation to establish uniform rules and unite the fractionalized organic farming community. The Organic Foods Production Act was passed in 1990, but it took another 10 years of work by proponents and legislators to produce the 2001 final rule.



Figure 1. Poultry chicks must be raised as organic from the second day of life if they are to be used in organic production. *Photo courtesy of USDA.*

Now organic practitioners are attempting to understand and interpret the

Contents

Writing an Organic Plan—Page 2

Managing Pastureland —Page 3

Acquiring and Caring for Livestock—Page 9

Organic Processing and Labeling—Page 13

NOP Livestock Regulations—Page 15

Recommended Resources—Page 19

final rule. That's no easy task. Although the final rule consists of 26 pages, the National Organic Program's explanations of it take up more than 500 pages. Organic livestock provisions occupy only 2 of the 26 pages contained in the final rule, but the language of those 2 pages is terse and offers little explanation of *how* organic farmers should meet the letter of the new organic law. It will take some time for the involved parties to reach a consensus.

In the meantime, the final rule is helping those involved in the organic industry understand what is generally expected of them in producing, processing, labeling, and marketing organic livestock products. It is also helping them make management decisions that will enable them to comply with the new standards over the long term.

In this publication, we offer a basic introduction to organic livestock production as defined by the final rule. We outline the steps that producers must take to obtain and retain organic farm certification, and we describe how pastures and animals must be managed to comply with the Final Rule:

- **Writing an organic plan.** A farm management plan is the first step toward being certified as a producer of organic livestock.
- **Managing pastureland.** Sustainable and productive pastures for livestock require close attention to forages and their effective use.
- **Acquiring and caring for livestock.** Humane treatment, nutritious feed, and preventive health care are keys to successful production of organic livestock.
- **The final rule.** This section provides the complete text of the regulations in the final rule that apply to organic livestock production. These regulations are enforced by certifying agencies accredited by the National Organic Plan.
- **Recommended resources.** These sources of information can expand a farmer's education and understanding on this complex topic.

Many organic farms combine modern techniques with elements of earlier American agriculture that integrated crop and livestock production.

The two agricultural components complement one another and provide a variety of products that help farmers diversify and generate income year-round.

WRITING AN ORGANIC PLAN

Organic livestock production begins with writing an *organic systems farm management plan*. This is the first step a farmer takes toward the ultimate goal of marketing farm products that bear the U.S. Department of Agriculture (USDA) and certifying agency's official *certified organic* labels. Organic certifiers can help farmers compile these plans. In creating a farm management plan, each farmer must make a comprehensive assessment of his or her farm practices and procedures. Once an organic certifier approves a farm management plan, the farmer must do the following:

- List the farm's production practices and procedures.
- Describe how those practices and procedures will be monitored.

- Explain the record-keeping system that documents organic production.
- List protocols and barriers established to prevent co-mingling of organic products with nonorganic products and prohibited substances.
- Record the composition and source of each substance used on the farm as a production or handling input.
- Address future intentions and improvements.

As part of a farm management plan, the organic farmer must draw an accurate, in-scale map of the farm showing each production area and the acreage in each area. A farm map should depict such characteristics as

- named and numbered paddocks,
- pens and production buildings,
- field boundaries,
- roadways,
- types of land that adjoin the farm,
- what the adjoining land is used for,
- buffer zones established to protect organic production from outside influences, and
- all sources of ground and surface water.

Certifiers will also require farmers to fully describe the histories of animal and crop areas by listing what types of livestock and crops were grown in each area. Farmers also must record what types of inputs, such as feeds and fertilizers, were used in these areas, and whether all of these areas are or have been involved in organic or conventional production.

Adjoining farms and other operations that use prohibited substances are a major area of concern on organic farms. When writing the organic management plan, a farmer must describe the strate-

gies that will be used to address those potential contamination problems through such practices as establishing buffer zones and drainage canals.

MANAGING PASTURELAND

Good farm pastures provide nutrients, minerals, and vitamins that animals require for maintenance and growth. The goals of pasture management include ensuring tender, nutritious forage and effective forage use. This leads to healthy products for the market and a healthy profit per acre.

Forage Production

The forages in a pasture make up the very heart of ruminant livestock production, and they play key roles in sustainable agriculture. While they provide a source of nutrients for animals, forages also cycle nutrients, conserve water, and protect the soil from weather elements that accelerate erosion. They can increase organic matter and soil fertility, improve soil aeration and drainage, and enhance carbon sequestration. They add aesthetic value to the land and enhance wildlife habitat.

Forage growth is influenced by several factors, including soil fertility, pH, texture, organic matter content, rooting depth, weed pressure, and pathogens. How extensively animals graze on different pasture species also varies greatly, depending on such factors as soil fertility, rainfall, length of growing season, and the grazing management imposed.

Efficient forage production is based on sound management practices that strive

to build good soil fertility and structure. These soil traits provide pools of nutrients that cycle freely through the soil and produce healthy communities of plants.

Organic Matter. As we've discussed in other publications within this series, farmers can improve the general health of soil by boosting its organic matter content. Organic matter builds long-term nutrient pools in the soil and creates an efficient soil structure where nutrients and water flow freely to plants. It encourages populations of living organisms that keep the whole biological process going. The overall impact is a healthy soil that produces *thrifty* plants—plants that are better able to survive diseases, pests, and natural occurrences, such as drought.

Organic farmers employ a variety of cultural practices to build organic matter, including composting, use of animal or green manures, forage legumes, crop rotations, rotational grazing, and intercropping. Rotational grazing is discussed later in this publication, and the other cultural practices are discussed in other publications within this series.

When farmers use all of these practices to build a healthy, biologically active soil, they can attain a key goal of organic farming: producing healthy crops and forage for livestock without purchasing commercial organic fertilizers and other amendments. Even when an organic farm is fairly self-contained, it may still be necessary to apply mineral amendments such as lime and other rock powders that contain nutrients not supplied by organic matter and humus.

The Value of Lime

Farmers can increase mineral availability in some soils and enhance legume growth in mixed pastures by simply adjusting pH levels.

Applying lime is a good way to adjust pH levels. Also important as a source of calcium, lime is usually less expensive than many purchased fertilizers.

Fertility. Like all farmers, organic farmers use soil tests and personal observations to make fertility management decisions. They watch for signs of nutrient stress in forage crops. Taking regular walks through the pasture allows them to observe areas where forages grow sparsely or weeds grow more abundantly, thus indicating possible fertility or moisture problems. As familiarity with their farms grows through the years, these farmers are also able to factor in fertilizer needs based on the specific productivity and nutrient cycling capabilities of each pasture.

Organic farmers must use only fertilizers and soil amendments allowed in organic production. This means monitoring all the ingredients in a product to make sure no prohibited substances are used. If the labels on fertilizers or amendments do not contain a full disclosure of ingredients, it is up to the organic farmer to check with the distributor or manufacturer about that information. Organic farmers must keep product labels and records of *all* fertilizer and amendment purchases.

Allowed and Prohibited Fertilizers and Amendments

Examples of allowed fertilizers and amendments

- Plant materials: Crop residues, composts, and wood ash
- Rock dusts: Granite dust, lime, and dolomite
- Animal by-products: Blood meal, bone meal, and feather meal
- Livestock manures: Livestock manure, bat guano, and seabird guano
- Marine products: Kelp, seaweed extract and fish emulsion

Examples of prohibited fertilizers and amendments

- Synthetic fertilizers such as ammonium nitrate, urea, and super phosphate
- Biosolids such as municipal sewage sludge
- Industrial byproducts containing heavy metals or prohibited chemicals

When calculating fertilizer needs for forages, farmers should remember that grazed pastures need less fertilizer than those that are hayed. Animals use up some of the nutrients from the plants they eat. But they return many nutrients to the land in the form of animal feces and urine. This is part of the natural nutrient cycling process. Phosphorus is returned to the pasture primarily in the form of feces, whereas nitrogen and potassium are returned via urine and feces.

Where the site and climate allow it, organic farmers should include legumes, such as clovers, in the pasture mix to increase soil fertility, extend the grazing

season, and improve the overall feed value of available forage. Legumes have higher digestibility and mineral and protein content than grasses. They also add nitrogen to the soil. The bacteria that live in nodules on the legume roots convert atmospheric nitrogen to a form that they can use. This nitrogen is available to nearby plants after the nodules separate from the roots or the plant dies.

Having animals on pasture ensures nutrient cycling, thus maintaining soil fertility by scattering manure over the land. Forage species differ in their response to nutrients, whether applied as fertilizer or animal manure. For example, grasses respond to nitrogen applications with increased growth and concentration of protein, whereas legumes generally show little response to added nitrogen. This difference in response can shift grass-and-legume mixtures towards a higher proportion of grass, which could result in complete loss of the pasture's legume stand. Application of phosphorus and potassium often increase growth of legumes more than grasses.

Forage Selection. When selecting forages, farmers should consider these questions:

- Are the forages adapted to local soils and climatic conditions?
- Can they be established at small expense and do they regrow easily?
- Do they provide abundant growth for a short pasture period or consistent growth over a long period?
- Are they palatable and succulent, so as to be readily consumed, providing nutrients, vitamins, and minerals in relatively sufficient amounts?

- Do they provide good carrying capacity over the grazing period?

Pastures can be permanent, used over long duration (blue-grass, Bermuda-grass, carpetgrass, and Dallisgrass), or temporary (annuals like rye, oats, wheat, and barley). Seasonal crops or crop residues of corn, sorghum, sweet potatoes, and peanuts can also be used for grazing or “hogging down.”

Using Approved Seeds and Sprigs

Organic producers must make sure that:

- Pasture propagation materials, such as seeds and sprigs, are not genetically engineered or modified and have not been treated with prohibited synthetic substances.
- Seeds and sprigs grown on-farm are produced under organic standards.
- At least one year has lapsed before grazing organic livestock on pastures that have been produced using conventionally grown sprigs.

Effective Forage Use

Proper use of different pasture types requires careful consideration. Nutrient intake must be optimized without compromising carrying capacity. Nutrient imbalances can cause metabolic problems for livestock, such as *grass tetany* – a disorder that occurs in cattle when the magnesium in their blood drops below a normal level. When the nutrient load within a pasture is more than that needed to support plant growth, excess nutrients must be captured by harvesting the forage to avoid nutrient leaching into groundwater, contamination of surface waters, and accumulation of toxic levels in the

soil or plants. Harvested forage must have economic value to justify the cost of transporting it out of the area of accumulation to a region where it could be used as feed, which is a way to recycle nutrients without adding to the nutrient load.

Continuous Grazing. Continuous grazing has been the most common pasture management practice in the United States. This practice, however, gradually produces plant communities of less desirable species. When livestock graze without restriction, they eat the most palatable forage first. If these plants are repeatedly grazed without allowing adequate recovery time for roots and foliage, they die. Meanwhile, the plant species not eaten by livestock will generally mature and go to seed. Populations of undesirable plants increase while preferred forage species decline. This effect eventually reduces both pasture quality and quantity. Continuous grazing, however, has the benefit of low capital investment because it requires less fencing and fewer watering facilities than other grazing schemes. It also requires less intensive management.

Controlled Grazing. Continuous grazing is not the only way to manage pasturelands. Innovative *controlled grazing* plans provide opportunities to increase profits. Pastures are subdivided into paddocks, and animals are moved from paddock to paddock at frequent intervals. This gives them access to a limited pasture area for a short period of time. Controlled grazing requires more animal handling and more applied knowledge of forages and pasture-animal interactions than continuous grazing. That is why controlled grazing

plans are often referred to as *management-intensive grazing* (MIG). *Controlled, intensive, and rotational grazing* are all terms loosely used for this type of grazing management.

Pasture rotation allows for sanitation, reduced parasite infestation, faster regeneration of forages, and maintenance of the aesthetic beauty of the farm. A simple guide to rotation time can be based on such factors as rate of forage growth, amount of forage available, and number and size of paddocks.

The times of greatest pasture availability should coincide with periods when animals' nutrient requirements are at their peak, such as in early lactation and during the rebreeding season. Animals can be rotated quickly during periods of rapid pasture growth. Excess forage can also be harvested for later feeding. The decision to move livestock should be based on the rate of forage growth and the amount available. The number and size of paddocks also affect this decision.

Grazing animals should be moved quickly through paddocks during periods of rapid plant growth. For example, in the spring, quick rotations will keep grasses from going to seed, thus preserving forage quality. The strategy can be used to delay haying, hence it will provide a chance to harvest forage during drier periods of the season. In other seasons, the grazed area is usually rested long enough for plants to replace carbohydrate reserves and regrow.

During seasons of pasture growth, proteins and some other nutrients will

peak. During dry and winter seasons, the pastures become scanty or dormant. Forage scarcity can be guarded against by harvesting during times of abundant growth and feeding the harvest as hay or silage.

Monitoring Pasture

Pastureland must be monitored frequently to evaluate its condition. Pasture monitoring requires regular pasture walks to detect signs of declining or aging pasture:

- Narrow leaves, thin stems, and short length of seedhead.
- Shallow, short, and weak root systems.
- Minimal lateral growth and short plant appearance.
- Slow growth and low forage quality.
- Low plant density and extensive areas of bare ground.
- Weed invasion.
- Compacted soils.

Improving the management of existing pasture is usually preferable to establishing new pasture because of the expense and time involved. Tillage, seeding, and weed control for new pasture can be expensive. And the time between planting and grazing can take several months. Meanwhile, the risks of erosion and poor pasture establishment are increased. To improve existing pasture areas or develop new ones, farmers should evaluate use and grazing frequency:

- Evaluate areas or units of land for various uses, such as cropping, grazing, shelter, and aesthetic value, and decide which area will be allotted to each use.

- Limit grazing frequency and intensity for each area to be grazed. This limitation can vary depending on season, stocking rate, and livestock species.
- Allow adequate time for pasture recovery. Allow foliage to cover the ground, as this will help to conserve soil and moisture.
- Test new ideas in small areas before implementing broad and sweeping changes.
- Use different grazing methods, systems, and strategies, always striving for diversity in plant species for warm and cool seasons.

Managing Weeds, Pests, and Diseases

Weeds. The best way to combat weeds is to prevent them from producing seed. Farmers can best achieve that by improving the soil so it supports lush communities of healthy grasses and legumes that thoroughly cover the ground and out-compete weeds for soil, nutrients, and sunshine. Even under the best management plans, however, some weed problems will occur.

Organic farmers can use various cultural practices to manage weeds and keep their populations at acceptable levels:

- Crop rotations disrupt weed cycles.
- Rotational grazing allows livestock to graze tender, young weeds. Multi-species grazing allows different species, such as goats and sheep, to eat weeds that cattle will not consume.
- *Nurse crops* can help to control weed outbreaks. Nurse crops are companion crops sown to suppress weeds while another crop is given time to

become established. For example, organic farmers may sow oats as a nurse crop to allow alfalfa time to become well established.

Pests and Diseases. Many of these cultural controls are useful in managing crop insects and diseases on organic farms. Crop rotations can play havoc with pest and disease growth cycles. Other species of livestock, such as chickens, can be added to the multi-species grazing plan to reduce fly and parasite problems where hoof animals graze. Planting crops that are resistant or tolerant to pests and disease is another effective tactic. Sometimes tillage is necessary to get a pest or disease problem under control.

Prohibited Materials

These are examples of prohibited pest and disease control materials:

- Nicotine
- Strychnine
- Synthetic insecticides, fungicides, and miticides
- Heavy metal-based pesticides
- Synthetic wetting agents

Some natural practices also control pasture pests. Farmers can create an environment conducive to populations of bats and wild birds that eat bugs. Some farms employ domestic birds, such as guinea fowl, to keep pest bugs under control. Other farmers work to establish communities of beneficial insects that prey on harmful pests and diseases. Some species of beneficial insects may be purchased and released on the farm. Most farmers simply manage their cropping systems to

encourage populations of such beneficial insects.

ACQUIRING AND CARING FOR LIVESTOCK

Like conventional livestock producers, organic farmers are mainly concerned with the efficient and profitable production of farm animals. But organic production also emphasizes that responsible animal husbandry includes a concern for how humanely livestock are raised. In their inspections of organic farms, organic certifiers monitor livestock acquisition and care, including how animals are fed and handled, their living conditions, and their medical care. As interpreted by the final rule, the goal of organic husbandry is to produce profitable animals that are healthier than those produced by conventional means and better able to resist disease and pests.

Livestock Acquisition

The final rule establishes criteria for how farm animals obtained from noncertified sources are to be transitioned into organic production.

Brood Stock. In general, female mammalian livestock used as brood stock in meat production must be under organic management by the third trimester of the dam's pregnancy. This class of livestock would include such animals as cattle, goats, sheep, hogs, and rabbits. For example, bred cows obtained from a conventional farm must be under organic management for a full three months *before* calving for the offspring to be classified as organic. Livestock obtained from a conventional farm that becomes part of an organic

farm cannot be resold at a later date as organic stock.

Organic Livestock Production

- When handling livestock, use methods that minimize stress, which is harmful to animals' health.
- Dispose of dead animals and wastes from on-farm processing so they do not endanger the health of other animals or pollute the farm and the environment.
- When producing livestock organically, transitionally, and conventionally on the same farm, segregate the animals into separate areas, lots, and buildings. Label and segregate equipment used in the different operations.
- Number all production buildings and lots to document their management history.

Dairy Animals. Dairy animals purchased from noncertified farms must be under organic management for a minimum of one year before marketing or using their milk products as organic. In the case of a noncertified dairy herd that is being transitioned to organic production, farmers can feed the animals up to 20 percent of nonorganic feedstuffs during the first ninth months of transition. At the nine-month point, all dairy cows must be managed and fed in accordance with the farm's organic management plan. This exemption is scheduled to end in early June, 2006. Dairy calves whose dams are fed less than 100 percent organic feed during the final trimester of gestation may not be marketed as organic.

Poultry. Poultry chicks obtained from noncertified sources must be raised as organic from the second day of life if they are to be used for organic meat or

egg production. Older birds that have been raised conventionally can be used only as breeder stock for the production of eggs for hatching.

Number all production buildings and lots to document their management history.

Humane Treatment

As the National Organic Program final rule reflects, organic practices show concern for humane treatment of livestock. It stipulates that except under special circumstances, all livestock on organic farms must have access to the outdoors, fresh air, direct sunlight, shade, shelter, clean water, and exercise areas. Not all organic livestock operations are land-based. Semi-confined livestock operations for nonruminant animals, such as poultry, are allowed in organic production. The final rule, however, has much to say about the humane treatment of livestock under such conditions. Complete confinement of livestock on an organic farm is strictly limited to special temporary circumstances, such as to protect animals from inclement weather, assure the health and well-being of livestock, care for them during a particular stage of production, or to protect soil and water resources.

Living Conditions. The final rule states that farmers must provide an environment that accommodates the health and natural behavior of their farm animals. Livestock are to be given access to shelter, outdoor areas, fresh air, clean water, a sufficient quantity and quality of feed, shade, sunshine, and space for exercise. Shelters must be adequately heated or cooled, provide

good ventilation, and be able to protect animals from the weather.

Protecting Water Sources

Organic producers must take precautions to avoid contaminating waterways:

- Approved fertilizers and manures must be applied in a way that prevents runoff and leaching into water sources.
- Streams and riparian areas must be protected from livestock and animal wastes.
- Fields must be managed to prevent soil erosion that can flow into streams.

Confinement. The final rule limits how long and under what circumstances organic farmers may totally confine animals. Confinement is allowed in times of inclement weather, for specific health and safety needs, when there is a risk to soil or water quality, and at certain stages of animal production. When confinement is necessary, livestock must be afforded bedding (where appropriate) and a daily period of natural darkness. The final rule is flexible on how farmers can achieve all these goals.

Safety. Under the final rule, livestock buildings, corrals, fencing and handling facilities are to be constructed of non-toxic materials, such as untreated wood, concrete, metal, plastic, rock, or wire. Housing is to be cleaned and manure removed on a regular basis. Watering systems and feeding equipment must be sanitized regularly with approved substances and processes to prevent disease. Pests and weeds around livestock facilities must be managed using approved methods and substances for organic production. Water and waste

runoff from production facilities must be confined or controlled to prevent water and soil pollution. Livestock facilities must also be protected from pesticide drift and water runoff from neighboring noncertified farms.

Manure Storage and Handling.

Organic farmers view manure as one of the most valued byproducts of livestock production. Manure is used as a fertilizer, to help build soil fertility, and to produce compost. However, the final rule sets strict guidelines on how manure is to be stored and handled to prevent contamination of crops, soil, water, and organic production. Records must be kept showing manure application dates, tonnage, and application areas. In addition, farmers must use acceptable means for controlling flies and odors in storing and handling manures.

Feed and Feed Supplements

Organic ranchers must keep records showing that forages and hay produced in their pastures and rangelands—along with all supplemental feeds—are raised, stored and fed under strict organic standards:

- Livestock must graze or browse only on certified pastures and rangelands.
- All farm-produced feeds and forages must be organically-grown.
- All purchased feedstocks must be certified as organic.
- Precautions must be taken during storage and feeding to protect the organic integrity of the feedstocks.

Feeding Equipment. The equipment used to bale, mill, mix, or chop livestock feed must be maintained and operated to prevent contamination

of organic feeds from prohibited substances, petroleum fuels, and lubricants. Equipment used to produce both organic and conventional feedstuffs must be cleaned using proper methods before being used in organic production. Certifying agents will usually require producers to maintain log books to show when equipment cleanings were performed. The log should describe how feedstuffs that are purged from the equipment are handled and used. The same clean-up precautions are required when custom processing is performed on an organic farm by a company or neighboring farm that is noncertified. Organic producers cannot process feed grains at mill sites that are noncertified.

Feeding Facilities. The facilities where organic livestock feeds are stored must be constructed of materials that do not contaminate the feed, such as untreated lumber. Storage bins and similar areas must be protected from rodents, birds, and other wildlife that can contaminate the feed. Farmers that store both organic and conventionally-produced livestock feeds must segregate the storage areas on their farm and identify them clearly. Storage areas for conventional feeds must undergo clean-up protocols before being used to store organic feedstuffs. A farm's organic plan and operating log must clearly show how all of these precautions are implemented.

Feedstock Pest Control. Pest control around feedstocks is always a problem on a farm. Organic farmers are not allowed to use many of the pest-control products that are used on conventional farms. Instead, they rely on an assortment of approved biological or botanical pesticides and a host of

natural devices, such as barn cats, fencing, screens, trapping, and scaring devices.

Health Care

Organic livestock health care is based on three principles:

- Emphasize preventive measures.
- Provide a balanced diet to livestock.
- Reduce stressful situations that have an impact on animal health.

Organic producers must keep records, purchase receipts, and labels of all animal health products used on their farms.

Diseases and Injuries. Organic farmers employ a variety of management practices that adhere to these three main principles, including strategies to prevent or treat disease and injuries. For example, handling techniques, such as isolating diseased or injured animals, help to reduce stress levels on ailing livestock. When these strategies are not enough to keep an animal healthy, farmers also use alternative treatments, such as herbal remedies, nutritional therapy, probiotics, vaccinations, vitamin therapy, and acupuncture. These treatments are acceptable for organic production and will not prevent the treated animal from being certified as organic.

There are times when management practices based on the three principles and alternative treatments will not be enough to prevent illness in some livestock. At those times, farmers may have to use antibiotics or another type of prohibited medicine to help return the animal to good health. The well-

being and comfort of the animal must come before any other consideration. Animals treated with prohibited medicines may not be labeled or sold as organic.

Parasites. Internal and external parasites are a problem on every livestock farm. Synthetic worming agents and similar medicines are prohibited in organic production. Synthetic insecticides are also prohibited. Organic farmers attempt to prevent the buildup of parasite populations through such practices as pasture rotations and regular sanitation of farm facilities. When external parasites become a problem, several options can be employed, including walk-through fly traps, electric bug zappers, botanical and biological pesticides, and wildlife, such as purple martins. The impact of internal parasites can be minimized by using such remedies as herbal treatments and pasture rotations.

Predatory Wildlife. Maintaining livestock health and welfare also includes taking measures to control predatory wildlife on the farm. Confining some types of livestock, such as poultry and sheep, at night and building proper fences will prevent some wildlife from preying on farm animals. Guard animals, such as dogs and llamas, and rodent-control agents, such as cats, are farming standbys. Poison baits to control rodents and other pest wildlife are prohibited on organic farms, but farmers may employ such devices as traps (live traps are encouraged). Dead livestock should be removed or buried as soon as possible so as not to attract scavengers and predators to the farm.

Physical Alterations. Making physical alterations to livestock is another issue addressed in the National Organic Program final rule. Normally, physical alterations of livestock are carried out for these reasons:

- For proper identification: tattooing, ear notching, ear tags.
- To prevent injury from fighting or cannibalism: debeaking, dehorning, tail clipping.
- To prevent damage to pastures: nose rings in hogs.
- For product quality and marketing: castration, caponization.
- For health reasons: tail docking in sheep.

Organic certifying agencies and farmers differ in their opinions on what physical alterations should be practiced out of concern for animal welfare, pain, and stress. Organic farmers should check with their respective certifying agents about the range of physical alteration practices allowed in their locale.

ORGANIC PRODUCT PROCESSING AND LABELING

Processing Facilities

The slaughter and processing plant that will handle a farmer's organic livestock and meats must also be certified as organic. It is not required that the facility handle only organic products, and many plants handle both organic and nonorganic meats.

Three main requirements must be fulfilled for slaughter facilities to become certified for processing organic meat:

- The plant must ensure that organic meats are processed in a plant that is thoroughly cleaned after non-organic slaughter with approved sanitation products. Usually, a processor will handle organic livestock first thing in the morning after the plant is washed down the night before. Some processors devote a day of the week solely to organic slaughter.
- The plant must also prevent the comingling of organic and nonorganic products. Animals and meats must be clearly labeled as organic and kept separate from other products throughout slaughter, processing, packaging, and storing.
- The plant must use approved organic methods of vermin control to keep the plant free of pests. The organic certifying agency can provide more information on approved pest control measures.

Product Labeling

The final rule establishes strict regulations on how raw and processed organic farm products are labeled. Organic farmers should carefully read the final rule for information about product labeling and check with their particular certifying agencies for further information. A word of caution: Labeling is a complex issue, especially in the case of processed products, and *must be followed to the letter of the law*.

In almost every matter involving the operation of an organic farm, accurate documentation and recordkeeping is an absolute must. In organic circles, this documentation is sometimes called the *audit trail*.

The audit trail extends to almost every phase and facet of production on an organic farm, from maps of fields and pastures where crops, forage, and livestock are produced, to verification of the organic origin of seeds, to production logs and activity reports, to actual processing and sales receipts. In other words, the audit trail traces *all* products and processes from start to finish.

A farmer must be able to assure the certifier and the consumer that *all* production has adhered to organic standards and regulations. The documentation should also be thorough enough that any processed product, via assigned lot numbers, can be traced back to the farm from where it came. Audit documents should also show ingredients used to make the product and the day on which it was processed or produced. This audit trail is the basis for labeling the product as “certified organic.”

NATIONAL ORGANIC PROGRAM LIVESTOCK REGULATIONS

The full text of regulations concerning organic livestock production in the final rule is provided below.

Final Rule Acronyms and Definitions

Final rule. The final rule establishes national standards for the production and handling of organically produced food and fiber.

OFPA. The Organic Foods Production Act of 1990 is the congressional mandate that established the NOP.

National List. The National List of Allowed and Prohibited Substances for use in organic production and handling.

NOP. The National Organic Program will facilitate domestic and international marketing of fresh and processed food that is organically produced, and assure consumers that such products meet consistent, uniform standards.

NOSB. The National Organic Standards Board, formed as a result of the OFPA, advises the **NOP** on promulgating OFPA regulations.

§ 205.236 Origin of livestock.

(a) Livestock products that are to be sold, labeled, or represented as organic must be from livestock under continuous organic management from the last third of gestation or hatching:

Except, That,

- (1) Poultry. Poultry or edible poultry products must be from poultry that has been under continuous organic management beginning no later than the second day of life;
- (2) Dairy animals. Milk or milk products must be from animals that have been under continuous organic management beginning no later than 1 year prior to the production of the milk or milk products that are to be sold, labeled, or represented as organic, Except, That, when an entire, distinct herd is converted to organic production, the producer may:

(i) *For the first 9 months of the year, provide a minimum of 80-percent feed that is either organic or raised from land included in the organic system plan and managed in compliance with organic crop requirements; and*

(ii) provide feed in compliance with § 205.237 for the final 3 months.

(iii) Once an entire, distinct herd has been converted to organic production, all dairy animals shall be under organic management from the last third of gestation.

(3) Breeder stock. Livestock used as breeder stock may be brought from a nonorganic operation onto an organic operation at any time: Provided, That, if such livestock are gestating and the offspring are to be raised as organic livestock, the breeder stock must be brought onto the facility no later than the last third of gestation.

(b) The following are prohibited:

(1) Livestock or edible livestock products that are removed from an organic operation and subsequently managed on a non-organic operation may be not sold, labeled, or represented as organically produced.

(2) Breeder or dairy stock that has not been under continuous organic management since the last third of gestation may not be sold, labeled, or represented as organic slaughter stock.

(c) The producer of an organic livestock operation must maintain records sufficient to preserve the identity of all organically managed animals and edible and non-edible animal products produced on the operation.

§ 205.237 Livestock feed.

(a) The producer of an organic livestock operation must provide livestock with a total feed ration composed of agricultural

products, including pasture and forage, that are organically produced and, if applicable, organically handled: Except, that, nonsynthetic substances and synthetic substances allowed under § 205.603 may be used as feed additives and supplements.

(b) The producer of an organic operation must not:

(1) Use animal drugs, including hormones, to promote growth;

(2) Provide feed supplements or additives in amounts above those needed for adequate nutrition and health maintenance for the species at its specific stage of life;

(3) Feed plastic pellets for roughage;

(4) Feed formulas containing urea or manure;

(5) Feed mammalian or poultry slaughter by-products to mammals or poultry; or

(6) Use feed, feed additives, and feed supplements in violation of the Federal Food, Drug, and Cosmetic Act.

§ 205.238 Livestock health care practice standard.

(a) The producer must establish and maintain preventive livestock health care practices, including:

(1) Selection of species and types of livestock with regard to suitability for site-specific conditions and resistance to prevalent diseases and parasites;

(2) Provision of a feed ration sufficient to meet nutritional requirements, in-

cluding vitamins, minerals, protein and/or amino acids, fatty acids, energy sources, and fiber (ruminants);

- (3) Establishment of appropriate housing, pasture conditions, and sanitation practices to minimize the occurrence and spread of diseases and parasites;
- (4) Provision of conditions which allow for exercise, freedom of movement, and reduction of stress appropriate to the species;
- (5) Performance of physical alterations as needed to promote the animal's welfare and in a manner that minimizes pain and stress; and
- (6) Administration of vaccines and other veterinary biologics.

(b) When preventive practices and veterinary biologics are inadequate to prevent sickness, a producer may administer synthetic medications: Provided, That, such medications are allowed under § 205.603. Parasiticides allowed under § 205.603 may be used on

- (1) Breeder stock, when used prior to the last third of gestation but not during lactation for progeny that are to be sold, labeled, or represented as organically produced; and
- (2) Dairy stock, when used a minimum of 90 days prior to the production of milk or milk products that are to be sold, labeled, or represented as organic.

(c) The producer of an organic livestock operation must not:

- (1) Sell, label, or represent as organic any animal or edible product derived from any animal treated with antibiotics, any substance that contains a synthetic substance not allowed under § 205.603, or any substance that contains a nonsynthetic substance prohibited in § 205.604.
- (2) Administer any animal drug, other than vaccinations, in the absence of illness;
- (3) Administer hormones for growth promotion;
- (4) Administer synthetic parasiticides on a routine basis;
- (5) Administer synthetic parasiticides to slaughter stock;
- (6) Administer animal drugs in violation of the Federal Food, Drug, and Cosmetic Act; or
- (7) Withhold medical treatment from a sick animal in an effort to preserve its organic status. All appropriate medications must be used to restore an animal to health when methods acceptable to organic production fail. Livestock treated with a prohibited substance must be clearly identified and shall not be sold, labeled, or represented as organically produced.

§ 205.239 Livestock living conditions.

(a) The producer of an organic livestock operation must establish and maintain livestock living conditions which accommodate the health and natural behavior of animals, including:

- (1) Access to the outdoors, shade, shelter, exercise areas, fresh air, and direct sunlight suitable to the species, its stage of production, the climate, and the environment;
- (2) Access to pasture for ruminants;
- (3) Appropriate clean, dry bedding. If the bedding is typically consumed by the animal species, it must comply with the feed requirements of § 205.237;
- (4) Shelter designed to allow for:
 - (i) *Natural maintenance, comfort behaviors, and opportunity to exercise;*
 - (ii) *Temperature level, ventilation, and air circulation suitable to the species; and*
 - (iii) *Reduction of potential for livestock injury;*

(b) The producer of an organic livestock operation may provide temporary confinement for an animal because of:

- (1) Inclement weather;
- (2) The animal's stage of production;
- (3) Conditions under which the health, safety, or well being of the animal could be jeopardized; or

(4) Risk to soil or water quality.

(c) The producer of an organic livestock operation must manage manure in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, heavy metals, or pathogenic organisms and optimizes recycling of nutrients.

CONCLUSION

As we mentioned in the introduction to this publication, the National Organic Program, through its passage of organic standards, is doing much to unite the organic industry and open new doors for U.S. farmers. News accounts concerning the passage of the national standards have generated a great deal of public recognition for the organic industry. The publicity has made consumers more aware of the wholesome products that are raised on organic farms. With this heightened public awareness, many producers, organizations, and companies not previously involved with organic farming have suddenly taken interest in the new possibilities associated with organics. So it is that the new organic standards are helping to increase the number of players and investments in U.S. organics and to broaden the scope of the industry.

The national standards themselves have formalized the way organic products are to be uniformly grown, handled, processed, and marketed. Although many parts of the final rule are open to interpretation and are being debated by members of the organic industry, the organic regulations overall are also

helping producers understand what is expected of them when it comes to organic management decisions.

The final rule is a tool in the hands of organic producers. It should be viewed as a guide and not a map. Although the final rule describes the legal tenets that every organic farmer must follow, it does not attempt to dictate the management decisions that each farmer must make to meet those legal requirements. Such decisions remain in the hands of each person involved in organic agriculture. The final rule will continue to evolve as its regulations and overall intent are further discussed, interpreted, and applied by members of the vibrant organic farming industry.

RECOMMENDED RESOURCES

ATTRA (Appropriate Technology Transfer for Rural Areas)

P.O. Box 3657
Fayetteville, AR 72702
National phone line: 1-800-346-9140
Local Phone: 479-442-9824
Fax: 479-442-9842
www.attra.ncat.org

ATTRA is the national sustainable agriculture information service, funded by the USDA Rural Business–Cooperative Service. It is operated by a national nonprofit organization, the National Center for Appropriate Technology (NCAT). Located at the University of Arkansas at Fayetteville, ATTRA staff members, via their 800-line service and Web site, offer hundreds of free publications on sustainable farming topics to farmers, Extension agents, information multipliers, researchers and other people involved in commercial agriculture. ATTRA offers

many current publications on organic production, marketing and related topics.

Carolina Farm Stewardship Association

P.O. Box 448
Pittsboro, NC 27312
Tel: 919-542-2404
Fax: 919-542-7401
E-mail: **cfsa@sunsite.unc.edu**
The Carolina Farm Stewardship Association is involved in organic and local market development and promotion. They publish The Green Book, a marketing directory of alternative and organic markets.

Center for Environmental Farming Systems (CEFS)

Dr. Nancy Creamer, Director
North Carolina State University
Horticulture Science, 212 Kilgore Hall
Raleigh, NC 27695-7609
Phone: 919-515-9447
Fax: 919-515-2505
E-mail: **nancy_creamer@ncsu.edu**
www.cefs.ncsu.edu
The Center for Environmental Farming Systems (CEFS) is dedicated to developing farming systems that are environmentally, economically and socially sustainable. Established in 1994 at the North Carolina Department of Agriculture's Cherry Farm near Goldsboro, the Center has over 2,000 acres (1,000 cleared). The unique Center is a partnership among North Carolina State University, North Carolina Agriculture and Technical State University, North Carolina Department of Agriculture and Consumer Services, non-governmental organizations, and other state and federal agencies, farmers and citizens. A main goal of the Center is to identify farming practices and systems that will benefit and enhance water quality and the natural resource base in the state of North Carolina.

FarmNet+

Greg Stephens, National Director

842 S. 10th

Salina, KS 67401

Tel: 785-825-8649

E-mail: Greg67401@yahoo.com

www.tri.net/~knfo/organic.html

FarmNet+ is a family farm organization that increases the marketing leverage of independent farmers by organizing cooperating groups of farmers into bargaining groups across the entire U.S. They have a Web site, sponsored by the Kansas National Farm Organization, that provides a link between groups of producers and buyers of agricultural commodities and includes a listing service for sellers of organic commodities.

Independent Organic Inspectors Association (IOIA)

P.O. Box 6

Broadus, MT 59317

Phone: 406-436-2031

Email: ioia@ioia.net

www.ioia.net

Organic inspectors may be employees of the certifier, but many are independent contractors. Many inspectors are members of, and receive training from, the Independent Organic Inspectors Association (IOIA).

National Organic Program

USDA-AMS-TM-NOP

Room 2510 – South Building

1400 and Independence Avenue, SW

Washington, DC 20250-0020

Phone: 202-720-3252

Fax: 202-205-7808

E-mail: NOPWebmaster@usda.gov

www.ams.usda.gov/nop

The National Organic Program (NOP) works to implement provisions of the Organic Foods Production Act of 1990, the

legislation that forms the basis for the national organic standards. The full text of the final rule, along with spot announcements by the National Organics Standards Board, is available on the NOP Web site.

Organic Farming Research Foundation

303 Potrero Street, Suite 29-201

Santa Cruz, CA 95060

Tel: 1-831-426-6606

E-mail: research@ofrf.org

www.ofrf.org

The Organic Farming Research Foundation (OFRF) sponsors and disseminates results of research related to organic farming practices and works to educate the public and decision-makers about organic farming issues. OFRF makes some great information available on their Web site, including summaries of organic farmer surveys and newsletters with information related to marketing organic products. Of particular interest are the proceedings of a 1998 workshop on organic farming and marketing research, available at www.ofrf.org/policy/scoar/scoards.html. The newsletter is available free, and the full survey results are available for a contribution of \$10 for copying and postage costs.

The *Organic Production* publication series was developed
by the Center for Environmental Farming Systems



a cooperative effort between North Carolina State University
North Carolina A&T State University
North Carolina Department of Agriculture and Consumer Services



The USDA Southern Region Sustainable Agriculture Research and Education Program
and the USDA Initiative for Future Agriculture and Food Systems Program
provided funding in support of the *Organic Publication Series*.

David Zodrow and Karen Ven Epen of ATTRA
contributed to the technical writing, editing, and formatting of these publications.

Prepared by
David Zodrow, Former Program Specialist
National Center for Appropriate Technology
Harold Rachuonyo, Former Research Associate
Department of Animal Science, College of Agriculture and Life Sciences
North Carolina State University

Published by
NORTH CAROLINA COOPERATIVE EXTENSION SERVICE



NC STATE UNIVERSITY

AG-659W-08

08/2006—BS
E06-45788

Distributed in furtherance of the acts of Congress of May 8 and June 30, 1914. North Carolina State University and North Carolina A&T State University commit themselves to positive action to secure equal opportunity regardless of race, color, creed, national origin, religion, sex, age, disability, or veteran status. In addition, the two Universities welcome all persons without regard to sexual orientation. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.