

# The best Omega 3 sources for feed in Australia.

Dr Stuart Wilkinson

Summary:

- Essential Fatty Acids, EPA and DHA, are the required to provide the animals with biologically important Omega 3 and Omega 6 fatty acids.
- The ratio of Omega 3 : Omega 6 fatty acids is more important than the overall total EFA's.
- Fish oils remain the most effective source of EFA's.
- Salmon Oil is the best form of Omega 3 and 6 in Australia.
- For a dry powdered product Salmate Dry provides an encapsulated stable source of EFA's

Essential fatty acids (EFAs) are essential in the production of a group of compounds called eicosanoids. They serve as building blocks for several types of prostaglandins, which help in tissue remodelling, inflammatory response, muscle contraction and wound healing. EFAs are also important in producing progesterone, which supports a pregnancy if one occurs until the placenta can sustain the pregnancy later in gestation. When progesterone levels drop, muscle contractions increase, and components of the immune system infiltrate the reproductive tract and destroy harmful agents (pathogens) that may be present. This mechanism depends upon the correct combination of EFAs to function effectively. However, too much prostaglandin after fertilisation can cause early embryonic death (EED). EFA's helps preserve embryos by enhancing progesterone needed for embryo growth, while inhibiting a prostaglandin that threatens embryo survival.

'Essential fatty acid (EFAs)' refer to Eicosapentaenoic acid (EPA – C20:5  $\omega$ -3) and Docosahexaenoic acid (DHA – C22:6  $\omega$ -3). These fatty acids cannot be synthesised in the body but is required for certain essential biological functions, of which omega-3 (Linolenic) and omega-6 (Linoleic) fatty acids are the most important. Too often, diets fed to farm animals are deficient in the omega-3 fatty acids, especially the long chain fatty acids. It is important to note that, not only is the total amount of these fatty acids in a ration important, but also the **ratio** in which they occur.

Currently, fish oils, algae, and krill are the most viable sources of EFA's. SALMATE® is a natural source of polyunsaturated fatty acids (PUFA) EPA and DHA, which are derived from high quality fish oil. Fish oil provides an excellent balance of EPA and DHA in proportions that help provide the best physiological and cost-effective results. At this point in time, fish oil is the most cost-efficient raw material. While marine algae present viable opportunity and is a sustainable resource, to date, marine algae only provide DHA and not EPA fatty acids, although we need both fatty acids.

In Australia high quality salmon oil (Salmate L) is the best source of Omega 3 and has the best ratio of EFA's. For those applications requiring a dry powdered product SALMATE® Dry is a long chain essential Omega-3 fatty acid encapsulated product made of approximately 45% fish oil, which together with natural antioxidants, has been encapsulated in a starch matrix to provide the essential fatty acids.