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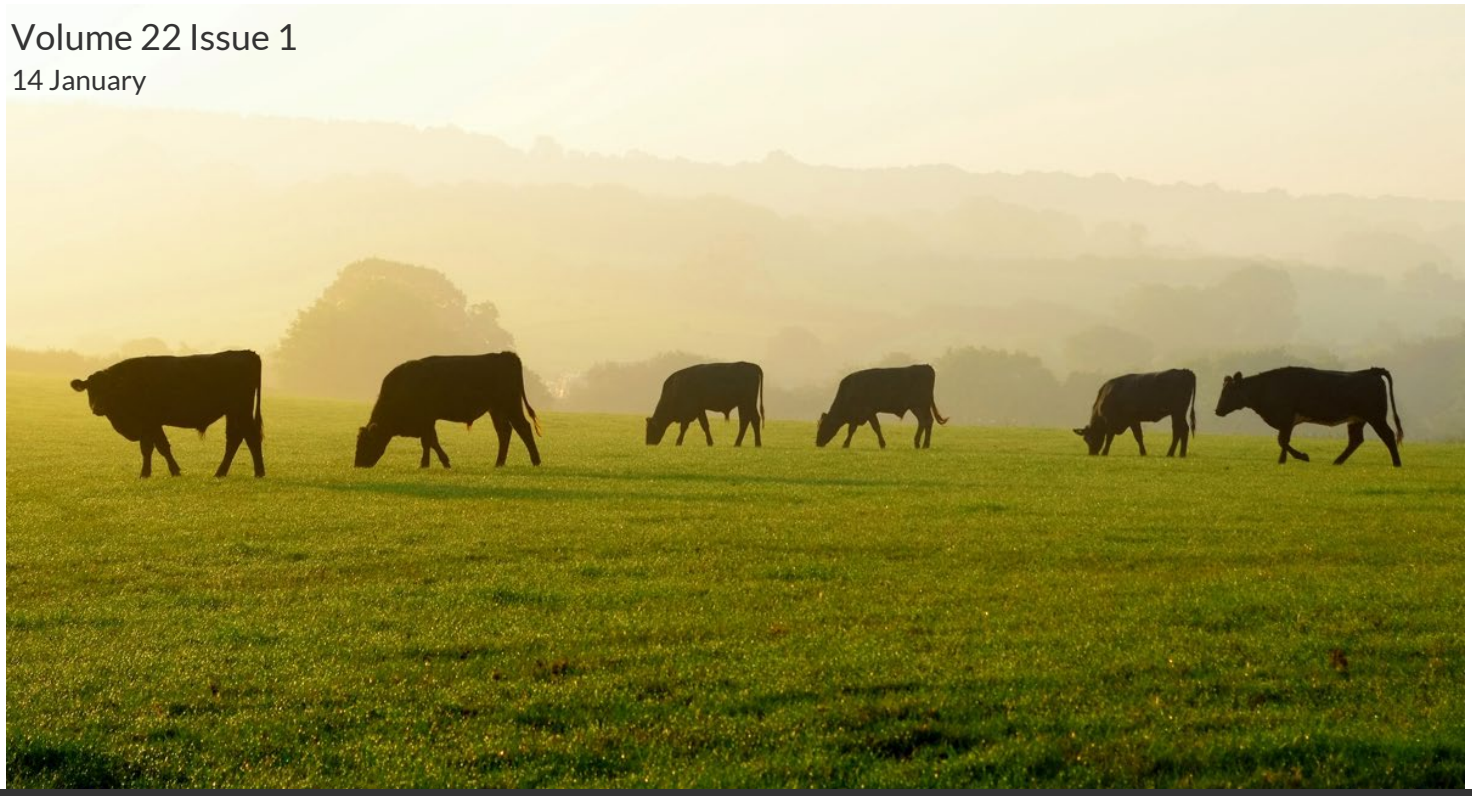

The Meat of the Matter: Environmental Dissemination of Beef Cattle Agrochemicals

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A recent Point of Reference, “The meat of the matter: Environmental dissemination of beef cattle agrochemicals,” published in Environmental Toxicology and Chemistry addresses synthetic chemical cocktails being emitted from cattle feed yards into the environment and how they can impact our ecosystem and our health.

Industrial meat production facilities have a bad reputation for their impact on the environment. Concentrated animal feeding operations (CAFOs) are known to release greenhouse gases related to global warming and for discharge of manure to watersheds, which affects water quality. A less publicized impact of modern beef production is the excessive use of pharmaceuticals and pesticides, which end up in the environment. The animal production agriculture sector holds the record as the single greatest consumer of antimicrobials. Dust from feed yards typically contains antibiotics, synthetic steroids (growth hormones) and pesticides. At a time when honeybee population decline is a hot topic, it is curious that the dust emitted each day from feed yards in the U.S. alone theoretically contains enough permethrin to kill more than a billion honeybees per day.

Since many feed yards, especially those in the U.S., are located in arid to semiarid regions, chemicals associated with manure particles can be transported on windborne dust over large distances. As a result, open-air beef cattle feed yards may collectively represent one of the largest unconstrained and unrecognized sources of pesticide and antimicrobial emissions on earth. Humans and wildlife, including birds and mammals, may be exposed to these chemicals either directly or indirectly.

A limited number of laws and regulations addressing odors, dust emissions and water contamination have arisen in response to complaints from people living in the vicinity of feed yards. However, no regulations address agrochemical content of feed yard dust emissions. Environmental Impact Assessment guidance for the U.S. Food and Drug Administration New Animal Drug Application process does not recognize particulate-driven aerial transport of drugs into the environment. Globally, regulations on the use of agrochemicals in beef production vary considerably.

The need to produce affordable, readily available and nutritious beef is steadily increasing, but it should not be met at the expense of environmental and human health. Feedyard waste management strategies, when used appropriately, can mitigate introduction of agrochemicals into the environment, but implementation can be costly. Potential ameliorative approaches may include reduced reliance on veterinary pharmaceuticals that have potential to adversely impact local and distant ecosystems, development of alternative green chemistries, integrated pest management strategies, effective waste treatment and management strategies, and broader understanding of the impacts of aerial agrochemical dissemination.

Read the article directly: https://doi.org/10.1002/etc.4965