

MINUTES OF THE SEVENTY FIRST MEETING OF ACAF HELD ON 27 OCTOBER 2016

Present:

Chairman Dr Ian Brown

Members Miss Michelle Beer
Mr Geoff Brown
Ms Ann Davison
Professor Stephen Forsythe
Professor Ian Givens
Mrs Chris McAlinden
Dr David Peers
Dr Tim Riley
Professor Robert Smith

Secretariat Mr Keith Millar (Secretary) – Food Standards Agency
Miss Mandy Jumnoodoo – Food Standards Agency
Dr Mark Bond – Food Standards Agency
Mr Freddie Lachhman – Food Standards Agency

Assessors Mr Alan McCartney – Department of Agriculture, Environment and Rural Affairs
Ms Claire Moni – Food Standards Scotland
Mrs Karen Pratt – Food Standards Agency
Mr Stephen Wyllie - Defra

Officials Mr Giles Davis – Veterinary Medicines Directorate

Ms Annie Green - Veterinary Medicines Directorate

Mr Scott Reaney – Animal and Plant Health Agency

Alison Hall – Port of Tilbury

Speakers: Ms Harriet Parke – Eunomia

Dr Elaine Fitches – Durham University

1. The Chairman welcomed delegates to the 71st meeting of ACAF and reminded them that there would be an opportunity to ask questions at the end of the meeting.
2. The Chairman welcomed Miss Michelle Beer to her first meeting. He invited Miss Beer to provide a short background on her career history to date.
3. Miss Beer said that she was a Senior Trading Standards Officer for Cornwall Council's Quality Standards and Animal Health Team. She has a background in animal health and feed law enforcement. Miss Beer also said that she had studied zoology at Newcastle upon Tyne and had gained trading standards qualifications as well as studying law. She looked forward to actively participating in the work of the Committee.
4. Apologies for absence were received from Ms Angela Booth, Professor Wendy Harwood, Mr Edwin Snow, Mr Peter Francis and Mr John Hirst (Welsh Assessor).

Agenda Item 1 Declaration of Members' interests

5. The ACAF Chairman said that he had changed responsibilities at Oxford University and was now a Clinical Research Fellow. Miss Beer said that she was employed by Cornwall Council as well as carrying out lecturing work for two companies. Ms McAlinden advised that she was working for a company on intelligent food packaging.

Agenda Item 2 – Draft Minutes of the Seventieth Meeting (MIN/16/02)

6. The minutes were adopted, subject to the following changes:
 - Pg 6 – Para 19 – the Defra Assessor to provide text to correct the statement made by Professor Glencross to ensure accuracy;
 - Pg 8 – Para 33 – typo “in or at”.

Action: Defra Assessor/ ACAF Secretariat

- additionally, in respect of Page 12 – the ACAF Secretary clarified that the statement made in the Q&A section attributed to Mr Parker, set out Mr Parker’s views as he could not contribute during the meeting.

Agenda Item 3 –Refuse Derived Fuels

7. Mrs Karen Pratt (FSA Assessor) introduced paper ACAF/16/12. She stated that at the Committee’s February 2016 meeting, representatives from the Grain and Feed Trade Association (GAFTA) had raised the issue of storage of refuse derived fuels (RDF) at ports. GAFTA was concerned about the rapid growth of the RDF industry and the potential risks to food and feed safety. The ACAF Secretariat agreed to undertake some relevant information gathering. Mrs Pratt reported that the following had been made aware of the main issues:
 - other Member States, through a presentation made at a Standing Committee on Plants, Animals, Food and Feed (Animal Nutrition section) meeting in Brussels;
 - feed assurance bodies; and
 - the National Animal Feed Ports Panel.
8. Mrs Pratt said that further information about existing controls had been sought from the Environment Agency (EA), which in turn had advised of the formation of the RDF Industry Group. The ACAF Secretariat had subsequently met the Group’s chairman and invited the Group to provide a presentation. Mrs Pratt said that visits to two ports which had past experience of handling RDF had taken place and that further visits were scheduled to two other ports and an RDF processing facility, with a proposal that the Committee should have a full discussion at its February 2017 meeting. She also advised that both Defra¹ and DAERA² had provided information in response to the ACAF Secretariat’s enquiries.
9. Mrs Pratt added that RDF is non-recyclable domestic waste that is transported in bales’ typically by curtain sided lorries or cargo ships. One of the issues of concern is that the bales’ containing the RDF can burst or can be ripped open by pests. She outlined that ACAF paper 16/12 provided details on arrangements for relevant controls, pointing out that port authorities are becoming more aware of the issues. Also, the RDF Industry Group was developing a Code of Practice; Mrs Pratt added that some ports also had their own versions. She asked the Committee to note the contents of the paper and asked if there were other issues or questions that needed to be addressed.

¹ Department of Environment, Food and Rural Affairs

² Department of Agriculture, Environment and Rural Affairs

10. Ms Harriet Parke was invited to provide a brief overview of the work of the RDF Industry Group. She said that Eunomia is a consultancy firm that helped to establish the RDF Industry Group in 2015. The Industry Group represents waste management companies, off-takers of RDF and the Association of British Ports is also a member. Ms Parke advised that the first major work undertaken by the Group was the RDF Export Report, which provided an analysis of the legal, economic and environmental rationales for RDF export. Key aims of the Group are to explore and address issues surrounding RDF export from the UK, develop evidence-based information on the legal, environmental and economic issues related to RDF export, and to communicate its work to third parties, including the government and other key stakeholders.
11. Ms Parke explained that RDF is produced from waste that has undergone some processing. The EA is trialling a definition of RDF – ‘Refuse derived fuel (RDF) consists of residual waste that is subject to a contract with an end-user for use as a fuel in an energy production from a waste facility. The contract must include the end-user’s technical specifications relating as a minimum to the calorific value, the moisture content, the form and quantity of the RDF’.
12. The waste needs to undergo some form of pre-treatment to turn it into RDF and then it can only be exported for energy recovery in an R1 compliant facility and not for disposal. This is to ensure waste is not sent to other countries for disposal and they do not incur the environmental impacts of disposing of our waste. Ms Parke said that not all RDF is exported by ship but also by road and rail. Drivers for development of the RDF market include financial – it is cheaper to export than to process in the UK, with landfill being more expensive. Another key driver is that mainland Europe has more RDF processing capacity than the UK, although capacity in the latter is increasing. Ms Parke said that RDF export takes place under a legal framework, which includes an export notice system. All receiving plants must be classed R1³. A financial bond is required and the RDF is only released following appropriate waste treatment. There is an export notice system for RDF which lasts for up to 3 years although a longer contract of between 5 and 7 years can be agreed.
13. In terms of capacity, currently 12 million tonnes of residual waste material can be processed in treatment facilities in the UK, and additionally approximately 3 million tonnes of RDF is exported. There are a number of facilities being built, or are scheduled to be built, and therefore the capacity for processing is increasing in the UK. Ms Parke explained that the export market for RDF started around 2011 and has increased significantly since.

³ Recovery is defined in Annex II of the Waste Framework Directive (Directive 2008/98/EC). R1 is “Use principally as a fuel or other means to generate energy” For mixed municipal waste there is a formula related to the efficiency of the plant with minimum thresholds that must be reached to constitute recovery rather than disposal. This also applies to RDF from mixed municipal waste.

14. Ms Parke said that the Industry Group was seeking to develop a Code of Practice to ensure good practice at each step of the RDF supply chain. The Code will set out the legislative requirements and good practice.

Discussion

15. Following a question from the ACAF Chairman, Ms Parke explained that solid recovered fuel (SRF) – is a higher grade fuel used in cement kilns which needs to have a higher calorific value and undergoes more pre-treatment.
16. The ACAF Chairman noted that the aim was to reduce waste and that the UK exports more RDF than it is able to process. Ms Parke explained that the UK RDF processing market is under development at present but is catching up with countries in continental Europe. The benefit of exporting was that the UK did not over commit itself, as in Europe there were many facilities that are under-utilised.
17. Ms Parke confirmed that the Industry Group was aware of the concerns raised by ACAF and at a recent meeting of the Industry Group, the chairman of the group reported back on discussions held with the ACAF Secretariat. She explained that the Group felt the Code of Practice would ensure good standards are in place. As it was a rapidly developing area some opportunistic operators may undertake illegal activities. The Group wanted good standards and checks to minimise negative impacts at ports.
18. A Member of the Committee said that from a Trading Standards Officer (TSO) standpoint, enforcement would be against the FeBO⁴. TSOs cannot deal with RDF operators. Clarity from EA on duty of care requirements should be sought. A FeBO has right of appeal where the responsibilities lie with another party– that would be the case with RDF. The ACAF position was that Industry Group guidance is the best way forward with a need for legal clarity from the EA. The Member suggested that guidance from the Committee would be better in resolving responsibility issues rather than the enforcement route.
19. Ms Parke explained following a question from the ACAF Chairman that the EA can enforce against operators for any issues including burst bales. Alison Hall (Port of Tilbury) added that the level of responsibility rested with the owner of the commodity who holds an Environment Agency transfrontier-shipment-of-waste, notice. The port operator would also have a responsibility. If there were concerns about the quality of bales, wrapping etc., the port operator would talk to the customer and would address any issues quickly. Any containment issues would also be addressed without delay.

⁴ Feed Business Operator

20. Alison Hall (Port of Tilbury) noted there is some degree of zoning at the port; however, some ports have zoning close to animal feed handling sites. It was noted that there was no generic code of practice that all ports handling RDF worked to, but ports storing RDF are required to have applied for an EA permit. Ms Parke noted that the RDF Industry Code of Practice would be initially for Industry Group members to follow. Ultimately, the Code could be developed further. The Code would not interfere with the ports codes of practice. The industry is now working closely with the EA and the FSA in the development of the Code of Practice.
21. It was noted that increased investment by the ports to properly handle RDF was needed and also a clear description of the responsibilities of all involved in the RDF chain was required. Ms Parke said that under regulations for waste shipments, the bond is held by the EA and when the receiving operator has treated the waste, then the bond is released. The NI Assessor stated that the Northern Ireland Environment Agency (NIEA) comes under DAERA, which will ensure joined up responsibilities. He added that the NIEA has a position statement on the handling of RDF.
22. The ACAF Secretary thanked Mrs Pratt and Ms Parke for their clear presentations. He noted that the Port of Tilbury has the largest exporter of RDF from the UK. He agreed that a comprehensive code of practice and guidance on responsibility with input from enforcement authorities would be extremely useful. Ultimately, the Code could be endorsed by the Committee. The ACAF Secretary noted that not only is RDF being stored at ports but also on farms. He suggested that this area should also be included in the Committee's review to minimise the risk of fly-tipping.
23. The Scottish Assessor noted that the ACAF Secretariat would be visiting two Scottish ports and that SEPA⁵ does have a good code of practice. She asked if there were any Scottish Members of the Industry Group and whether the Code of Practice being developed will be available to non-members. Ms Parke said there were 29 members of Group and the port member was the Association of British Ports. The Code of Practice would be available to members for auditing.

Agenda Item 4: Feed additives

24. Geoff Brown (ACAF Member) introduced paper 16/13. He said that the Committee had been looking at the issue of feed additives for approximately 2 years. The issue originally was about on-farm compliance but now was changing direction slightly. Mr Brown reported that the issue covered a number of the Committee's work areas. Any feed additive used by industry has to have undergone a vigorous safety assessment by EFSA and then be authorised by a qualified majority of EU Member States in

⁵ Scottish Environment Protection Agency

Standing Committee chaired by the European Commission. Mr Brown said that the paper largely covers nutritional additives but applies to all additives in principle. He explained the legislative background.

25. A maximum permitted level (MPL) is set with regard to safety risk to animals, consumers, the environment or product users. MPLs apply to the complete diet and include the provisions from all feeds, supplements and via water. Feed additive labelling requires that if a product has a MPL then this has to be declared on the relevant feed label. Sources of nutritional additives include background levels in grasses, forages, etc. but also in mineral blocks, licks or other supplements and any additives added to water and veterinary products. Mr Brown noted that currently the label information for trace elements includes a declaration of the compound rather than the element itself. This requirement does not make it easy for farmers or advisers to calculate the amount of individual elements fed to animals. However, it is expected that this requirement will be amended so as to revert back to declaring the element on the label.
26. For ruminants, problems are likely to arise from the use of multiple supplementary feeds. Problems for monogastrics are most likely through water supplementation and feed supplements. Whilst for horses and pets, potential problems arise from supplements and treats. Mr Brown then provided a description of boluses explaining that some may be medicinal whilst others are complementary feeds (slow release dietetic feed) which can be effective for up to six months. Boluses commonly provide copper, cobalt or selenium that are given to cattle and sheep. Medicinal licensed products are out of scope of the Feed Additive Regulation. He then provided an explanation between the differences between licensed products and nutritional products. Mr Brown said that nutritional drenches are freely available on the internet, sometimes with no product specifications. Some of these products exceed the MPLs on their own before any other feed is given. Some drenches are anthelmintic⁶ which are veterinary medicines that may contain trace elements such as selenium and cobalt. The nutrients are not part of the licensed product however, so the elements are in the scope of the MPL controls and can exceed MPLs on their own.
27. Mr Brown said that drenches sold on the internet are not always described as dietetic feed and some appear to contain unauthorised additives. It is sometimes implied that these additives are 'slow release'. Instructions recommend to feed with other vitamin/mineral products; however, there are no precautions on usage with other supplements and the labelling information is not compliant with the legislation. In terms of nutritional supplements, Mr Brown highlighted numerous concerns such as products being illegally labelled and consequently impossible to assess for nutritional additive levels; other products are sold on the internet with little or no statutory information. There are also similar issues with water

⁶ used to destroy parasitic worms.

supplementation. Mr Brown said that the APHA provides chemical food safety reports and disease reports and went onto highlight reported incidents. He then used the example of copper, noting that a significant proportion of the UK dairy herd is at risk of chronic copper toxicity. In doing so, Mr Brown provided details on a number of studies to demonstrate this potential issue. He also added that in July 2011 the Committee had produced a guidance note on copper supplementation in feed.

28. Mr Brown said that copper was not the only trace element that was associated with over supplementation; other examples include zinc, manganese and iron. He then provided examples where there was a relative risk of exceeding MPLs. These ranged from compound feed at low risk to internet sales considered medium to high risk. Mr Brown discussed the impacts of over-supply, explaining that for animal health there was a low to medium risk. He considered that for consumer health and user safety the risk was low. However, environmental risks were medium to high due to the impact of trace element levels on farmland and in aquaculture.

29. Mr Brown said that the industry had held two stakeholder meetings involving the FSA. Additionally articles in the 'Feed Compounder' and 'Over the counter' had been published. Papers had been presented at the BAFSAM 2015 Conference and at the Society of Feed Technologists and the Irish Grain & Feed Trade Association 2016 conferences. Articles have also been published in the Agricultural Industries Confederation's Feed Advisor Register, and further articles are in development for farmer magazines.

30. Mr Brown suggested awareness of the issue could be made through numerous channels including: the Feed Advisors Register, training for merchants, suitably qualified persons (SQPs), saddlery and pet shops, enforcement officers, quality assurance auditors, vets; reference in the FSA 'feed hygiene requirements for farmers mixing additives in feeds & mixing compound feed with additives'; FEFAC & FEDIAF Codes of Good Labelling Practice; the NFU Code of Practice for on-farm mixers; the ACAF Review of on-farm feeding practices; and through ACAF guidance documents for all groups.

Discussion

31. An official from the Veterinary Medicines Directorate (VMD) stated that over-supplementation was not an issue that VMD had experienced. The official said there had only been one case of copper toxicosis reported in Pharmacovigilance reports.

32. A Member of the Committee stated that the Agricultural and Horticultural Development Board will be sending out circulars on deficiency in copper and manganese, especially during pregnancy. Farmers will be buying products to compensate for such deficiencies, but may not be properly advised. The Member thought that guidance on dosing would assist farmers; however, the Member thought most of the deaths of animals would be through deficiency rather than through over-supplementation.
33. Another Member of the Committee thought that over-supplementation of horses could be an issue. The Member thought that the issue was related to marketing and targeting effects on specific parts of the body (e.g. hoof improvement) or a specific condition without acknowledging the MPLs. There are multiple players in the chain, ranging from SQP, vets, advisors, etc. This was a complicated area and the risks to humans were unknown. The publicity on copper will wane over time and the Member believed that it was up to animal owners to make sure they are aware of what is happening and the implications on animal health.
34. The ACAF Chairman thought it was difficult to calculate total amounts given to animals. Another Member of the Committee noted that it would be difficult for the manufacturer to identify the exact quantitative constituents of the animal's diet.
35. Mr Brown said that different livestock genotypes will have different dietary characteristics. It is up to the supply industry to help the farmer understand the issue. Another Member of the Committee pointed out that there are various supplies of copper with different bio-availabilities. Another Member asked whether monitoring of foodstuffs for the consumer was robust enough and would there be appropriate action. The ACAF Chairman considered that there was unlikely to be a public health issue.
36. Dr Bond reported that BAFSAM and the FSA had met with other stakeholders on this subject and concluded that the internet sales sector is the hardest to reach. At a recent FSA meeting with industry, during discussions on copper MPLs, the ACAF guidance paper on copper was positively commended as making a tangible improvement of practice. Dr Bond mentioned possible avenues for dissemination of information through the Agency's feed delivery team.
37. A Member of the Committee asked about the enforcement of additives. Mr Brown said that where products are marketed without proper authorisation, the industry would like to discuss these issues with appropriate enforcement bodies. Dr Bond confirmed that the Agency's feed delivery team would act on information received with Trading Standards on any areas of non-compliance. The Defra Assessor said that the Animal and Plant Health Agency (APHA) undertakes a diagnostic approach and

provides advice to farmers when required. The types of issues investigated by the APHA include lead poisoning (from lead paint and batteries), botulism from poultry litter and occasionally copper, or veterinary medicines given to the wrong species. APHA works with the FSA on potential food chain issues where restrictions may be imposed, such as animals being temporarily withheld from the food chain, or offal (where residues often concentrate) being withheld from the food chain at slaughter.

38. A Member of the Committee noted that it was difficult to identify if an animal had been given a bolus which may have an impact on supplementation when livestock are sold or moved on. The Member was uncertain if farmers were aware that damaged boluses may not be viable for slow-release use and over-supplementation of the animal may subsequently occur. The Member agreed that the Committee should look at a holistic approach.

39. The ACAF Secretary summarised the key points as: problems with internet sales; a plethora of legislation; multiple supply chains; and a need to balance risk issues. Additionally, the potential risk of additive over-supplementation to human health was unknown. On the declaration of the trace element as opposed to that of the compound, the ACAF Secretary reported positive progress with negotiations in Brussels. He said that boluses and drenches had always been a contentious issue, with bans in some EU Member States. It was agreed that the Secretariat would write to Members with a request that they confirm and prioritise work areas on this topic for the Committee to pursue.

Action: ACAF Secretariat

Agenda Item 5 - Insect protein as a potential animal feed

40. Dr Elaine Fitches introduced paper 16/14. She said that insects are highly efficient in the rapid conversion of 'waste' into biomass. They are a natural component of the diets of carnivorous fish and free range poultry and are high in protein. There are thousands of types of insects but this research looked at black soldier flies and house flies. The presentation considered work on house flies, as a domestic species; as black soldier flies need higher temperatures to grow. Dr Fitches mentioned that beetles are also produced on a large scale but markets are limited to pet and bird food as current legislation does not permit the feeding of insects to commercially reared livestock.

41. Dr Fitches said substrates such as manures, industrial vegetable waste, and domestic waste, (the residual is used as fertiliser), can be used to grow the insects. It is possible to extract (less digestible) chitin, protein and fat from insect larvae. Dr Fitches noted that insects can be used to produce high value oils, animal feed and other novel products such as chitosan which has a number of high value applications.

42. Dr Fitches explained that she had worked on a project with AB Agri which used housefly larvae as a protein source for monogastric diets. She also worked on an EU project which had an international dimension. The focus was to use insects for monogastric or fish feed and to examine the suitability of substrates. Dr Fitches provided an overview on the work carried out in China, Africa and the UK including safety, nutritional value and quality; carrying out animal trials and work to understand the current legislation, regulation and consumer perceptions.
43. Dr Fitches then described the quality (nutritional) and biological safety assessments carried out on both projects. Results showed that fly larvae had an amino acid profile comparable to fish meal and a fatty acid profile comparable to palm oil. The project researchers developed an oven drying method (based on Method 7 of the Animal By-products Regulations). In addition it was found that hexane extraction is a suitable scalable method to produce protein enriched material. Extensive screening of larvae reared on chicken manure (possibly representing a worst case scenario for safety) for more than 500 chemical contaminants found no issues with the exception of the heavy metal cadmium where levels were higher than the lowest EU limit for cadmium, in animal feed in three out of nine samples. This work also contributed to an EFSA expert opinion in 2015.
44. Dr Fitches then provided details of research on aquaculture feeding trials that took place in Ghana on Nile tilapia fingerlings fed on black soldier fly meal. She said that results indicated that all dietary treatments performed well and similarly to the control fishmeal diet. She highlighted that fish oil free diets impacted on the fish composition which could show a reduction in omega 3 fatty acids. Dr Fitches described work carried out in the UK on salmon freshwater parr fed housefly meal and defatted meal. The results indicated that housefly meal and defatted meal are suitable alternatives to fishmeal and can replace up to 50% of fishmeal in a practical diet for the parr. These alternatives were a good source of highly digestible protein although lipid digestibility was reduced when up to 75% or more fishmeal was replaced by insect meal.
45. Dr Fitches said that a pig feeding trial took place in Belgium and all treatments performed well with significantly more positive bacteria detected in the ileum of piglets fed on insect containing diets as compared to the control group. Also no taints resulting from the animals being fed insect meal were detected in the pig meat. Poultry trials took place and all treatments performed similarly well with significantly less pathogenic bacteria detectable in the gizzard of chickens fed insect supplemented diets. Also no taints resulting from the animals being fed the insect meal were detected in chicken meat. Dr Fitches confirmed that as part of the work carried out with AB Agri, a broiler chick digestibility study was carried out. This was a key study that showed the value of insect meal compared to chickens fed on fishmeal diets, where the birds performed as well and digestibility and apparent metabolisable energy (AME) and AMEn) was greater for insect meal diet than fishmeal fed.

46. Two consumer perception surveys were also carried out; the first considered perceptions on buying meat or fish that had been fed on insects. The results indicated a high level of positivity with the “yuck” factor not being evident and a general acceptability to feed insects to animals; the second survey carried was undertaken to gain a better understanding of current consumer perceptions about how acceptable people thought it was to feed insects as compared to other existing and novel sources of animal feed. The survey results indicated that people are generally accepting of the idea of feeding animals and fish on insects, with insect meal scoring better than GM crops.
47. In summary Dr Fitches noted that it was possible to rear larvae on manures; the nutritional quality of larvae was excellent and was comparable to fishmeal; extensive safety screening suggests that feeding animals with insect meal held minimal risks and that any potential risks can be mitigated through the screening of insect rearing substrates and/or processing of insect meals; feeding trials suggest that insect meal is a suitable replacement for fishmeal or soymeal in fish, poultry and pig diets; and consumer perception and media monitoring suggests a high level of support for use of insects in animal feed but also a desire for more information.
48. Commercially, at the 2013 ACAF meeting Dr Fitches made reference to the Insect Centre being set up in the Netherlands. The Centre involved 15 companies and government agencies who are interested in promoting the application of insects and insect larvae as a protein rich source of feed, food and the pharmaceutical industry. Dr Fitches explained that in 2015, the International Platform of Insects for Food and Feed (IPIFF) was formally established. IPIFF members are mainly European insect producing companies but also include other firms in the insect value chain (e.g. equipment and distribution) who aim to promote insects as a source of animal proteins for food and feed. IPIFF is developing shared standards and best practices and was solely focused on using vegetable waste as a rearing substrate.
49. Dr Fitches noted that insect derived products for animal feed are on the market; for example, a Canadian company has received regulatory authority to use whole dried black soldier fly larvae as a feed ingredient for poultry broilers. Also, insect oil is forming the basis of a new feed ingredient for weaner pigs. However, insect protein cannot be used in animal feed.
50. The Alternative Protein Consortium (APC) has been set up and in collaboration with Fera Science Ltd aims to establish a global platform for large scale insect production, initially in Indonesia. The APC is focused on working in the tropics due to the ideal year round climate which has an abundance of readily available substrates and requires less energy for insect rearing, as compared to more temperate climates. Dr Fitches explained that APC plans to build insect bioreactors that will use waste

from palm oil production to rear black soldier flies on a commercial scale. As well as animal feed, the APC are also interested in other insect derived products such as chitin and its applications – thread for wounds; refining wine; and the potential for antimicrobial discovery. FERA Science Ltd. has, and will continue to conduct analysis of the safety of rearing substrates, nutritional quality and safety of insects, and the final fish or meat products.

Discussion

51. Following a question from the ACAF Chairman, Dr Fitches pointed out that the research is focussed on the larvae; not the adult insect, as the low indigestible chitin content increases with age. The ACAF Chairman noted that there are a number of issues; microbiological, chemical and consumer. A Member of the Committee noted that the processing method (suitable for drying) did not fully mitigate microbiological hazards. Dr Fitches said that the enterobacterial count in chicken manure was measured and after the larvae were processed the levels were found to be acceptable. However, the Member did not think that processing would mitigate all microbiological risks as enterobacteriaceae were indicators of processing hygiene and that bacterial toxins may be heat stable. The ACAF Secretary said that in order to help answer and clarify the points made by the Member, the ACAF Secretariat would liaise with AB Agri.

Action: ACAF Secretariat

52. The ACAF chairman noted that larvae eat foods that may kill or seriously harm other animals/humans and asked if the larvae expelled contaminants or tolerate them. Dr Fitches said that insects have developed by eating diverse substrates – a lot unknown, but there will be a degree of evolutionary adaptation to substrate toxins and also processing by the insects themselves.

53. Following a question from a Member of the Committee, Dr Fitches said it had been too expensive to screen substrates with the same tests on final insect protein to determine the degree of carry-through and/or detoxification within the EU project budget. Another Member of the Committee commented that it was unusual for a young organism to be so rich in fatty acids. Dr Fitches said that the fat profile could be influenced by what was fed to the insects. Another Member of the Committee was interested to hear that the immune system in pigs improved. The Member asked if a low inclusion rate could be used in ruminants. Dr Fitches said that if insects were not a natural part of diet it did not make sense to use insect protein. The Member stated that it may be possible to use low levels of insect meal as an immune elicitor as an alternative to isolating specific compounds which may be much more expensive to produce. The ACAF Chairman asked how the rumen would be affected – the Member noted there could be a modulating effect that may or may not be beneficial. However, investigating the effects of including low levels of insect material

may help to identify if the idea of finding an immune modulator was worth following up.

54. Another Member, noting that BSE emerged with little notice, asked whether there would be any indication of new emerging diseases. The Member also asked whether pigs were naturally major insect eaters. Dr Fitches said free range pigs would certainly eat some insects, but levels would be low (and were incorporated into the pig diets at low levels). On emerging disease risks she was unable to comment. However, monitoring of the substrate and further research will help, as safety was one of the important factors considered.
55. One Member of the Committee asked about the potential use in the UK of vegetable waste, noting that most of this goes to ruminants and was inherently low in nitrogen. Dr Fitches said that industry was driven by substrate supply, and that many substrates could not be used for legislative reasons. She envisaged that the UK would be more likely to import rather than produce significant quantities of insect protein.
56. An official from the Animal and Plant Health Agency said that under the animal by-products Regulations there are six approved methods for processing animal by-products (ABPs). However, if the operator does not intend to use one of the approved methods at their facility, they can propose their own processing conditions. This is known as 'method 7' processing. The operator defines drying methods under ABP regulation and must assess the risk on raw materials. The method must demonstrate that pathogens are eliminated, which can be determined through marker organisms.
57. The Defra Assessor reported that insect protein was discussed at a recent Chief Veterinary Officers (CVO) meeting in Brussels. The Defra Assessor asked, if processing was undertaken in EU countries, whether there were risks from the introduction of invasive alien species. He also commented on the issue of probiotic versus antimicrobial effect and the link to antibiotic resistance. Dr Fitches said that houseflies were used as they occur naturally in Europe, whereas black soldier flies are only found in southern regions of Europe with higher temperatures. She noted that research to investigate possible probiotic and antimicrobial effects was at an early stage and it was therefore impossible to say anything more than what the results suggested so far and further R & D is required. Dr Bond added that EFSA had published a risk profile in the last year on insect protein. This had concluded that, based on the quality and safety of substrates used, there was no greater risk in the use of insect meal than any other protein source. In addition, as IPIFF had stated, the European Commission would only consider the propagation of insects on vegetation/plant-based substrates rather than manure/litter or catering-waste substrates.

58. The ACAF Chairman asked whether there were any identifiable substrates that are not useable – due to insect inability for growth or through disease potential. Dr Fitches said that insects grow on a range of substrates and particular species may be limited to certain substrates, whereas others are more cosmopolitan (e.g. mealworms can grow on vegetable waste and wheat bran, whereas black soldier flies can grow on a much wider range of substrates). There was variability in growth potentials but she was unsure of any studies specifically looking at toxic substrates, apart from the ability of black soldier flies to grow on coffee waste.

59. The ACAF Secretary stated that work on insects as an alternative protein source had moved forward significantly in the last 12 months. The dialogue will continue. The European Commission had given positive recommendations on this subject and products were already on the market. Referring to the presentation at the recent CVO meeting he said the Secretariat would see if it is in the public domain.

Action: ACAF Secretariat

Agenda Item 6 – Forward Work Plan

60. Miss Jumnoodo introduced paper ACAF/16/15 on horizon scanning and future work for ACAF. She asked the Committee to agree the proposals for new work and the movement of item priorities as suggested in the paper. Additionally, Miss Jumnoodo sought the Committee's views on whether future work strands on feed additives as described under Agenda item 4 should also be included in the Work Plan.

Discussion

61. Members agreed to rationalise the titles of some of the items in the Forward Work Plan.

62. One Member noted that at the May 2016 Standing Committee meeting the Commission referred to an EFSA Opinion which identified modified forms of zearalenone which may be sixty times more potent than zearalenone itself. The Member reported that EFSA was undertaking a survey on these modified forms in food and feed which was scheduled for completion by mid-2018, and that there could be future work for the Committee. Dr Bond stated that the Commission had indicated that it will review the situation once the findings of the survey are finalised.

63. Another Member suggested negotiations regarding Brexit would also affect trade flows as well as regulation, and there could be implications for feed and food security. The ACAF Secretary agreed to report back to the Committee on Brexit developments at a future meeting of the Committee.

Action: ACAF Secretariat

64. The Committee agreed that further work was required before the Forward Work Plan could be finalised, including inclusion of work streams following the presentation by Geoff Brown on feed additives. The ACAF Secretary stressed that the document was a living document that could be updated at any time.

Action: ACAF Secretariat

Agenda item 7 – Matters arising from the minutes of previous meetings

Refuse Derived Fuels

65. The ACAF Chairman noted that at the June 2016 meeting, the ACAF Secretariat agreed to check with the Environment Agency the accuracy of the fifth sentence in paragraph 12 of the minutes of the 17 February 2016 meeting. The Secretariat contacted the Environment Agency who agreed the text. The revised minutes were subsequently uploaded onto the ACAF website.

Agenda item 8 - Any Other Business

66. The ACAF Chairman noted that he had been asked to write an editorial for the International Animal Health Journal on medicated feeds and antibiotics. A Member of the Committee noted concerns in consumer organisations on the use of antibiotics in animal feed.

67. Dr Bond said that the paper was useful, adding that the Commission is considering a reduction in maximum permitted levels for copper and there was evidence of co-resistance with antibiotics. Copper can have antibiotic properties and reducing MPLs in feed additives may potentially increase antibiotic use. Therefore a proportionate balance was needed. The ACAF Chairman said that antibiotic use for growth promotion was commonly used outside of EU. A Member of the Committee said that penicillin was widely used and was now not effective against *Staphylococcus aureus*. An official from the VMD said that they would ask VMD colleagues who deal with antimicrobial resistance (AMR) if they would provide the Committee with a presentation on this subject.

Action: VMD

68. It was noted that the paper had yet to be shared with the ACMSF⁷ AMR sub-group. A Member of the Committee who had been co-opted on to the ACMSF AMR subgroup agreed to seek an update from a recent meeting that they had not been able to attend.

Action: ACAF Secretariat/ACAF Member

⁷ Advisory Committee on Microbiological Safety of Food

Information Papers

69. The ACAF Chairman drew the Committee's attention to the following information papers:

- EU Developments (ACAF/16/16); and
- Update on the work of other advisory committees (ACAF/16/17).

70. Dr Bond provided the following statement on the on-going discussions on formaldehyde and ethoxyquin:

'Formaldehyde is used significantly within the UK feed sector, compared to many other Member States. The proposed conditions of use are restricted to decontamination of Salmonella in animal feed. During a recent vote at the October Standing Committee meeting in Brussels, an indicative majority vote was not gained for either its continued use or prohibition as a feed additive. Dr Bond conveyed the message to industry that the future use of formaldehyde as a feed additive is uncertain and that alternative processes must be explored.

Ethoxyquin - is used in the transport of animal feed products as an antioxidant; most notably for fishmeal, as well as certain vitamins and carotenoids. A draft regulation has been drawn up and that a partial suspension of its use will be voted on in due course.'

Further background and updates on SCoPAFF meetings can be found on the stakeholder summary page of the FSA website.

Date of the next meeting

71. The next meeting will take place on 23 February 2017 in Aviation House, London.

ACAF Secretariat

March 2017

Questions & Answers

Feed Additives - Presentation

Alana White (Cargill) commenting on the presentation provided by Geoff Brown, said that with respect to the point raised about companies illegally selling products on the internet (lack of legally required information) expressed concern on behalf of companies whose own websites are legal but when their products are sold by a third party they lose control over the information on third party websites.

Ms White also raised the point that it is not just small companies that manufacture and sell illegal products. It is often large companies taking the view that they will continue to manufacture and sell illegal products, to gain market advantage and meet farmer requirements, until they are caught by the enforcement authorities. There is a perception that there is little or no enforcement of illegal products with respect to MPL and labelling.

Finally, Ms White said that there was a lack of knowledge amongst farmers, pet and horse owners and vets regarding MPLs. They also perceive that there is more of a risk of negative consequences due to deficiency rather than toxicity, and regularly hold the belief that more is better.

David Pickard (Regulatory Affairs Consultant) said that there are companies making non-compliant claims in the UK marketplace. Regulatory consultants are often asked to advise on regulatory strategies (which include permissible claims); sometimes, possible strategies encompass some 'grey areas' of regulation, which, depending on interpretation, could result in non-compliance. In these cases Mr Pickard said that he is usually asked to identify a 'regulatory risk factor' that would include some evaluation of the likelihood and degree of enforcement action should an alternative interpretation be made by the authorities. Undoubtedly some companies will also be aware that they are breaking the law but will do so anyway because enforcement is currently weak.

The ACAF Secretary asked that if Mr Pickard had supporting information that he was willing to share this should be reported to the Agency so that appropriate action can be taken.

Insect protein presentation

David Pickard (Regulatory Affairs Consultant) noting the concerns expressed about the safety of insects as an alternative protein source, said there were three entries in the European Register of Feed Materials and therefore there was already certain insects on the marketplace. Dr Bond asked for further details in order for him to provide an answer. However, he did note that insect oils are already permitted for use in the EU for numerous species (i.e. aquaculture and monogastrics) and that insect proteins are also permitted in limited cases, such as in the pet food sector. Dr Bond also highlighted that provision for the use of insect protein in aquaculture is currently being proposed by the Commission for consideration in the form of amendments to the TSE Regulations.

John Sloss (Moy Park) commenting on the insect protein presentation, said that public acceptance-could depend on how the media approached the topic. As a feed manufacturer and poultry producer, he would have concerns that less than 75% acceptance is not high enough to give confidence that insect protein use in feed would be accepted by retail customers.