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Editorial

# The Effect of Animal Production Development on Public Health

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The livestock sector is by far the single largest anthropogenic user of land. Approximately, grazing occupies 26% of the Earth's terrestrial surface. Due to increase human populations, In the last 50 - 60 years, the trend in animal production has shifted from small family farms and grazing operations (AFOs) to massive commercial confinement operations (CAFOs). It's a form of large-scale industrial agricultural facility that raises animals in high-density environments for meat, eggs, and milk consumption. Animals generally linked with CAFOs involve cows, pigs, and poultry (particularly turkeys and chickens). Manure is considered excessive as a result of animal agriculture (excreta produced by all types of farmed livestock). Despite the fact that manure promotes soil quality and fertility, as well as assisting in the improvement of the soil's carbon processing power, thereby aiding in the elimination of carbon from the environment, the most pressing public health crisis associated with CAFOs stems from the huge amounts of manure they produce, the entirety of which is applied to crops as fertilizer. The quantities of waste that must be treated and disposed of it while confining so many animals entirely or mainly indoors creates much of the environmental damage caused by factory farms, with some operations generating as much waste as an entire society. According to the Environmental Protection Agency, all confined animals produce three times the amount of raw waste generated by humans in the United States. Two key distinctions are that livestock CAFO animal wastes can be up to 100 times more concentrated than human wastes, and human wastes must be treated before being released into the ecosystem by legislation. Viruses, bacteria, protozoan parasites, and helminthes that are pathogenic for humans, other domestic animals, and wildlife can be carried and shed by livestock animals. Nonpathogenic bacteria and parasites can sometimes be present in significant amounts in animal waste, soil, and water. Just a few animal pathogens found in urine, water, and soil are capable of infecting humans and domestic animals. These are the microbes of major concern to the wider population, who are typically exposed to these animal pathogens when consuming feces-contaminated food or water. Rotaviruses, hepatitis E virus, *Salmonella* spp., *E. coli* O157:H7, *Yersinia enterocolitica, Campylobacter* spp., *Cryptosporidium parvum* and *Giardia lamblia* are only a few of the pathogens that can be found in animal waste. These zoonotic pathogens can infect humans through a variety of routes, including polluted air, contact with livestock animals or their waste products, swimming in water contaminated by animal feces, exposure to possible vectors, and the ingestion of food or water contaminated by animal wastes. CAFO manure and wastewater are commonly used as soil amendments in agricultural fields. Following precipitation events or by interception with flowing water, manure particles and pathogens can become suspended in the water. As a result of runoff from agricultural lands and manure storage areas, interactions between surface water and water in the subsurface and/or re suspension of polluted soil and/or stream sediments, surface water sources can become contaminated.

Animal husbandry activities are linked to the vast majority of pathogenic zoonoses that generally infect humans. Many of these pathogens are prevalent in livestock and can be difficult to eliminate from the animals or the facilities where they are produced. Several waterborne outbreaks have been linked to the presence of pathogens in animal manures. The results have been serious when manure has been suspected as the cause of the outbreak. Another issue that has a significant effect on global public health is antimicrobial usage in animal

agriculture, which may worsen the problem by rising pathogen resistance to therapeutic drugs used to treat human disease. Changes in antimicrobial agent development and availability, advancements in animal welfare practices, and a growing need for therapeutic usage as animals are confined into smaller and more tightly packed housing units all contribute to the increase in antimicrobial agent use in agriculture. Due to the near containment and increased risk of disease transmission, there is a perceived need for prophylactic use, as well as recognition of the financial benefits of reducing the time to market weight. The increased use of antimicrobial agents in confinement facilities, especially the use of antimicrobial agents at non-therapeutic doses in animal agriculture, has sparked widespread concern. Antimicrobial usage invariably selects for tolerance in both commensal and pathogenic microorganisms that are exposed to the agents. Antimicrobial resistance in zoonotic pathogens is a significant threat to human health; infection with zoonotic pathogens that are resistant to clinically important antimicrobials may lead to diseases in humans with little or no treatment options. When pathogens become immune to antimicrobials, an individual's susceptibility to infection will increase up to threefold, owing to a temporary decrease in the pathogen's resistance to colonization. From this we concluded that the extent of the impact of the development of animal production towards confinement breeding on the environment in general and on public health in particular, which may cause us to recalculate many practices that would reduce as much as possible the negative impact on the environment and public health such as using salts of organic acids as feed supplements to improve production instead of antimicrobials. Therefore, in this direction, we must always look for means that have less impact on public health and more friendly to the environment.

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