

ASC Responsible Feed Project

White paper – Terrestrial Animal Ingredients

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Within the ASC Responsible Feed Project several Technical Working Groups (TWGs) will focus on what “responsible” should mean for their areas of expertise.

These TWGs address the main aqua feed ingredients groups: 1) marine ingredients, 2) terrestrial plant ingredients, 3) terrestrial animal ingredients, 4) micro ingredients and one working group on 5) feed mill requirements and supply chain.

As a starting point for the group discussions on what “responsible” should mean, a number of White Papers are drafted (one per TWG). These papers will present an overview of the current environmental and social issues per ingredient group, as well as proposed steps forwards and points of attention. The reason for the development of these papers is to make sure that all members of the relevant TWG have the same starting information. Depending on their stakeholder background and/or expertise, members analyses of, and additions to this information are expected.

The key role of the TWGs is to develop draft criteria and indicators for the Feed Standard based on the starting point of these WP’s.

Please keep in mind that the points addressed in the WPs should start the discussion, not define its boundaries.

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Each White paper is constructed according to the Terms Of Reference, as agreed upon by the Steering committee during the meeting of 24th January 2014.

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Introduction & Scope

A relatively small proportion of the ingredients used in aquafeeds are derived from terrestrial animals and a variety of animals are used, depending on what is known and important regionally and the dietary needs of the farmed species. At its first in-person meeting (Hong Kong date) the Stakeholder Committee decided to focus on terrestrial animal sources of aquafeed ingredients as one of the key areas where the standard should be developed.

As many of the farming and processing aspects would be similar to the production and processing of plants these issues are not explored in detail in this paper. Readers with an interest in the environmental impacts of farming should refer to the land based plant material white paper.

In comparison to most plants, animals are also produced in intensive facilities (battery hens, feedlots etc) which have well known water pollution problems but lower habitat impacts. These types of facilities are better viewed as industrial facilities and dealt with via the processing requirements, especially as facilities such as feedlots are collocated with slaughter facilities.

However, animal welfare and husbandry is a significant issue for the meat industry and the information below focuses on this aspect.

Findings

There is no single scheme that meets the ASC's requirements in their entirety. This general conclusion is certainly true on an ingredient basis and probably true on a geographic basis as well. No ingredients have workable schemes in place that can supply sufficient volumes in the same manner as, potentially, soy and palm oil. The closest would be GlobalGAP which has standards for the primary species of animals farmed around the world but available volumes may not be available. The Sustainable Beef Roundtable is a way off having a fully operational system in place and beef is only one of a number of animal products used. Some have workable schemes that are geared more for human food grade product (e.g. organic, animal welfare and Fair Trade standards) whilst others may require changes in scope or levels of performance.



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Having said the above there are some broadly agreed, international expectations for defining suitable animal welfare and these have been codified by the OIE (World Organisation for Animal Health) for both terrestrial and, soon, aquatic animals. The terrestrial code was agreed in 2013 and would not have influenced the wide variety of locally based codes of conduct and best practice guidelines which could be a starting point for getting producers involved in a pathway that leads to the supply of certified product.

Improver schemes of the sort that have developed for fisheries do not seem to be a feature of land based farming. This may be due to the fact that farms are commonly held in private ownership and collaboration between farmers may not be needed in the same way that it is for fishers accessing a public resource. Localised assistance may be available, depending on circumstances, via cooperatives, government extension programs or via private providers. Accessing information about the costs of certification proved difficult as it seemed highly variable but, at least, some of the schemes maintain in-country certifiers which helps keep costs down.

Availability of suitable volumes will be an issue, at least in the short term. Whether the aquafeed industry has sufficient leverage to drive producers of bulk ingredients towards certification is an open question. It may be that some form of collaboration with other certification schemes such as the Sustainable Beef Roundtable will be a useful strategy to create a larger demand.

Recommendations

- ASC should use the plant ingredients as a mechanism for exploring how that feed standard should operate before committing to terrestrial proteins as well
- ASC should start a dialogue with other potential users of certified feed ingredients as a mechanism for increasing the demand
- ASC needs to establish its own benchmarks for evaluating the suitability of any scheme that may be able to supply ingredients.
- ASC to communicate to the marketplace the opportunities that are emerging for the supply of certified ingredients

What is the rationale for the Feed Standard establishing requirements for this area – for raw materials and processing plants, what are the environmental and social issues that need to be addressed?

The processing of terrestrial animals provides a source of proteins for aquafeeds, especially waste materials which may not have a human food related market. Ingredients include meals made from meat, blood and bone, hydrolysed feather meal, and oils and fats, amongst others. Regulations vary from country to country and in the EU, until recently, only products that were suitable for human consumption could be used. These included:

- dicalcium phosphate and tricalcium phosphate of animal origin (with restrictions);
- non-ruminant blood meal and blood products (with restrictions);
- milk, milk-based products and colostrums (without restriction);
- eggs and egg products (without restriction);

- hydrolysed protein from ruminant hides/skin (without restriction);
- hydrolysed protein from non-ruminants (without restriction);
- gelatine from non-ruminants (without restriction);
- animal fats (without restriction); and
- collagen from non-ruminants (without restriction).

Animal welfare issues are particularly important in both the husbandry and slaughter phases of animal production (Vapnek and Chapman 2010). This is not just driven by consumer concerns but also food quality and also religious needs. Distress caused to animals is not only important from an ethical perspective but can also affect growth, disease outbreaks (and the costs of controlling them) and the quality of meat and other products, thus having an economic dimension as well.

Globally, a considerable amount of thought and action has been devoted to determining some agreement on what defines suitable animal welfare expectations. In the mid 1960's the UK put forward what are now known as the Five Freedoms, which have proved to be a durable base for further discussion more widely.

Principles – The Five Freedoms

- 1. freedom from hunger and thirst – by ready access to fresh water and a diet designed to maintain full health and vigour;*
- 2. freedom from discomfort – by the provision of an appropriate environment including shelter and a comfortable resting area;*
- 3. freedom from pain, injury or disease – by prevention or through rapid diagnosis and treatment;*
- 4. freedom to express normal behaviour – by the provision of sufficient space, proper facilities and company of the animal's own kind; and*
- 5. freedom from fear and distress – by the assurance of conditions that avoid mental suffering.*

Evaluating the current status of any animal facility requires some more concrete statements of performance and this has taken a number of years. The EU funded Welfare Quality Project has put forward the following criteria:

Criteria – Welfare Quality Project (www.welfarequality.net/)

- 1. Animals should not suffer from prolonged hunger, i.e. they should have a sufficient and appropriate diet.*
- 2. Animals should not suffer from prolonged thirst, i.e. they should have a sufficient and accessible water supply.*
- 3. Animals should have comfort around resting.*
- 4. Animals should have thermal comfort, i.e. they should neither be too hot nor too cold.*
- 5. Animals should have enough space to be able to move around freely.*
- 6. Animals should be free from physical injuries.*
- 7. Animals should be free from disease, i.e. farmers should maintain high standards of hygiene and care.*

8. *Animals should not suffer pain induced by inappropriate management, handling, slaughter or surgical procedures (e.g. castration, dehorning).*
9. *Animals should be able to express normal, non-harmful social behaviours (e.g. grooming).*
10. *Animals should be able to express other normal behaviours, i.e. they should be able to express species-specific natural behaviours such as foraging.*
11. *Animals should be handled well in all situations, i.e. handlers should promote good human-animal relationships.*
12. *Negative emotions such as fear, distress, frustration or apathy should be avoided, whereas positive emotions such as security or contentment should be promoted.*

In the past the EU has discussed certification standards for animal welfare in the same way it has put in place standards for organic production, i.e. to set some baseline to deal with the proliferation of approaches, some of which create very low benchmarks. However, this remains to be achieved.

What existing mechanisms are in place to make judgements about the suitability of an ingredient? How well do these meet the aspirations and requirements of the ASC?

Mechanisms for defining expectations about the treatment of animals can be found at all levels of organisation ranging from the international, regional, national and down to local levels. At the international level the World Organisation for Animal Health (OIE - <http://www.oie.int/en/>), which was established in 1924, developed the Terrestrial Animal Health Code in 2013 and there is a companion code for aquatic animals under development.

The OIE is science based and very much focused on the veterinary needs of animals but the links between animal disease, animal welfare and food quality mean that it has a wide remit. In amongst a variety of requirements are those relating to the environment in which animals are kept, slaughter standards and standards relating to transport.

There is considerable governmental interest in this issue arising from concerns expressed by individuals (as consumers or just concerned citizens) and the potential for interactions with the world trading system.

The ASC Standards require responsible production and animal welfare provisions for the farmed products and thus these should apply to the feed ingredients. The requirements of the standards vary and may include input requirements such as stocking density or outcome requirements such as incident rates for diseases or mortality rates. There are no requirements in regards to transport. The OIE Code has requirements for the following:

Section 7.	WELFARE OF FARMED FISH
Chapter 7.1.	Introduction to recommendations for the welfare of farmed fish
Chapter 7.2.	Welfare of farmed fish during transport
Chapter 7.3.	Welfare aspects of stunning and killing of farmed

Chapter 7.4. fish for human consumption
Killing of farmed fish for disease control purposes

Standards covering animal welfare have been in place for many years and thus precede (but probably informed) the international Codes.

Those currently in existence fall into a number of categories, such as:

- Organic production – organic standards can be found in any parts of the world and provide requirements for rangeland management, chemical use and welfare, amongst other requirements in both the farming and processing stages.
- Environmental – few of these exist with the best known being owned by Global GAP. There is also the current attempt to create a sustainable beef certification standard via the Roundtable on Sustainable Beef. Unlike the ASC Standards this draft Standard contains criteria pertaining to transport and slaughter.
- Animal welfare specific – these are abundant and cover a wide variety of products. There are well documented and major issues associated with the diversity of claims in Europe alone (Allweldt et al 2009). One current example in Australia being the order of magnitude difference between the requirements of established schemes versus one retailer on the number of chickens per hectare that can be stocked to meet free range claims.

Allweldt et al 2009 describe 3 categories of schemes that address animal welfare, as follows:

- Schemes that focus only on animal welfare (e.g. *Freedom Foods; Neuland; Tierschutz geprüft (animal welfare approved), Travelife Animal Attractions Guidelines*);
- Schemes that focus on various aspects including animal welfare (e.g. *organic labelling; Label Rouge, Shechita*)
- Schemes that focus on aspects other than animal welfare but have positive side-effects on animal welfare (e.g. certain *PDO/PGI schemes*)

Participation in certification programs is highly variable with strong levels of support for systems covering eggs and milk but much weaker support for other areas. In 2003 organic livestock accounted for some 2.3% of livestock units in the EU25 but this has probably grown in line with organic and similar products over the past ten years. Nevertheless the availability of processing wastes that met the requirements of the ASC would need to be examined closely but would vary from country to country and from one ingredient to another



Table 5: Freedom Food production (*000 head) and market penetration

	2004	2005	2006	2007	2007 market penetration
Beef	10	9	12	12	0.7%
Chickens	10,068	14,622	27,641	40,508	5.2%
Dairy Cattle	34	26	27	18	0.9%
Ducks	0	1,505	2,070	3,983	21.5%
Laying Hens	16,438	17,946	18,418	19,372	49.0%
Pigs	1,526	1,548	1,389	1,373	28.2%
Sheep	92	82	76	78	0.5%
Turkey	146	232	247	332	1.7%
Salmon	1,163	6,604	11,922	91,000	n/a

Source: Freedom Food Ltd.

It is possible that the OIE code will create further demand for certified material in the future. GlobalGAP has a number of standards relating to the production of animals. Firstly there are those that set out requirements for farm raising which, like the plant standards, cover a variety of environmental and social issues. There are standards for cattle and sheep, pigs and chickens cover:

Cattle and sheep	Poultry	Pigs
Identification and Traceability	Stock Sourcing	Stock Sourcing
Breeding and Young Stock	Breeding (Parent) Flock	Pig Identification
Feed, Forage	Hatchery	Young Stock
Housing and Facilities	Feed and Water	Feed and Water
Hygiene and Handling	Housed Poultry	Housing and Facilities
	Outdoor Poultry	Outdoor Pigs
	Mechanical Equipment	Mechanical Equipment
	Poultry Health	Pig Health
	Hygiene and Pest Control	Hygiene and Pest Control
	Handling	Handling
	Residue Monitoring	Loading to dispatch for slaughter
	Emergency Procedures	Casualty Pigs and Fallen Stock and Findings
	Inspection	
	Workers	
	Humane Slaughter of Casualty Poultry	
	Dispatch and Transportation	



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Secondly, there are specific animal welfare standards available for pigs and broiler chickens. As with the farm standards detailed above the animal welfare standards differ slightly from species to species.

What is the cost of meeting the available standards to the certificate holder and other entities in the supply chain? How can these costs be managed to acceptable levels?

Due to the enormous variety of potential candidate schemes an evaluation of costs was not attempted and no easy access reviews were found online.

What mechanisms are in place to handle potential suppliers who are currently unable to meet the standards? Is there an assistance mechanism, improver program or similar?

No specific references could be found to improver style schemes. As with the production of organic plants, farmers who wish to transition to organic production may have access to advice from either government extension services or local, self-help farmer groups. For programs like Freedom Foods and similar, animal welfare focused programs, there do not appear to be any formal programs available and its likely that the same approaches used for organic production would also be used.

What options are available if there are no mechanisms available or those that are do not deliver a result which meets ASC expectations?

This paper was commenced after the development of the concept of having the aquafeed Standard be a standard for scheme owners. Under this model it will be the responsibility of the Standard owner to make the required changes. This will be discussed in a separate forum.



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References

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