

The value of trees in promoting animal welfare in organic systems: a review

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Abstract

The four organic principles of health, ecology, fairness and care indicate, directly and indirectly, the value placed on animals as part of organic farming systems and the importance of management practices which promote good animal welfare. The principle of fairness' supporting text specifically states that farmed animals must be "provided with the conditions and opportunities of life that accord with physiology, innate behavioural characteristics and well-being". These words make reference to the three fundamental pillars of welfare which are biological functioning, normal behaviour and affective states. Together, they offer an insight into 'whole animal' welfare. Access to pasture is a key practice in organic systems for fulfilling high welfare requirements, promoting exercise and general animal well-being. However, in grazed pasture, where the presence of trees and shrubs is minimal or absent, animal welfare, according to all three pillars, may be compromised. For example, the negative impacts of heat stress include reduced feeding behaviour, metabolic stress and a leaky gut which can trigger an inflammation cascade leading to an increase in disease, for example, mastitis in dairy cows. Heat stress can also negatively affect reproductive health leading to reduced fertility, compromised foetal development and growth as well as poorer quality colostrum and milk. In contrast, access to trees in pasture offers multiple benefits to animals including the ability to express body care, the promotion of social harmony, shade and shelter, as well as browse opportunities for nutrients and self-medication. Indirect benefits include the amelioration of hot and cold conditions promoting pasture quality and growth alongside water infiltration. Furthermore, research indicates that the presence of trees has an important role to play in the mitigation of gaseous emissions from farmed animals. This includes the capturing of carbon within the tree, ammonia in the atmosphere and reducing or stabilizing methane and nitrous oxide emissions from the animals. The integration of trees into the farmed landscape, utilising different designs such as woodland, wood pasture, hedgerows, shelterbelts and in-field trees can promote high animal welfare and thus help achieve the fulfillment of the organic principles.

Keywords: Trees, animal welfare, organic principles.

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