CLAIMS

What is claimed is:

1. A composition comprising a carotenoid oxygen co-polymer for use in animals susceptible to developing Necrotic Enteritis or *C. perfringens infection*.

2. A composition of claim 1 for use in poultry.

3. A kit comprising:
a composition comprising a carotenoid-oxygen copolymer; and
optionally instructions for use for preventing and/or reducing the risk of developing Necrotic Enteritis (NE), and ameliorating associated conditions, such as associated gastrointestinal conditions and for the treatment of an animal having, or at risk of, necrotic enteritis or *C. perfringens* infection or exposure.

4. A composition comprising a carotenoid oxygen co-polymer for animal feed or an animal feed supplement in livestock who are susceptible to Necrotic Enteritis or C. perfringens infection.

5. A composition of claim 4 for use in poultry feed.

6. The composition of claim 1, 2, 4 or 5 wherein the carotenoid-oxygen copolymer is formed from one or more of: OxBC, OxLut, OxLyc and OxCan.

7. The composition of claim 6 wherein the carotenoid-oxygen copolymer is formed from OxBC.

8. The composition of claim 6 wherein the carotenoid-oxygen copolymer is formed from OxLut.

9. The composition of claim 6 wherein the carotenoid-oxygen copolymer is formed from OxLyc.

10. The composition of claim 6 wherein the carotenoid-oxygen copolymer is formed from OxCan.

11. The kit of claim 3 wherein the carotenoid-oxygen copolymer is formed from one or more of: OxBC, OxLut, OxLyc and OxCan.

12. The kit of claim 11 wherein the carotenoid-oxygen copolymer is formed from OxBC.

13. The kit of claim 11 wherein the carotenoid-oxygen copolymer is formed from OxLut.

14. The kit of claim 11 wherein the carotenoid-oxygen copolymer is formed from OxLyc.

15. The kit of claim 11 wherein the carotenoid-oxygen copolymer is formed from OxCan.