Antibiotics in animal feed and their role in resistance development

Animals and humans constitute overlapping reservoirs of resistance, and consequently use of antimicrobials in animals can impact on public health. For example, the occurrence of vancomycin-resistant enterococci in food-animals is associated with the use of avoparcin, a glycopeptide antibiotic used as a feed additive for the growth promotion of animals. Vancomycin-resistant enterococci and vancomycin resistance determinants can therefore spread from animals to humans. The bans on avoparcin and other antibiotics as growth promoters in the EU have provided scientists with a unique opportunity to investigate the effects of the withdrawal of a major antimicrobial selective pressure on the occurrence and spread of antimicrobial resistance. The data shows that although the levels of resistance in animals and food, and consequently in humans, has been markedly reduced after the termination of use, the effects on animal health and productivity have been very minor.