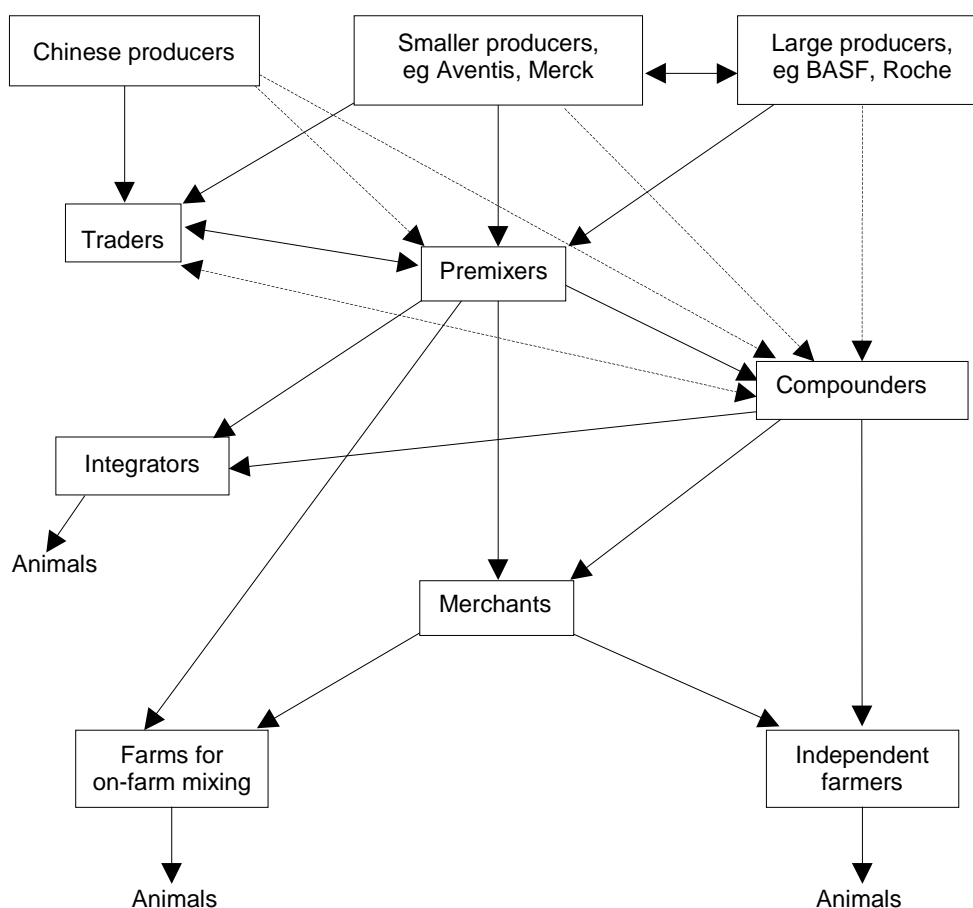


The supply chain for vitamins: industry distribution structure for animal feed and health use

FIGURE 1

Diagrammatic representation of supply chain



Source: CC.

1. In this diagram double-headed arrows indicate that there is a possibility of two-way arbitrage between the sectors. Dotted arrows are used to represent the possibility of trade but where we believe that the volumes involved are likely to be low, at least in the UK.

2. As in Appendix 4.5, vitamins producers have been divided into three categories: the Chinese producers, smaller Western producers with a limited production portfolio; and the larger vitamin producers (BASF post-merger and Roche) who are able to provide most types of vitamins. There will be some trade in vitamins between these players as they seek to ensure they are able to offer a full portfolio of products. The Western producers may actually distribute their product through an agent, who may be assigned to a particular geographic area.

3. Traders are active in the supply chain for feed vitamins in the same way as they are for food and pharmaceutical vitamins (see Appendix 4.5, paragraph 3). This is based on Chinese production, and some product from some of the Western producers. Again there may be two-way exchanges of product through the trader sector, premixers and compounders.

4. In the UK, most vitamins for animal feed use are routed through the premix sector. Premixers will purchase material from the Western producers and sometimes product of Chinese origin, either direct or through traders. They will then supply completed premix to integrators and feed compounders for incorporation into feed. There is a small amount of on-farm preparation of feed using premixes, mainly in the pig industry. We were told that this was more common in other countries. However, most independent farmers use compound feed prepared by a feed mill that incorporates premixes. Integrators may also purchase some of their feed requirements from feed mills.

5. BASF told us that compounders and integrators could purchase vitamins directly rather than premixers, for incorporation into feed. However, we were told that this hardly ever occurred, at least in the UK. We were also told that, in any event, the compounder or integrator would in effect have to manufacture its own premix.