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Some animal production methods are unsustainable: factors include poor welfare

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There is an urgent need for sustainable animal production systems. A system or procedure is sustainable if it is acceptable now and if its expected future effects are acceptable, in particular in relation to resource availability, consequences of functioning, and morality of action¹. What might make any animal usage system unsustainable? The system might involve depletion of resources such that a resource becomes unavailable or a product of the system might accumulate to a degree that prevents the functioning of the system. However, any effect which the general public find unacceptable makes a system unsustainable. A production system might be unsustainable because of inefficient usage of world food resources; adverse effects on human welfare, including health; poor animal welfare; harmful environmental effects, such as low biodiversity or insufficient conservation; unacceptable genetic modification; not being "fair trade", in that producers in poor countries are not properly rewarded; or damage to rural communities². Consumers might judge, because of any of these inadequacies, that the quality of the product is poor.

Inefficient use of world resources is likely to become much more important as a factor affecting plant and animal production³. Techniques such as life cycle analysis will have to be used in order to justify continuation of a system⁴. One consequence of this is that animals that eat leaves and other food that humans cannot eat, such as ruminants and herbivorous fish, will become more important than animals that are carnivores or that eat grain. Efforts to reduce greenhouse gas production by ruminants will be important and the trade-off between resource efficiency and greenhouse gases will have to be considered. Animal and plant production systems that use the resource inputs more efficiently have a less damaging effect on externalities such as land use, water use, nitrogen and phosphorus pollution and greenhouse gas production so they can make more land available for conservation⁵.

Animal welfare is a component of sustainability and good quality of product. For many in the general public, animal welfare is the most important aspect of sustainability after human welfare. Systems with negative impacts on animal welfare are unsustainable and associated with poor product quality^{6,7}. Three-level plant production, including pasture, shrubs with edible leaves, and trees that may also have edible leaves, are an example of a silvopastoral system. The production of leaves and other material that can be eaten by the animals is much greater than can be achieved by pasture-only systems. Results presented from tropical and sub-tropical studies show that production of cattle and other animals can be better, water and land use reduced, biodiversity much increased, animal disease reduced, and animal welfare improved in three-level silvopastoral systems^{8,9}.

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In the near future, unsustainable practices in animal production will include: pollution of waterways by farm products, soil damage that releases greenhouse gases, avoidable food waste, production in which poor farmers are exploited by large companies, feeding fish to fish, feeding grain to ruminants, feedlots, individual confinement of sows and calves, battery cages for hens, force-feeding, high stocking densities, genetic selection for the highest milk yields in cows and for muscle growth in broilers, avoidable long distance transport, slaughter without stunning.

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