ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

MATTERS ARISING FROM THE 19 APRIL 2021 MEETING

The attached schedule records action taken on matters arising from the Committee's ninety-seventh meeting held on 19 April 2021 and previous meetings.

Secretariat
October 2021

RECORD OF ACTION TAKEN ON MATTERS ARISING FROM THE MINUTES OF THE NINETY-SEVENTH MEETING (ACM/MIN/97)

ACM/MIN/97 Para	Topic and action required	Action taken
Para 4.1	**Minutes of 97th meeting** Members approved the minutes of the 97th meeting as an accurate record and asked these to be posted on the ACMSF website.	Actioned.
Para 7.4 (bullet 14)	**Literature review on botulism in cattle, sheep and goats: 2006 to 2021** The committee to be provided with an update on how the FSA responded to the research recommendations in the 2006 report on botulism in cattle and 2009 report botulism in sheep and goats.	Actioned. Paper ACM/1368 refers. To be introduced under agenda item 7.
Para 7.4 (bullet 15)	Literature review to be revised as members suggested. If there is sufficient evident to suggest a need to revisit the recommendations made in 2006 report, the secretariat will examine this and report back to the committee with the revised literature review and proposals for next steps on the issue.	Actioned. Paper ACM/1367 refers. To be presented under agenda item 7.
Para 8.4 (bullet 8)	**Epidemiology of Foodborne Infections Group** Increase of S. Typhimurium in pigs (implications of this increase on process hygiene in relation to abattoirs). Secretariat to liaise with FSA Operations for any advice they may have on this point. APHA's update at the June 2021 EFIG meeting should provide information on whether this trend is continuing.	Actioned. See comments provided by the APHA (annex 1).

Para 13.6 (bullet 3)	**Update on Horizon Scanning workshop** The FSA was encouraged to proactively provide food business operators with comprehensive advice on cleaning and disinfection. Member who raised this point agreed to provide details of her remarks which would be passed to the appropriate section of the FSA for a response.	Actioned. Member's comments on cleaning and disinfection were sent to the FSA (Chemical Contaminants and Residues Team).
Para 13.6 (bullet 6)	Concerning study relating to the survival of infectious SARS-CoV-2 on food surfaces and food packaging materials, FSA to provide clarification on how the study is determining the survival of the virus on those surfaces that are artificially inoculated and then looking at the decline.	Actioned. See the FSA's response at Annex 2.
Para 13.6 (bullet 7)	In relation to the above study and the list of food and packaging types to be studied. There was surprise that disposable coffee cups were not included as it was underlined that they were one of the most extensively handled items (by servers and consumers). FSA to be asked to look at whether any of the listed items may be of lower priority compared to coffee cups.	Actioned. See the FSA's response at Annex 3.

RECORD OF ACTION TAKEN ON MATTERS ARISING FROM THE MINUTES OF THE NINETY-FOURTH MEETING (ACM/MIN/94)

ACM/MIN/94 Para	Topic and action required	Action taken
	Epidemiology of Foodborne Infections Group	
Para 9.6	A member questioned how the data in paper ACM/1296 (Update on EFIG's activities) was presented pointing out that this could be presented in a more informative way. Secretariat to relay comments to EFIG secretariat to consider.	Actioned. Response to committee's queries is in ACM/1370 and will be discussed under agenda item 8.

Annex 1

Increased isolates of Salmonella from pigs in recent years

Above query was discussed at the June 2021 EFIG meeting. APHA provided the comments below.

1. We assume this is referring to the rise in the number of ST incidents in pigs in 2020 and 2021 as mST numbers have reduced over same period and other serovars are a minor component.

2. It is important to indicate that scanning surveillance submission data from clinical cases (which represents many of incidents captured in the Salmonella quarterly reports) does not effectively inform us of changes in prevalence in the pig population over time. Salmonella is commonly non-clinical in pigs, thus data from scanning surveillance submissions represent a very biased sample. Only structured national prevalence studies can assess prevalence and detect changes. There is a paper from researchers at APHA, Weybridge which will be published soon which details a study assessing how the prevalence and profile of serovars in pigs have changed.

3. Scanning surveillance data shows that the trend for diagnoses of salmonellosis is of increased disease due to ST in pigs, with salmonellosis due to monophasics on the decline. This trend will be reviewed to see if the sharper increase in Q1 2021 continues into Q2 2021 when the data is analysed in late July/early August – interestingly, if you look back at past quarters, the peaks in diagnostic rate are often in Q4 or Q1 of the year, perhaps reflecting cooler wetter conditions, chilling effects or other (e.g., use of antimicrobials for respiratory disease favouring Salmonella colonisation).

4. We are not aware of any enhanced surveillance in Q1 2021 for pig salmonella from scanning surveillance perspective. There are multiple sources of bias in scanning surveillance data affecting both the numbers and types of submissions. We are aware anecdotally, through contacts with the pig veterinary community, of initiatives which may be affecting enteric disease submissions such as attempts to remove or reduce zinc oxide in feed in anticipation of the ban expected in 2022, establishing evidence for use of Salmonella vaccine to combat disease, and efforts to reduce the use of antimicrobials in pigs.

5. These observations on the diagnostic rate for ST are not necessarily associated with increased prevalence of Salmonella infection in pigs for which assessment through a structured survey would be required.

Annex 2

Initial work for project FS430621 used SARS-CoV-2 strain Victoria (BetaCoV/Australia/VIC01/2020), this was then changed to B.1.1.7 VUI-202012/01 as soon as it became available due to greater real-world relevance as the most commonly isolated strain.

The relevant virus strain was cultured in cell culture. Food types, apart from apple, raspberries and olives, were cut into 5g pieces and inoculated with 10µl of SARS-CoV-2 virus supernatant which was immediately spread as evenly as possible across the surface of the food. Apples were cut into larger slices to avoid the supernatant coming into contact with any potential inhibitors from the apple flesh and juice, however the surface inoculated remained comparable. These food items were cut due to logistical issues such as incubator space and sharing of the Microbiological Safety Cabinet. Raspberries and olives were tested whole.

Samples were allowed to dry for 60 minutes and virus was removed using either swabbing, pulsification or beads and vortexing to determine Day 0 levels of infectious virus. The method of virus recovery with the highest recovery efficiency for each specific food type was determined in the first deliverable. This method will be used for remaining deliverables. Food samples were then incubated at the required temperature and humidity and sampled at appropriate time points.

For all 3 virus recovery methods mentioned above the resulting food sample extracts were sampled at various time points and push filtered through a filter to clarify the suspension and remove bacterial contaminants. This was then assayed for infectious virus by plaque assay with results described as plaque forming units (PFU).
For solid surfaces (packaging materials) the method involves inoculating 10mm x 10mm sections of the packaging which is inoculated using a 10µl pipette and spread evenly across the surface. The samples are incubated at the required temperature and humidity. Virus is removed at required timepoints by vortexing with beads and the sample assayed by plaque assay with results described as PFU. Packaging materials are included in later deliverables and are yet to be tested.

Additional controls have been tested to ensure the recovery methods remove potential microbial contaminants that could interfere with the infection assay.
Currently all tests performed have assayed the food sample extracts daily for 7 days. Shorter time periods will be considered if results show that virus inactivates at faster rates on some food types.
By comparing the number of PFU at each time point we are able to determine the rate of decline of infectious virus on these food and packaging types at the temperature and humidity combinations representative of a retail environment. Full statistical analysis will be carried out after the completion of all deliverables in the final report.

Annex 3

Study relating to the survival of infectious SARS-CoV-2 on food surfaces and food packaging materials

Thank you for the query regarding the inclusion of disposable coffee cups within research project FS430621 'Survival of SARS-CoV-2 on food and food packaging materials'. This query has been discussed with the policy lead and project lead and it has been agreed that we will not be adding disposal coffee cups to the packaging materials to be tested. The reasons for this decision are:

•The packaging types included had been chosen by policy colleagues as they are the most common packaging types found in supermarkets, supermarkets being the focus of the project
•Coffee cups are made out of cardboard with a plastic lid and people drink from both the cardboard and through the hole in the plastic. The study already includes composite drinks cartons and PET plastic which most closely resemble the packaging materials of a disposable coffee cup
•Other studies have already looked at the survival of SARS-CoV-2 on cardboard (Van Doremalen et al. 2020)
•Coffee cups will be handled in a more controlled way than packaging within supermarkets. They are likely to be handled by the member of staff and by the consumer rather than the potential for multiple people to handle the packaging as in the supermarkets
•Coffee cups will likely contain very hot liquids which will have negative impact on the survival rate of SARS-CoV-2 in comparison to the survival rate of unused coffee cups making comparability of testing results and real life situations difficult. Additionally testing coffee cups at higher temperatures (~60°C) will add complexity to the laboratory work
•Adding coffee cups into the project will add at least 1 month, if not 2 months delay to the end date of the project (roughly 01 September 2022)

Overall it has been agreed that although determining the rate of decline of infectious SARS-CoV-2 on coffee cups would be interesting it does not fit within this project.