

SUSTAINABLE FARMING

INCORPORATING AWA NEWSLETTER

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PIG OUT

FEEDING FOR
HEALTH AND
WELFARE

PLUS

WORKING WITH YOUR VET
RAISING CALVES
AGW MEMBERSHIP



YOU HOLD THE ACES



Like many individual farmers and ranchers, AGW has stepped up to the plate to counter the ‘anti-meat’ narrative dominating the media.

We have responded to countless articles,

correcting obvious inaccuracies and highlighting the fact that all meat production systems are not the same. Along with Emily Moose, our Director of Communications and Outreach, I have briefed numerous journalists and advocacy groups, reinforcing the wide-ranging benefits of AGW-certified and pasture/grass-based farming systems.

As I have said before, we know this ‘anti-meat’ narrative is being pushed by powerful food industry interests. Bayer, Cargill, Du Pont, Danone, Kellogg’s, PepsiCo, Syngenta, Unilever, to name a few, are all signatories to the global “transformation of the food system” towards the new “planetary health diet.” But given the track record of many of these businesses—particularly when it comes to animal welfare and the environment—does anyone seriously believe the CEOs all had a ‘road to Damascus’ moment and have seen the error of their destructive ways? Of course not. The new ‘planetary health’ lifestyle is designed to create vast global opportunities for the marketing of ultra-processed foodstuffs using cheap, heavily subsidized commodity crops and lab-grown meat.

Don’t get me wrong. The climate emergency is very real and producing food in the most sustainable way possible is an urgent global objective. But we cannot—and must not—allow the ‘baby to be thrown out with the bathwater’ and ignore the proven role of well-managed ruminants in supplying high-quality, sustainably produced food, helping to mitigate climate change through carbon sequestration and more.

Remember: In the coming battle for the hearts and minds of the public, you still hold the aces. Humans are social creatures and today’s consumers are increasingly looking for truly sustainable food, as well as a real connection with the people who produced it. That’s something they will never get from the faceless corporations pushing ultra-processed plant-based food and lab-grown meat. You are the real McCoy; something every multinational food corporation is spending millions of dollars on marketing and branding to replicate.

We urge you to do all you can to help communicate the benefits of high-welfare, sustainable farming—not just to your local customers, but to the wider public. Please also consider helping us grow the AGW membership program and support our wider work to educate and nurture this movement of concerned consumers. You’ll find out more on pages 16-17.

Andrew G. Fisher

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SKYFALL

Research reveals devastating loss of birdlife across the U.S. and Canada

North America has lost 3 billion birds—or more than a quarter of its entire bird population—over the past half-century, according to new research.

Published in the *Science* journal, researchers from universities, government agencies and non-profit organizations collaborated to analyze nearly 50 years of data collected through multiple monitoring efforts on the ground—including long-running surveys conducted with the help of amateur bird watchers, such as the Audubon Christmas Bird Count—and data on migrating bird flocks detected by 143 weather radar installations over the last decade.

“Multiple, independent lines of evidence show a massive reduction in the abundance of birds,” says Ken Rosenberg, the study’s lead author and a senior scientist at the Cornell Lab of Ornithology in New York. “We expected to see continuing declines of threatened species. But for the first time, the results also showed pervasive losses among common birds across all habitats, including backyard birds.”

Birds are indicators of environmental health, signaling that natural systems across North America are being so severely

impacted by human activities that they no longer support the same wildlife populations. 90% of the bird species lost belong to 12 bird families, including sparrows, warblers, finches and swallows—common, widespread species vital to ecosystem functioning, controlling pests, pollinating flowers, seed dispersal and forest regeneration.

The research reveals grassland birds are especially hard hit, with a 53% reduction in population—more than 720 million birds—since 1970. Scientists argue the largest factor driving these declines is likely the widespread loss and degradation of habitat, mainly due to agricultural intensification and urbanization.

“These data are consistent with what we’re seeing elsewhere with other taxa showing massive declines, including insects and amphibians,” says Peter Marra, director of the Georgetown Environment Initiative at Georgetown University. “It’s imperative to address immediate and ongoing threats, both because the domino effects can lead to the decay of ecosystems that humans depend on for our own health and livelihoods—and because people all over the world cherish birds in their own right. Can you imagine a world without birdsong?”



ANDREW HOWE/ISTOCK

IN THE NEWS...

NEGLECTIBLE NEONICS

Neonicotinoid seed treatments (NST) of soybean provide negligible benefits to U.S. farmers, according to new research.

Published in the *Scientific Reports* journal, scientists assessed yield data across 14 states between 2006-2017 and found “no empirical support for continuing the current approach of blanket NST use in soybeans,” with “little to zero net benefit in most cases.” The researchers suggest that the current widespread prophylactic use of NST in the U.S. should be re-evaluated.

DIGITAL FUNDRAISER

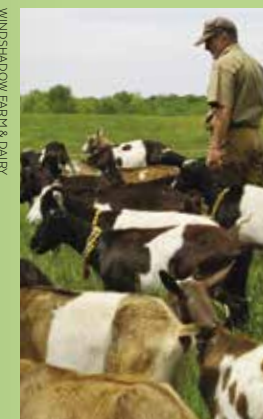
AGW is seeking a high-impact professional to join its marketing team. “We are looking for the right person to lead our digital fundraising strategy and execution across our email, social media, text and web platforms,” says Emily Moose, AGW’s Director of Communications and Outreach. “Working with teams across North America and internationally, they will help us to identify and implement creative digital strategies for content and digital media platforms to increase donor support.”

Find out more at agreenerworld.org/about/careers

FARMER OF THE YEAR

Ron and Soo Klein of Windshadow Farm & Dairy in Bangor, MI, were awarded Farmer of the Year by the Van Buren Conservation District.

The Kleins received the award in recognition of their dedication to conservation, diversification and good husbandry. “Ron and Soo are giant advocates for safe farming practices and have participated in several programs with the Conservation District,” said A.J. Brucks, Executive Director of the Van Buren Conservation District. Congratulations from us all at AGW.



WINDSHADOW FARM & DAIRY

NON-GMO STICKERS

Certified Non-GMO by AGW stickers are now available from A Greener World.

Designed for application to all types of product packaging, the full color 1" x 1" high-quality stickers include “Certified Non-GMO by AGW” text with the eye-catching Certified Non-GMO by AGW logo.

The 1,000-sticker rolls are available from AGW’s online merchandise store at \$5.70/roll plus shipping. Find out more on page 21 or visit agreenerworld.org/shop-agw



IN THE NEWS...



UPLAND PRIDE

Challacombe Farm is England's first Certified Animal Welfare Approved by AGW upland farm.

Mark Owen and Naomi Oakley raise beef cattle and sheep in the heart of Dartmoor National Park, selling meat to local customers. "Our goal is to produce high-quality meat while conserving and enhancing the wildlife, landscape and archaeology that makes our farm such a special place," says Oakley. "We're really proud to have this new certification from A Greener World."

AGW CERTIFIES FIRST SOUTH AFRICAN FARM

Glen Oakes Farm in Hemel-En-Aarde Valley, Western Cape, is the first farm in South Africa to be Certified Animal Welfare Approved by AGW.

Charles and Julie Crowther raise pigs outdoors on pasture at the 740-acres farm, situated in the picturesque Hemel en Aarde Valley, surrounded by the beautiful Klein River mountains, fynbos (natural shrubland) and pasture lands.

"We are so thrilled, so proud and so honored to be Certified Animal Welfare Approved by AGW," says Julie Crowther. "We would farm this way irrespective of certification or not, but it makes a huge difference to be acknowledged for our principles."

The Crowthers put their Large White/Landrace-cross sows to a Duroc boar to provide a marbled carcass, ideal for producing a line of traditional charcuterie products for local restaurants and retail outlets. "Our pigs grow up slowly in a low-stress environment," explains Charles Crowther. "This is what makes all the difference to the flavor and quality of our meat."

"A Greener World is excited to offer internationally recognized labels in South Africa that meet local demands, strengthen regional markets and compete globally," says Tozie Zokufa, AGW South Africa's Executive Director. "We're proud to certify farms like Glen Oakes Farm that have demonstrated their commitment to transparency and verified, high-welfare, farming practices."



Sarah Hoffmann (left) and the team at Green Dirt Farm celebrate their success at the ACS awards

WHEY AHEAD

Six Certified Animal Welfare Approved by AGW farms took home a total of 17 awards at the 36th annual American Cheese Society competition in Richmond, VA in August.

Tomales Farmstead Creamery, CA, took first place for their 'Liwa' in the Farmstead Cheeses category. Asgaard Farm and Dairy, NY, took second place for 'Blue Line' goat's milk cheese, while Chapel Hill Creamery, NC, took second place for 'Carolina Moon' soft cow's milk cheese and third place for 'Hickory Grove'. Prodigal Farm, NC, also took second place for 'Bearded Lady' and third place for 'Field of Creams'. Ruggles Hill Creamery, MA, won second place for 'Ada's Honor' goat's milk cheese; second place for 'Claire's Mandell Hill'; second place for 'Hanna's Awashed'; and third place for 'Greta's Fair Haven'.

Finally, Green Dirt Farm, MO, took home a total of seven awards for their sheep's milk cheeses, including second place for 'Woolly Rind', 'Fresh Plain', 'Fresh Spicy Chili'; and third place for 'Ruby', 'Bossa', 'Fresh Garlic Herb' and 'Dirt Lover'.

Winners were selected from over among 1,742 entries from the U.S., Canada, Mexico and Brazil. AGW-certified farms have won ACS awards every year for the past seven years.

"We know that high animal welfare practices create the high-quality milk that we use to make our award-winning cheeses," Sarah Hoffmann of Green Dirt Farm. "We feel very honored to win these awards. Even more than that, we're super proud to represent A Greener World farmers and be part of a movement to make dairy farming sustainable for the future."

AGW Executive Director Andrew Gunther says, "It's an honor and a privilege to work with the certified producers across North America who are managing their animals according to high-welfare, sustainable practices-and consistently producing award-winning, delicious food for their communities. It's confirmation of something we know to be true: verified sustainability is a reliable indicator of verified quality. Our congratulations to everyone involved."

HOTTER AND WETTER

Summer 2019 was hottest on record for the northern hemisphere, according to the National Oceanic and Atmospheric Administration.

Such temperatures impacted Arctic sea ice, shrinking coverage to the second smallest known. The five hottest Augusts on record have all occurred since 2014.

This follows the wettest January to August on record for the U.S. Above to much-above average precipitation stretched from coast to coast, with average rainfall of 24.59 inches —3.88 inches above average.

UNEXPECTED ALTERATIONS IDENTIFIED IN GM CATTLE



Government researchers have identified 'unintended DNA alterations' in genetically modified (GM) cattle—including antibiotic-resistant marker genes—despite the developer's claims.

As reported in *Independent Science News for Food and Agriculture*, Food and Drug Administration (FDA) researchers routinely re-examined the DNA of two GM calves that had been developed as hornless using gene editing techniques. The scientists identified numerous unintended DNA alterations in the two calves' genomes. In particular, the DNA of both calves contained

two antibiotic resistance genes: one conferring neomycin/kanamycin resistance and the other ampicillin resistance.

Initial reports by the developers, published in *Nature Biotechnology* journal, claim that no unexpected alterations were detected as a result of the gene-editing procedure. However, critics state the FDA's findings may raise biosafety concerns, as every cell of the gene-edited cattle with the polled locus will also contain the antibiotic-resistant genes, questioning industry calls for reduced regulatory oversight.

GET SOCIAL WITH AGW



AGW has consolidated its social media accounts, making it easier for the public to find the organization—and search for AGW-certified products and farms.

"AGW's marketing team has been working hard to help people understand the meaning—and benefits—of AGW's family of farm certifications and, above all, to help them find certified products," says Emily Moose, AGW's Director of Communications and Outreach. "Social media platforms like Facebook, Instagram and Twitter are now essential communication tools, enabling

us to reach tens of thousands of followers. By consolidating our family of certifications into a single account on each platform, we can make it easier for people to find, follow and tag AGW and certified farms and products in online conversations."

If you are on social media and have not followed us yet, please do:

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Instagram @AGreenerWorldOrg



Like what you read?
Do you value our work to support market transparency and pasture-based farming?

Here's how to help us help **you**—and others

AGW is an independent and nonprofit organization. Because we are not dependent on certification fees, we can remain completely impartial in our auditing, resulting in unrivaled integrity and trust. But we DO rely on supporter donations. Please consider supporting us with a one-time or regular donation and membership, or promoting the AGW membership program with your friends, family and customers. Join now for as little as \$3/month!

visit agreenerworld.org and select 'get involved' / or donate at agreenerworld.org/donate

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Opinion

Sustainable farmers across the world must stand together, says Naomi Oakley

Naomi Oakley and Mark Owen raise Certified Animal Welfare Approved by AGW beef cattle and sheep at Challacombe Farm near Yelverton, England. Visit dartmoorfarm.com



FARMERS UNITED

With all the criticisms of farming around the world, it's great to hear the National Farmers Union, the UK's best-known farming body, promoting the potential role of farming in mitigating climate change, with a target to reduce UK farming's GHG emissions to zero by 2040. But in the UK, many sustainable farmers have been doing all this—and much more—for years with very little recognition.

Public goods and services

My husband and I farm 500 acres high on the hills in the southwest of England. If you have seen or read *The Hound of the Baskervilles*, that is where we farm: in splendid, rain-swept wonder on deep peat, sequestering carbon and providing multiple public goods and services. Animal welfare is at the heart of everything we do here. As you might have read in the news section (page 4), we are proud to be the first upland farm in England to be Certified Animal Welfare Approved by AGW. We are also a member of a UK association that promotes feeding on pasture. As tenants, our livestock are our most valuable asset; we want to optimize every part of their lives to have happy, productive animals producing high value, healthy meat.

We have 60 hardy native Welsh Black cattle and 250 Icelandic x Shetland sheep. These breeds are tough and thrifty, living outside whenever possible and grazing our wet grassland and extensive areas of archaeology. The mix of breeds creates great opportunities for biodiversity, including internationally rare species such as the Marsh Fritillary butterfly, and migrant species such as cuckoos.

Building trust

Grazing livestock in regenerative systems are vital to maintaining our manmade habitats which support some of the rarest biodiversity. As a society we are being told to 'eat less but better quality' meat; we are consciously tapping into that change with our marketing and our meat sales are good. People want to trust the food they buy and they are willing to pay more for the confidence it gives them. Our certification will no doubt help.

Like many of you farming in North America, we have an 'open barn door' ethos for anyone who wants to look around, because we have nothing to hide and everything to share. We have a popular walking trail through the farm and we tell visitors about our ethics and animals. We also hold free open days where people, including other farmers, can come and meet us and the animals, and walk round our farm. It's important for us to do this.

Standing together

As sustainable farmers, we all need to celebrate and promote the positive impact that regenerative and sustainable agriculture can have on animal welfare, human health and the environment. In the UK, we have farms of all sizes coming together and sharing ideas, innovation and supporting each other on the journey towards a low carbon future. It would be fantastic to be able to share our knowledge and experiences more widely with other farmers across the world. Because we will all need to stand together to make this work.



FEEDING PIGS

Pig productivity and health will suffer without the right feed, warn Anna Heaton and Tim Holmes

Domesticated pigs descend from forest dwelling wild boar, which root and forage for food. Pigs are omnivorous and can eat a variety of food of both plant and animal origin. Based on these two facts, some farmers assume that when pigs are given the opportunity to forage they need little or no supplementary grain and protein feeds.

Unfortunately, this assumption is wrong and, in some cases, has led to poor pig productivity—and even health and welfare problems. While alternative and foraged feeds can play a nutritional role at certain stages of a pig's production cycle, they will rarely meet the pig's full dietary needs and supplementary feed is still essential.

Different nutritional needs

The Certified Animal Welfare Approved by AGW (AWA) standards require that pigs have access to a ranging and foraging area. If the ranging or foraging area is well managed and/or the pigs have access to good quality forages, it can provide some of the pigs' dietary needs and therefore reduce the need for expensive grain and protein supplements. However, any reduction in supplements fed will depend on the age and stage of production of the pig—and must be considered carefully.

Dry sows (pregnant sows) can eat a lot of feed each day, and the nutritional goal is to maintain body condition while ensuring sows do not get overfat. A crude protein level of 13–14% and energy of 12–13 MJ/kg is sufficient for these animals. Dry sows are therefore a type of pig where the potential to replace some supplementary grain and protein feeds with alternative feeds is relatively high.

Lactating sows, however, have a much higher demand for both protein (17–18%) and energy (13.5–14 MJ/kg), as do newly weaned piglets (protein 20%, energy 14 MJ/kg). These classes of pigs are far more likely to require supplementary grain and protein feeds in order to optimize their growth and production levels and to maintain health.

As pigs grow, the levels of protein and energy required in the diet reduces. So by the time pigs are in the finishing stage, the protein and energy levels required are similar to those of a dry sow. If pigs have been well nourished during the immediate post-weaning and growth stage, the finishing period offers a further opportunity to once again utilize alternative feeds and reduce supplementary grain and protein feeds.

Lysine

In order to maintain pig growth and health, farmers should have a good understanding of the protein levels found in different kinds of feed. However, it is equally important to be aware of the types of protein—and the specific amino acids—that are present.

Pigs need the essential amino acid lysine in their diets. Lysine is described as “essential” and, as it cannot be synthesized in the body, the pigs' needs must be met from the diet.

Lysine is essential for lean growth. If the pigs' diet is high in energy, but provides insufficient lysine, the pigs will still grow; however, they will be unable to lay down muscle and any increase in weight will come from fat deposition. (If you regularly find a high ratio of fat to meat at slaughter, you might want to examine the lysine levels in the diet.)

Feeds that are high in lysine include peas, field beans, soy and fishmeal. Whey, potatoes, vegetable waste and root crops such as fodder beet are commonly used alternative feeds for pigs, but are all low in lysine. If these alternatives are fed, they *must* be balanced by protein supplements that include lysine to maintain pig growth and health.

Energy

Pigs need good sources of energy in their diets. Energy drives the metabolic processes that result in the production of meat (and milk in the case of a lactating sow). The survival of the piglet in the first 2–3 days of life is highly dependent on a regular supply of energy; if the sow's nutrition is inadequate and leads to poor quality milk, the susceptibility to disease and piglet mortality rises.

Energy is particularly important at weaning time. If pigs are weaned too young or are presented with low-quality diets at weaning, they can become energy deficient. Under these situations their immune system will not function efficiently, leading to higher incidence of disease.

Peas, field beans, soy and fishmeal are good energy sources, as well as good lysine sources. Corn and cereal grains are good energy sources, but low in lysine.

What about pasture?

Well-managed pasture can reduce the need for grain and supplement for dry sows and finishing pigs by as much as 50%. Some estimates suggest



Pigs will readily eat waste vegetables but the nutritional value is minimal

that one acre of good pasture can support up to eight dry sows, or 15–30 pigs less than 100 pounds, or 10–20 pigs over 100 pounds, although time of the year, soil type/fertility, pasture quality and composition and rainfall will all affect these estimates. The way the pasture is used—strip grazing, rotational grazing or set stocking—will also have an impact on how much feed value pigs will get, and how long they can be maintained on a certain area. (The prolonged use of the same area of pasture or crops can quickly lead to a build-up of parasites and should be avoided anyway.)

It is important to note that the nutritional value of pasture will change over time, as it is either denuded, matures or is affected by climatic conditions. If pasture is used to replace part of a concentrated feed, the levels of additional supplemental feed will need constant adjusting based on pasture condition and the pigs’ nutritional needs.

Silage or baleage can also be used for feeding pigs, although these feeds are best utilized by dry sows and finishing pigs. Forages should be cut and preserved when the pasture is young and leafy, and pigs will need an adaptation period of several weeks to get the best results.

Diverse mixtures of forages will give the best results. Pig management texts from the early 20th century suggest that a mixture of grass, oats, clover, peas and turnips can help to reduce the quantity of concentrate feed needed to fatten pigs. If such mixtures are grazed, good pasture management will be essential to ensure pigs are eating the forage and not just rooting and destroying it.

Remember: Allowing pigs to forage without any supplementary feed OR feeding silage or baleage alone will **not** meet the pigs’ full nutritional needs. Additional concentrate feed (and any necessary mineral supplementation) will be necessary in order to maintain condition and health.

Alfalfa

Alfalfa’s nutritional quality varies with stage of maturity and soil fertility, as well as method of harvesting, handling and storage. Compared to grains, alfalfa has around half the level of digestible energy. The more mature alfalfa is at the time of grazing or cutting, the lower its nutritional value. Alfalfa also contains tannins and saponins—anti-nutritional factors that reduce the growth rate of pigs.

Alfalfa can be a valuable feed for dry sows, but less so for younger pigs. Sows have a greater capacity for fermentation in the hindgut that allows for greater fiber digestion and improved energy utilization. Additionally, studies at the University of Minnesota showed increased litter size and lactation feed intake when sows were fed alfalfa haylage during gestation.

Human food waste

Some pig farmers have access to bakery waste or similar products. While these feeds may be low cost (or even free), they will have limited feed value. Similarly, while waste vegetables such as squash, pumpkin and zucchini will be readily eaten by pigs, the nutritional value is minimal. (See box.) Such feeds should only be considered as a treat

“AGW standards require farmers who replace concentrate feed to employ a swine nutrition expert to verify that amended diets meet the pigs needs”



Feeds like squash should only be considered as a treat or supplement

or supplement to high-quality grain and protein feeds—and never the pigs’ main diet.

Seek expert advice

Alternative feeds can make a positive contribution to the diet of certain types of pigs and at different stages of the production cycle. However, alternative feeds will rarely—if ever—meet the pig’s dietary needs in full and supplementary grain and protein feeds are necessary for efficient growth and health. It is essential to fully assess the type of feed and the type of pig before new feeds are introduced.

Farmers should never expect to completely eliminate concentrate feeds from the pigs’ diet and any reduction in their use should be planned with a nutritionist to ensure pig health and welfare is maintained. The Certified Animal Welfare Approved by AGW program requires farmers who intend to replace concentrate feed with alternative feeds to employ a swine nutrition expert to verify that any amended diets will meet the needs of their pigs.

Anna Heaton is Lead Technical Advisor with A Greener World. Tim Holmes is Director of Compliance with A Greener World

Further information

► Shurson, Jerry et al (2002). *Designing Feeding Programs for Natural and Organic Pork Production*. St Paul, MN: University of Minnesota Extension Service. <http://hdl.handle.net/11299/48800>.
► Edwards, Sandra (2020). *Feeding Organic Pigs: A handbook of raw materials and recommendations for feeding practice*. School of Agriculture Food & Rural Development: University of Newcastle. http://www.britishpigs.org.uk/Newcastle_handbook_of_raw_materials.pdf

Example alternative feeds and their contribution to the diet

Whey: If whey is available, gradually encourage the pigs to take up to 2 gallons whey per pig per day. This will reduce the amount of required concentrate feed by around 2 pounds per pig per day.

Vegetable waste: Around 11 pounds fresh weight of vegetables, such as apples, swedes, squash or zucchini, can replace 1 pound of concentrate feed. However, it is important that vegetables do not exceed 20% of the total ration on a dry matter basis. For example, if a pig is eating around 5 pounds of concentrate feed a day, it should receive a maximum of 1 pound of vegetables on a dry matter basis (around 6–7 pounds fresh weight) per day. The remainder must come from concentrate feed to maintain growth and health.

Potatoes: Approximately 6½–7 pounds of raw potatoes will replace 1 pound of barley, with additional protein supplementation required. Dry sows can easily meet their daily energy requirements from raw potatoes fed ad libitum, with a small amount of protein supplement. For finishing pigs, raw potatoes can comprise up to 25% of the diet on a dry matter basis, although performance is likely to be reduced relative to cereal diets. Potatoes should *not* be considered for weaner and growing pigs unless they are cooked, due to their relatively low palatability and high bulk.

How much should I feed?

Overall: As a general rule of thumb, 1 pound of feed per pig per day for every month of age works well for fattening pigs, with a maximum of 5–6 pounds depending on how well the pig has grown. This amount can be reduced if you are offering lots of vegetables or other supplementary feed, such as whey, as per the guidelines above.

Sows: Sows that are in pig and not lactating (dry) require around 4–5 pounds of feed per day. In winter, this can be increased to 6 pounds, if needed. Sows that have farrowed can have their feed increased by around 1 pound per day after farrowing (assuming she will eat it). The maximum amount depends on number of piglets, which can be up to 2 pounds per piglet reared. Remember that once the piglets are around two weeks old they will start eating some feed. This should be encouraged as it will help them when they are weaned.

HOUSING BENEFITS



AGW's farm standards require that calves are raised in groups. This beneficial practice is commonplace on dairy farms in Ireland, and is gaining popularity in North America. Joris Somers looks at the benefits of a group housing approach



An all-in-all-out system aids hygiene

The basic principles of youngstock housing are no different to those that apply to adult cows. Regardless of the age group or the type of housing, accommodation must provide for the animal's needs in terms of shelter and comfort. Housing not only covers things like floor type and area, but also light intensity and air space.

Ireland example

In the typical Irish dairy herd, calving is a very seasonal event with the vast majority of calves born during February and March. However, you will rarely find calf hutches on Irish farms. While they can provide a good alternative to buildings (with improved air quality, for example), adverse weather conditions and poor drainage can quickly cause bedding to become wet, leading to potential disease and welfare issues.

Instead, Irish dairy calves tend to be paired-up and grouped as early as possible in indoor calf housing systems. Calves are provided with colostrum shortly after birth and moved to individual calf pens where their general health

and appetite can be easily monitored throughout the day. This short-term individual housing, followed by grouping of calves, is a practical way for the farmer to monitor the calves' health and growth progress, and offers many wider benefits.

Group benefits

Individual pens provide a safe and clean environment for the calf to recover from birth. Within the next two weeks—and once the farmer is satisfied the calf is healthy and consuming adequate amounts of milk—the individual calves will be combined into groups of 10-15 calves of a similar age until weaning. Once weaned, several groups are then combined to form one or two larger groups of youngstock, before turning out to pasture until weather conditions prompt housing again in winter.

The benefits in calf welfare and performance go hand-in-hand with this management practice. By housing in pairs or small groups soon after birth, it is possible to increase solid feed intake and weight gains. Group housing also encourages

Space requirements for group housed calves

Calf weight (lbs)	100	100-220	220-330	330-485
Approximate age (months)	0	0-2	3-5	6-8
Minimal space allowance under AWA standards for group housing (ft ² /calf)	16	16	27	27
Recommended area (ft ² /calf)	21½	32	43	54

the natural social and inquisitive behavior of calves, increasing their learning ability and allowing them to adapt better to new environments.

Effective ventilation

Pneumonia is a major concern in young cattle, especially during the housing period, and can often be prevented through improved building design (with good ventilation and drainage to reduce moisture levels) and by avoiding over-crowding and mixed-age groups. It is essential to provide calves with a clean, dry bed in well ventilated but draft-free conditions. Air flow should not exceed around 4mph. Drafts should be avoided and suitable shelter made available to calves if excessive air speeds are present at calf level.

In the mild Irish climate, temperatures rarely drop significantly below freezing for prolonged periods of time. However, temperature fluctuations are an important consideration for calf health and comfort. Under draft-free conditions, temperatures should not get lower than 44°F for new-born calves, although month-old calves can cope with temperatures around freezing for short periods.

The effectiveness of natural ventilation of a building depends on many factors, including:

- ▶ Overall span of the building
- ▶ Wind obstruction by other buildings or structures
- ▶ Pitch of the roof
- ▶ Stocking density and body mass of animals housed in the building
- ▶ The type of bedding used

Mechanical ventilation may be necessary to achieve adequate air movement to reduce moisture build-up and potential heat stress. Bacteria and viruses cannot survive for prolonged times outside the animal; removing stale, damp air will ensure disease is less likely to be transmitted between animals without direct contact.

Automatic feeders

The grouping of calves has the added benefit of allowing the use of labor-saving automatic calf feeders. In recent years, many farms in Ireland have moved to automatic calf feeders in group pens. After an initial training phase for the calves, all calves in the group receive their daily allocated

milk volume spread out over several feeds. Often these feeders also incorporate a weighing scale which makes monitoring calf daily-weight gain hassle free.

The placement of automatic calf feeders within the calf pen is essential. The area around the feeder can quickly become contaminated with high levels of urine, as well as waste water from regular maintenance and cleaning cycles. Feeders should therefore be placed away from the bedded area on a well-drained concrete floor. A 1-in-20 slope of the floor towards a drainage channel in front of the calf pen will ensure the bedding remains drier for longer, reducing overall moisture levels inside the calf house and the frequency of refreshing the bedding.

Bedding choice

Newborn calves spend 80% of their time lying down. Therefore, the bedding material itself is of great importance. Straw is the obvious choice for many Irish dairy farmers despite its increasing cost. Straw provides good moisture absorbency and heat insulation and can be easily removed when soiled and replaced. However, wood shavings perform similarly to straw, with the added benefit of reduced risk of soiled bedding being ingested as forage by the calf. An easy way to check the moisture level of bedding is performing the 'knee test'. If kneeling down in the calves' bedding leaves wet stains on your knees, the bedding is not dry enough for calves.

During the springtime, few Irish dairy farmers find the time to fully clean and disinfect the calf housing. Group housing is an easy way of implementing an all-in-all-out system, where all the calves in a group will vacate a pen together when weaned and turned out to pasture. Before a new group of calves is introduced to the pen, all bedding material is removed and the environment, including the feeding and drinking equipment, thoroughly cleaned. During the summer, when all the calves have been weaned and are grazing, all the organic matter is removed from the calf housing and the building is disinfected and left unused to dry out completely, ready for next spring.

Joris Somers MVM DVMs is Animal Health and Hygiene Manager at Glanbia, Ireland

DO

- Group calves by age and size
- Keep calves in stable groups for higher daily live-weight gain and reduced prevalence of diarrhea and pneumonia
- Group (ideally) 4-6 calves per pen for the first week
- Subsequently, keep calves in groups of 10-15 from two weeks of age
- Practice all-in-all-out systems
- Run a separate group of calves that were isolated for health reasons until they are ready to be weaned and turned out with the rest of the calves

DON'T

- Mix younger calves with older calves
- Overcrowd the calf pen
- Allow more than 30 calves to share the same airspace
- Allow calves to share air space with older cattle
- Mix animals from different pens
- Return isolated calves to their original group

WORKING WITH YOUR VET

Most veterinarians have a lot to offer—but you must help them understand what you need, says Jennifer L. Burton

“If someone brings you a dragon, a Martian or Bigfoot, you will be expected to provide care, protect public health and guard against any threat they may present to our food supply. My job is to give you the tools you need to figure it out.” So began my veterinary education ...

Veterinarians come with a variety of backgrounds and experiences, but we all share a similar core education. The concept of ‘One Health’ (see box) reminds veterinary students that human, animal and environmental health are intertwined, though medical science and clinical skills are taught using just a few standard species and systems.

A working relationship

Students are introduced to livestock production, nutrition and farm economics. Many programs incorporate courses on animal behavior and a few now offer elective classes addressing ecosystem health or sustainability. Aspiring Doctors of Veterinary Medicine—or DVMs—are asked to consider their role in animal welfare, though they may or may not have much exposure to animal welfare science. And while some groups are working to improve veterinary training in alternative medicine and sustainable agriculture, few programs currently offer continuing education credits for these topics.

So if your vet sometimes looks at you as though you’re a Martian, it may be because your farm doesn’t match that ‘core model’ taught in school. But that need not hinder a great working relationship. Though practices may differ, most

A LITTLE KNOW-HOW

As alternative medicine gains popularity, many companion animal veterinarians are increasingly well versed in these treatments. Some have experience with livestock species—especially poultry, goats or pot-bellied pigs, which are often kept as pets.

Remember: When seeking treatment advice for food animals, be sure to discuss residue risks.

vets have a great deal to offer if you’re willing to help your vet understand what you do—and what you need.

How can your vet help?

Regardless of specific experience or practice style, your local vet is well equipped to help with these vital aids to your livestock operation:

- **Early detection:** Early treatment is the most effective treatment, especially when using alternative/non-pharmaceutical product. Your vet can help detect early signs of disease.
- **Diagnostics:** From vitals to blood tests, fecal exams to environmental swabs, your vet is armed with a suite of tools to gather information that can help you focus your approach. He or she can also help prevent disease from spreading within your herd, and determine if an infection is zoonotic (transmissible to humans).
- **Procedures:** Many vets are happy to teach procedures such as castration, disbudding, or local anesthesia such as a nerve block. Small improvements in your technique could lead to big improvements in welfare and production.
- **Treatment plan:** Is this alternative treatment safe to try? How will you decide if it’s effective enough? When should you switch to plan B? Even if unfamiliar with some alternative treatments, many vets are willing to help screen for toxicity and residue risks, help determine appropriate dosing, and suggest triggers for switching to a different treatment.
- **Prevention:** Parasite life cycles haven’t changed

since your vet memorized them years ago, but recommendations on deworming and vaccination are regularly updated, and can be tailored to local ecology and farm practices.

- **Local knowledge:** Does this year’s weather favor certain parasites? Is there a new virus in the neighborhood? Your vet may be the first to know.
- **Trade-offs:** Even if they don’t have all the answers, farm vets are equipped to help optimize animal health in the context of production needs, market demands, economics, labor, and safety concerns.

A two-way street

Depending on specific interests and experience, your vet may be able to provide useful input for any number of situations. For example, they might offer nutrition advice to meet demand for ‘soy-free’ eggs or assist in planning an on-farm trial to see if a homeopathic or herbal remedy helps resolve a persistent health issue on your farm. Fruitful collaboration is most likely to emerge if you follow these guidelines:

- Help your veterinarian understand what you do and what you want. Use the list above (‘How can we help?’) as a starting point and ask where they think they can contribute significantly to animal health on your farm or ranch.
- Your veterinarian’s most valuable asset is their expertise. AGW recommends you have regular preventative care visits from your vet (i.e. do not just call when an animal falls sick). Some vets

‘ONE HEALTH’?

The ‘One Health’ concept recognizes that the health of people is connected to the health of animals and the shared environment. A ‘One Health’ approach encourages collaborative efforts of many experts (like disease detectives, laboratorians, physicians and veterinarians) working across human, animal, and environmental health to improve the health of people and animals, including livestock.

Find out more at cdc.gov/onehealth

will offer preferential fees if you arrange routine consultations and services. If you do not utilize standard services, such as herd health checks, you may need to negotiate consultation fees.

- Appropriate handling facilities will allow your vet to safely examine or treat your animals. Practicing good handling with your livestock will minimize the ‘fight or flight’ stress response and protects care givers from possible injury.
- Your vet may wish to use a ‘One Health’ approach, collaborating with other providers to meet your needs. Work with them to facilitate teamwork and ensure comprehensive care for your herd or flock.
- When determining a course of action, make sure your goals, your values and sound science are all thoroughly considered.

Collaboration

Whole-farm health is a community endeavor. Your veterinarian can provide invaluable assistance to protect animal health and product safety, and may be able to help address other complex problems such as environmental or human health impacts. For specialized treatments, a collaborative approach may be best. With communication and perhaps some negotiation, your veterinarian can play a significant role in fulfilling your goals for a robust, resilient agro-ecosystem that safeguards animal health and welfare.

Jennifer L. Burton DVM is a veterinarian and educator with a special interest in the intersection of food animal medicine and public health

SPREADING THE MESSAGE

Support AGW's new membership program and help grow your markets, says Katie Amos

At A Greener World, we're serious about changing the way we farm and feed ourselves. We believe the work we do alongside AGW-certified farmers and ranchers really can transform our food and farming systems—and make this planet a better place.

The rise in misleading label claims and the drive to further industrialize agriculture is raising big questions about the future of sustainable agriculture among farmers the public and policymakers alike. Working directly with pioneering high-welfare, sustainable farmers and ranchers, AGW is uniquely placed to play a leading role in presenting a genuine alternative to industrial farming. At the same time, our family of trusted certifications offer a way for shoppers to know their food purchases are having a positive impact on their health, animal welfare and the environment.

Membership matters

AGW's new membership program is a simple way for these same conscientious shoppers to make an even greater impact on our food and farming system.

AGW membership options are now available for likeminded individuals, businesses and organizations as a way to directly support our work. From our perspective, these ongoing membership contributions allow us to not only continue offering our farm certifications at an affordable rate, but also support the widespread adoption of sustainable farming practices through our technical and marketing services.

Help us help you

While we invite everyone to sign up to AGW membership, we are calling on our AGW-certified farmers and ranchers to help us grow the AGW membership program.

Helping us increase the number of AGW members is ultimately good for us all. Not only do all membership fees and donations go directly towards AGW's free technical and marketing support services (available to certified farmers

and those transitioning to sustainable practices), but a successful membership program has the potential to help educate more shoppers, develop further market opportunities and increase promotion (and sales) of AGW-certified products.

What is AGW membership?

The AGW membership program enables supporters to join other likeminded people and become a part of the solution to change food and farming for the better. Monthly member donations help AGW to:

- ▶ Offer consumers independent food labels they can trust—and a reliable way to choose meat, dairy and eggs from environmentally responsible, climate-friendly farms.
- ▶ Make healthy, sustainably raised meat, eggs and dairy available to all at a fair price.
- ▶ Improve the lives of millions of farm animals, with access to pasture and freedom to roam—no cages, crates or feedlots.
- ▶ Ensure every farmer gets the technical and marketing support they need to transition to sustainable production—and thrive as an independent business.
- ▶ Send a trained auditor to every certified farm at least once a year to ensure compliance with our animal welfare and environmental standards.
- ▶ Reach out to consumers, institutions, media and farmers about the importance of our certifications for building transparent and sustainable food production systems.

AGW members receive priority notifications, *Sustainable Farming* magazine and regular updates about our work and successes.

We need your support

Will you help us grow the movement? There are many ways to help raise awareness about AGW membership among customers and followers. Here are just a few ideas to get you started:

“AGW has been hugely supportive over the years. Promoting AGW membership is our chance to do something in return. It will also help us grow the local market.”

Jacqueline Smith, Central Grazing Company



Working together: The author, Katie Amos (left) and Annie Hopper from Scuttleship Farm, VT

“Consumers and farmers are tired of waiting for policy and corporate solutions to the lack of transparency in agriculture. Now more than ever, it's important for each of us to take action to build the world we want. A Greener World's trusted, third-party certifications cut through the greenwashing to achieve true sustainability; identifying—and rewarding—positive farm management. Buying sustainable products is a great start, but directly supporting our work will ensure sustainability becomes part of the fabric of our food system. We're thrilled to give people an easy, concrete way to join us as AGW Members and be a part of the solution.”

Emily Moose, AGW Director of Communications and Outreach

- ▶ Talk about the benefits of your certification and the work of the AGW program with your customers.
- ▶ Display information about AGW, including our website and how to sign up to receive our free newsletters.
- ▶ Set up a link to the AGW website—or even the membership page—on your website.
- ▶ Share information about AGW—and specifically our membership options—through your social media pages and newsletters.
- ▶ Encourage your customers and friends in your network to consider supporting us, and point them in our direction.
- ▶ Distribute our AGW membership handout at your market stall, farm store or farm events. We can send you copies to hand out.

Agriculture is at a crossroads

We all know agriculture is at a crossroads. By combining our efforts to help grow AGW membership, we can educate more shoppers about meaningful food labels and attract more people to purchase AGW-certified products, and continue to make sure sustainable farmers and ranchers are heard at all levels.

Most importantly, by working together, we can grow a larger base of committed people who act as ambassadors for sustainable food and farming in their local communities; who actively purchase certified products in the marketplace; and who directly support the development of sustainable solutions in agriculture.

If you feel the AGW program has helped your business in some way, we're asking you to return the favor by committing to one or more of the steps above. Your support to help us grow the AGW membership program will make all the difference to the important work we can accomplish in the coming years ahead.

Katie Amos is Lead Farmer and Market Outreach Coordinator with A Greener World



KID YOU NOT

Understanding the goats' reproductive cycle will improve results

The annual reproductive cycle in goat breeds from temperate latitudes (and some local breeds from the subtropics) is controlled by day length. Reproduction is seasonal with females ovulating during short days. As the daily periods of darkness lengthen, the breeding period starts and both oestrus behavior and cyclic ovarian activity occur. During the transition, goats can undergo anovulatory estrus ('silent ovulations') not accompanied by estrous behavior.

Most breeds of tropical and sub-tropical origin goats breed year-round, and breeding and anoestrus periods are more likely to be influenced by the availability of nutrition.

Puberty and breeding age

Puberty in female goats is the age that estrus is first detected, followed by cyclic ovarian activity. (In the male it is the initiation of spermatogenesis.) Goats usually reach puberty at around five months, although nutrition and season of birth/weaning can be a key influence. The presence or absence of a male is also a significant factor. Generally, breeding should be delayed until the animal has attained 60–75% of its mature bodyweight.

Does are seasonally polyestrous (having more than one period of oestrus a year) with an estrous cycle that lasts approximately 21 days. Reproductive efficiency in female goats is determined by processes such as the length of the breeding season, cyclic activity, ovulation rate, fertilization rate, the post-partum anestrous period and the growth and viability of the offspring. Useful measures for future breeding programs therefore include the kidding rate, weaning rate, kidding interval, liveweight of kids born or weaned and the length of reproductive cycle.

Estrus behavior

There are two distinct behavioral phases at estrus. 'Proceptivity' involves the female seeking and stimulating a male partner, while the second 'receptivity' phase consists of the female standing still as a response to nudging by the male, followed by mounting and mating. Proceptivity always occurs before receptivity, and then both behaviors are expressed at the same time.

Estrus behavior normally lasts for about 36 hours, but can vary from 24 to 48+ hours, depending on age, breeds, season and presence of a male. Mossi and Angora and Mossi goats, for example, have short estrus (20 and 22 hours). Similarly, the time from the start of estrus and when ovulation takes place can also vary considerably (from 9 to 37 hours) and is dependent on the breed.

Importance of nutrition

Levels of reproductive performance are dependent on genetic and environmental interactions, with seasonal availability of nutrition having the greatest influence. Nutrition can influence ovarian activity, impacting on fertility, especially ovulation rate. Targeting supplementation can result in increased litter size, while female responses to the male effect can also be influenced by improved nutrition and supplementation. Although some goat breeds have an excellent ability to adapt to nutritional extremes, this can negatively impact reproduction. The seasonal availability of nutrients can also affect reproduction considerably.

Article adapted from Farm Health Online. For more information about practical, science-based advice on high-welfare livestock management, visit farmhealthonline.com

GOAT FOR IT

Some signs of a doe in heat:

- Reduced appetite and milk yield
- Seeking out the buck
- Restlessness
- Frequent urination
- Vocalization/bleating
- Mounting or allowing mounting by other does
- Swelling, redness and/or presence of mucus on the vulva
- Tail wagging
- Vaginal discharge

CYNOCUB/ISTOCK

Certification news

GRASSFED CHALLENGES

Are the grassfed standards right for you, asks Tim Holmes

One of the most common questions we receive is, "What feed supplements do you allow under the Certified Grassfed by AGW program?" To address this question, we have produced an *Information on Supplements* paper, available on our website. But let's explore the issue further here.

Grassfed means grassfed

The Certified Grassfed by AGW program is an optional, additional accreditation to AGW's flagship Certified Animal Welfare Approved standards. A core requirement of the Certified Grassfed by AGW program is that animals *must* be fed a grass- and forage-based diet. Conditions on the ground can impact the feasibility of 100% grass-feeding—particularly for farms and ranches in areas with short growing seasons or variable precipitation. Because the grazing, forage and hay in such locations can be of questionable quality, operations can struggle with body condition scoring, resulting in requests to use supplementary protein or energy feeds.

Permitted or prohibited?

Although some supplements are permitted under AGW's Certified Grassfed standards, they must have a similar nutritional analysis (in terms of fiber, protein, fat and carbohydrate content) as forages in order to qualify for use.

Under the Certified Grassfed by AGW standards, farmers can use supplementary feeds such as forage cubes, grass cubes and pellets, alfalfa pellets or cubes, as well as feeds made from many different type hulls and gin trash that are by-products of the cleaning process—as long as they meet the criteria outlined in the *Information on Supplements* paper.

Consistent with general expectations of the grassfed claim, the Certified Grassfed by AGW program does not allow *any* grain-based feeds

or protein tubs. In addition, common feeds such as grains, urea, and molasses are not permitted. (While molasses can be used as a binder in mineral and vitamin supplements, it cannot be given as a feed itself.)

If the supplement product is not a forage then two of the first three ingredients listed *must* be a mineral or source of mineral. Similarly, the first two ingredients of any supplement must not comprise grain, protein or processed grain by-products or plant protein (if not identified as what type of plant protein it is).

Finally, supplements including fruit, cottonseed meal, soybean meal, citrus pulp or the feeding of root crops, such as carrots, turnips, radishes or other similar type crops, are also not permitted; and Certified Grassfed by AGW animals must never be exposed to situations where they could consume the roots of these crops.

Remember: If you're ever unsure about any feed not listed in the paper, the onus is on you to contact the AGW program before use.

Is Grassfed right for you?

The Certified Grassfed by AGW program is a good fit for 100% grass and forage-feeding systems that are not dependent on supplemental feeding of non-forage type products. It's important to remember that while grassfed management can offer additional marketing benefits, a grassfed certification alone does not signify high-welfare management. Farms and ranches that face less than ideal grass-feeding conditions will probably achieve the best animal welfare and production outcomes under our highly regarded Certified Animal Welfare Approved by AGW standards, which allow a larger variety of supplementary feeds.

Download the *Information on Supplements* paper at agreenerworld.org/grassfedsupplements

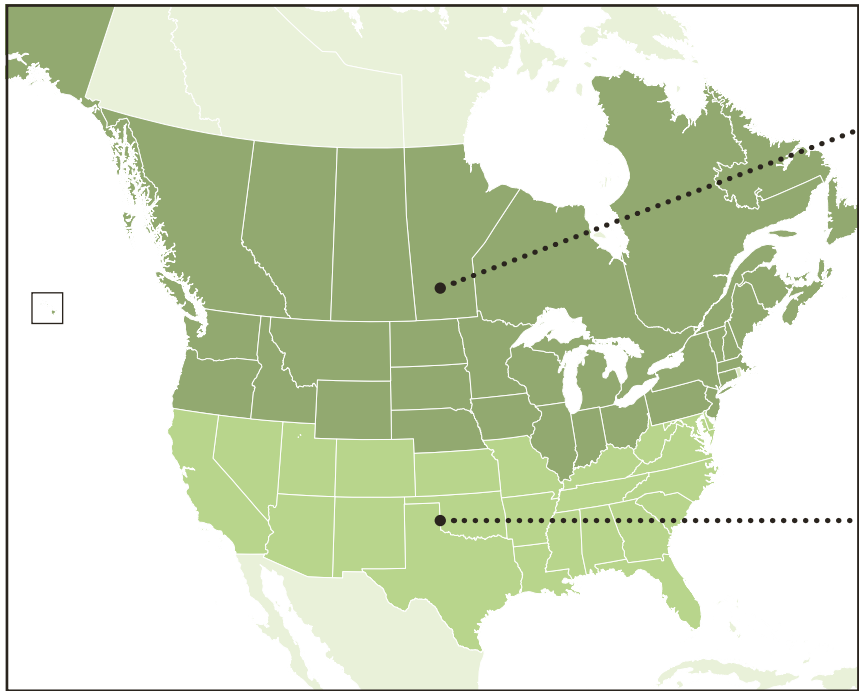
Tim Holmes is
Director of Compliance
with A Greener World

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Katie Amos
717-412-1701
Katie@agreenerworld.org



Callie Casteel
931-548-0664
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“Everybody says the label is just beautiful. We are absolutely thrilled. We have a whole new market opened to us.”

Suzanne Broussard, Dovetail Farm and Vineyard, Bells, Texas



Promoting A Greener World

AGW is proud to offer low-cost branded promotional materials to help raise awareness of your certification and better communicate the wider benefits of your farming practices. Every purchase also supports our work to educate and inform consumers—and helps keep your certifications affordable.

For more promotional materials—and to place an order (with shipping)—visit agreenerworld.org/shop-agw

For shipping to Canada, call 202-446-2138



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- Low-style cotton twill with Velcro strap
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Meet the farmer

FARMING WITH TLC

Annette and Mark Thomas raise Certified Animal Welfare Approved and Certified Grassfed by AGW beef cattle in northern Oklahoma. They market their beef as TLC Grassfed Beef, selling direct to consumers and local stores who are looking for local, certified grassfed beef.

How did you get into farming?

Mark and I grew up working on our families' farms in west Oregon and east Texas, respectively. After both earning college degrees in agriculture, Mark worked in the grass seed business and I worked in animal health and nutrition. We now farm in Oklahoma and Mark continues to work for an Oregon farmer-owned cooperative, marketing grass seed and cover crops. We farm 480 acres, with 160 acres of permanent pasture, 80 acres of woodland and 240 acres of no-till annual crop rotations for grazing, hay or seed. In late 2016, we had an opportunity to supply AWA-certified beef. We quickly learned the standards were consistent with our core beliefs and how we farm, so we applied. Since then, the AGW team has become a valuable resource for us.

Describe a typical day

We don't really have a 'typical' day. We have our priorities and work from there. Our first priority is ensuring the health of our cattle and seeing they have forage, shade or shelter, fresh water and are safe in their pastures. Depending on Mark's off-farm work schedule, we split the cattle checks

and chores as needed. I tend to focus on marketing, delivering beef to customers and attending customer events. On the weekends, we set aside time to work on bigger projects.

Who are your customers?

Our customers are those who care about responsible and ethical practices with the land and the animals. They want to get to know their farmer, understand more about the farm and their food, and support local communities.

What's the benefit of being certified by AGW?

Although AGW certification has taken an investment, it has given us third-party credibility and separates us from other farms or brands making uncertified claims. Customers can be confident about our practices and farm products.

How can the market for sustainable food be improved?

AGW provides valuable services to farmers and consumers. Collectively, the information every AGW farmer and supporter communicates in conversations with consumers, friends or policy-makers will improve the marketplace. It is far greater than a single event.

Sustainable farming principles: why do they matter?

We would go a step further and say, as farmers, we need to adopt regenerative agriculture practices. Fewer people farming more acres with larger machinery, tillage and more inputs in the name of efficiency and commodities has created an unsustainable system—economically and environmentally. By applying regenerative practices, farmers can restore soil health, raise nutrient-rich foods and improve the environment, sequestering carbon and improving water quality.

What is the biggest threat to the sustainable farming movement?

While I don't believe 'bigger' is the enemy, organizations that push for vertical integration and consolidation of animal agriculture, removing grazing animals from the land and making it more expensive to bring food products from small farms to market, are undoubtedly putting more power and control into fewer hands.



THOMAS LAND AND CATTLE LLC (x2)

AT A GLANCE

Farm: Thomas Land and Cattle LLC
Certification date: January 2017
Size: 480 acres
Soil type: Sandy and sandy loam soils
Altitude: 1,300 feet
Annual rainfall: 32 inches
Enterprises: 45 Angus cross cows (Certified Grassfed by AGW), raising calves as feeders, breeders or finished beef. They also grow certified triticale seed for sale.

facebook.com/TLCGrassfedBeef

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"Our AGW certification gives customers an idea of what we're doing on the farm without them having to come out. Since we got certified, we've had a 20 percent increase in sales. People love it!"

TIMOTHY HAWS, Autumn's Harvest Farm, New York

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