

Resources on shade and shelter structures for organic cattle

The TDA Organic Certification Program has compiled the following listing of resources on development for creating shelter and shade structures so that organic livestock operations may more easily comply with [§205.239\(a\)](#) of the USDA National Organic Program (NOP) Regulations ([7 CFR Part 205](#)).

Creation of shelter by planting trees in pastures

Texas A&M Forest Service: Identification of Texas EcoRegions and identifies trees and vegetation that are native or have adapted without becoming invasive to the region.

<http://texastreeid.tamu.edu/content/texasEcoRegions/BlacklandPrairies/>

An article from the Virginia Cooperative Extension details the process of creating a silvopasture:

https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/CSES/CSES-185/CSES-185P.pdf

Things to consider about planting trees for shade, windbreaks, and shelter:

1. This is a long-term solution that will stimulate long-term soil ecology and reduce the impact of wind erosion; however, this should be coupled with the building of windbreaks and/or use of shade tarps/structure until the trees are mature enough to provide shade and shelter.
2. There will be equipment (post hole augers to bust through caliche) labor, soil amendment inputs, and water expenses until the root systems are established and continued water expenses during drought periods.
3. The Virginia Extension article identifies the factors that should be evaluated when selecting a tree species, regardless of whether you desire the trees to be another crop to further diversify your operation or to meet the NOP Requirements and to reduce stress in your livestock.
4. Transplanted trees will need to be fenced off from cattle for a period of 12 months to prevent any foraging while the trees transition into organic status. This may create a simple and low cost buffer through the use of 3-4 T-posts and hog wire set at a sufficient distance from the tree limbs and height to accommodate for canopy growth during the 12-month transition period. (Remember that cattle are curious and will try to lick and eat leaves to see if they are palatable.)
5. Additional resources for planting trees for shelter and creating a silvopasture:
 - a. Your local USDA NRCS Service Center, <https://offices.sc.egov.usda.gov/locator/app?state=TX>
 - b. Sustainable Agriculture Research and Education (SARE), www.sare.org
 - c. ATTRA-NCAT, www.attra.ncat.org
 - d. Wild Farm Alliance, www.wildfarmalliance.org

University of Minnesota extension article and corresponding webinar, “Considerations for out-wintering the dairy herd”

Article: <https://wcroc.cfans.umn.edu/outwintering>

Webinar: https://articles.extension.org/pages/71817/considerations-for-out-wintering-the-organic-dairy-herd-webinar-by-eorganic#.VQhHANLF_To

While the research is focused on health and milk output of dairy cattle, the basic concepts of cattle needing wind/snow breaks and clean bedding areas are applicable to all production models.

Things to consider about the information from this article:

1. Any wood used to build a compost barn or wind break must not be treated with a wood preservative or have sufficient barriers to prevent contact with soil and livestock.
2. Both the hay and any roughage used for bedding in a compost barn must be certified organic.

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3. There is a picture and description in the webinar that is essentially reversing the concept of bringing hay to the cattle and uses temporary fencing to bring the cattle to the appropriate bales. Operators who are interested in this method and whose operation is not currently located within the imported fire ant quarantine area should pay close attention to ensure any hay trucked to their facility does not come from an area that is under quarantine.
4. For Texas, sand would likely be more easily obtained than sawdust from untreated wood. Additionally, it would retain less heat during warm periods. Please note that the sand must not contain prohibited substances (e.g. sand used in oil fracking).

Article from Dr. Temple Grandin, “Evaluation of the welfare of cattle housed in outdoor feedlot pens”

<https://www.sciencedirect.com/science/article/pii/S2451943X16300278>

- While the focus of the article is conventional livestock production in feedlots, in Section 3.4 Dr. Grandin lays out basic concepts that can be modified to determine shade structure size and placement needs for any beef operation.
- This article also contains practical approaches for treatment of newly arrived cattle that can easily be applied to the handling and treatment of cattle while in feed paddocks, quarantine areas, confinement for health treatments, and transport for sale/slaughter.
- Several of the studies referenced by Dr. Grandin included research conducted in the Texas Panhandle so little adjustment must be made for the breadth of climatic conditions organic livestock operations experience here in Texas.

Article from USDA NRCS Conservation Practice Standard, “Livestock Shelter Structures”

https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1241322.pdf

- This article identifies various types of shade and shelter structures for livestock and includes mobile, temporary, and permanent structures.
- Additionally, this article goes into detail on how shelter structures may be used to protect water quality and soil health.
- This article implies that there may be some types of lumber treatments that could be allowed for use in building new structures on currently certified organic livestock operations – please refer to the NOP guidance below to better understand what actions must be taken if you must use treated lumber.

USDA National Organic Program Guidance document on the use of treated lumber in organic operations (NOP Policy 5036):

<https://www.ams.usda.gov/sites/default/files/media/NOP%205036%20Treated%20Lumber%20Draft%20Guidance.pdf>

- Consider the use of multiple types of barriers within a single structure such as concrete, cedar fence panels, metal roofing, and metal sheeting, etc. so that both the soil and livestock do not come into contact with the treated lumber while maintaining structural soundness against moisture, temperature fluctuations, and high winds.