



## **Deliverable**

**D-JRP21-FBZ3.1-BIOPIGEE-WP1.4**

**Twelve Month Report 2020**

**Workpackage 1**

Responsible Partner: BfR

Contributing partners: SVA (SE), NVI (NO), VFL/EMU (EE), RKI (DE), APHA (UK), WBVR/UU (NL), ANSES (FR), AGES/VMU (AT), PIWET (PL), VRI (CZ), NDRVMI (BG), ISS (IT), IZSAM (IT), IZSLER (IT), RIVM (NL)



## GENERAL INFORMATION

European Joint Programme full title	Promoting One Health in Europe through joint actions on foodborne zoonoses, antimicrobial resistance and emerging microbiological hazards
European Joint Programme acronym	One Health EJP
Funding	This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 773830.
Grant Agreement	Grant agreement n° 773830
Start Date	01/01/2018 (BIOPIGEE 01/01/2020)
Duration	60 Months (BIOPIGEE 30 Months)

## DOCUMENT MANAGEMENT

<b>Project deliverable</b>	D-JRP21-WP1.4 Project report 1 <sup>st</sup> year (12 Month Report Y3 (2020))
<b>Project Acronym</b>	JRP21-FBZ3.1-BIOPIGEE
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<b>Due month of the report</b>	M37
<b>Actual submission month</b>	M36
<b>Type</b> <i>R: Document, report DEC: Websites, patent filings, videos, etc.; OTHER</i>	R <b>Save date:</b> 17-Dec-20
<b>Dissemination level</b> <i>PU: Public (default) CO: confidential, only for members of the consortium (including the Commission Services)</i>	PU
<b>Dissemination</b> <i>Author's suggestion to inform the following possible interested parties.</i>	<p>OHEJP WP 1 <input checked="" type="checkbox"/>      OHEJP WP 2 <input checked="" type="checkbox"/>      OHEJP WP 3 <input checked="" type="checkbox"/>  OHEJP WP 4 <input type="checkbox"/>      OHEJP WP 5 <input checked="" type="checkbox"/>      OHEJP WP 6 <input type="checkbox"/>  OHEJP WP 7 <input type="checkbox"/>      Project Management Team <input checked="" type="checkbox"/>  Communication Team <input checked="" type="checkbox"/>      Scientific Steering Board <input checked="" type="checkbox"/>  National Stakeholders/Program Owners Committee <input type="checkbox"/>  EFSA <input checked="" type="checkbox"/>    ECDC <input checked="" type="checkbox"/>    EEA <input type="checkbox"/>    EMA <input type="checkbox"/>    FAO <input checked="" type="checkbox"/>    WHO <input checked="" type="checkbox"/>    OIE <input checked="" type="checkbox"/>  Other international stakeholder(s): Pig industry related stakeholders in participating countries .....</p> <p>Social Media: .....</p> <p><b>Other recipient(s):</b> Project consortium partners .....</p>



# BIOPIGEE

## Project report 1<sup>st</sup> year

### Objective

The report of the first project year (12 Month Report) was produced in WP1-T3 “Provision of project deliverables and reports” in order to inform about the progress in the BIOPIGEE project (Deliverable D-JRP21-WP1.4 “Project report 1st year”).

### Participating countries

DE (BfR), AT (AGES), FR (ANSES), UK (APHA), IT (ISS, IZSLER, IZSAM), BG (NDRVMI), NO (NVI), PL (PIWET), DE (RKI), SE (SVA), VFL (EE), NL (WBVR, RIVM)

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# BIOPIGEE - 12 MONTH REPORT Y3 (2020)

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## 1. Summary of the work carried out

The BIOPIGEE project is successfully running since January 1st 2020.

In WP1, a communication infrastructure was set up among partners (email-lists, online conferences, shared documents and the website). The kick-off-meeting in Berlin brought all actors together. A BIOPIGEE leaflet and a poster were published. A first draft of the data management plan was developed and entered to CDP. A survey tool for T2.2 was implemented and user support is provided. Plans are being developed how to cope with the consequences of the CoVID-19 outbreak for the BIOPIGEE project. First deliverables incl. the 9 months report were provided. The project lead changed.

In WP2 T2.1, a biosecurity questionnaire for European pig farms was developed to assess the relevance of measures on the prevalence of *Salmonella* and hepatitis E virus. The questions were transferred into a software, translated into the languages needed and tested in the participating countries. In T2.2, the questionnaire is being applied. Protocols for farm recruitment, sampling and laboratory testing were designed. Farm recruitment started and 59 farm visits (status 17.12.2020) have taken place among all participating countries so far. The visits were disrupted by COVID-19 restrictions. Relevant data from a previous study was collected from ANSES (90 farms). T2.3 started to list existing biosecurity protocols for slaughterhouses from partner countries. In T2.4, the three longitudinal studies were designed. They are coordinated to ensure any synergies and are utilised to assist with making the results comparable.

In WP3, discussions are in progress to choose the panel of *Salmonella* isolates and to compare the methods for disinfectant effectivity testing, and to define the methods that will be used to screen the isolates for biofilm forming abilities. Furthermore, work is continued on the further development of an HEV infectivity assay.

WP4 successfully developed a questionnaire covering around 24 questions about farm performance and provided this input to WP2. Information needed from WP5 (T5.2 systematic review/meta-analysis) for the modelling in WP4 is being specified.

WP5 T5.1 created an online catalogue of effective biosecurity measures on the prevalence of HEV and *Salmonella* and first data from WP2-5 were integrated. In T5.2, a systematic literature review was conducted between partners. Literature was screened, assessed, and extracted information compiled in a shared document. Data were prepared for meta-analyses. A first expert panel (scientists) was built and rated biosecurity measures during the questionnaire development for T2.1. This panel has been extended with more types of experts (e.g. advisors, controllers; T5.4) in order to identify weights for the benchmarking in T5.5.

WP6 T6.1 initiated the collection of pictures of good biosecurity practice (collected in T2.2), shared in a protected space at the BIOPIGEE website. A shared file containing a list of relevant websites, where results and compiled information of the project can be disseminated, was developed. A BIOPIGEE flyer with brief information about the project was produced (T6.4). The planned workshop series is discontinued due to the CoVID-19 outbreak. Instead, we are planning for national/regional information events at the end of the project.



## 2. Work carried out in the JRP/JIP, scientific results and integrative outcomes

### WP: 1 Project coordination and integration of results (M25-M54)

The project coordination, link between Tasks and WPs, and integration of results is ongoing until the end of the project. Tele-/webconferences have been organised, conducted and followed up (minutes). Email lists for all WPs and Tasks have been created. Shared documents have been set up and uploaded to a protected cloud server, hosted by BfR. Links to all relevant online tables and documents have been listed in the BIOPIGEE private groupsite. Here, a file system for different tasks of the project is developing for the data exchange. A first draft of the data management plan (DMP) has been prepared. After the OHEJP DMP group provided the new tool CDP, a training session on this system was attended and the DMP was entered into and downloaded from this system. A publication plan for the project, listing intended publications for WP2-5 have been set up as a shared document which is currently listing .

Technical set up and user support for a survey tool applied in T2.2 has been managed. Survey material including data protection forms, tutorials for the technical use of the survey and an invitation letter to farmers were prepared and, together with the survey app, made available to T2.2 participants via a download link. Incoming survey data from T2.2 get regularly and continuously checked (eased with a little KNIME tool) and reported as well as provided monthly to T2.2 after a first data cleaning step. Thereby interviewers in T2.2 can follow and check the data income.

First deliverables and the 9 months report were provided.

Overarching problems have been solved on a higher level (e.g. invitation of expert opinions, instructions for literature review). Pressing questions in subtasks have been solved/forwarded.

Plans are being developed how to cope with the consequences of the CoVID-19 outbreak for the BIOPIGEE project.

The project lead changed. Chris Kollas left the project at the end of June 2020, Elke Burow changed from deputy to lead and Veit Zoche-Golob entered the project as new deputy in autumn 2020.

### JRP21-WP1-T1 Project management and meeting organisation (M25-M54)

The BIOPIGEE Kick-off meeting was organised and successfully conducted at BfR in Berlin/Germany on 29<sup>th</sup>-30<sup>th</sup> of January 2020. All participating organisations were represented, of these 41 BIOPIGEE members took part. Participants stated a good forthcoming of the project and a good organisation of the event. Minutes of the meeting were written, re-worked with all participants and finally published internally.

The BIOPIGEE OHEJP website has been filled with content, participants were invited to join, organised as all having allowance to administrate in the group, which is currently the only technical way to enable participants using the space "Projects" for managing tasks. It is suboptimal that all need to be administrators and e.g. administration information, besides the website is quite slow in opening and displaying content. However, the offered structure and private space for the group is generally very helpful for the group organisation. Therefore, participants were repeatedly encouraged to use that website for exchange within the project. All general, important and finalised documents are getting uploaded to the page and status updates have been written.



Shared documents have been set up and are uploaded to the BfR cloud server. Links and passwords to open these documents are stored at the BIOPIGEE website. Thereby, data protection as well as access of only project people is ensured.

Production of a BIOPIGEE flyer in WP6/ OHEJP Communication Team was supported with text modules and images.

#### **JRP21-WP1-T2 Development of data management plan (M25-36, M43-48)**

First, the elaboration of the data management plan was started. All WP-leaders were invited to fill the "old" xls-sheet regarding their data. Later, we were informed that the former tool DMPonline will not be supported by OHEJP any further and a search for a better tool is under way. The deadline for the first version of the DMP was delayed by the OHEJP-PMT. Hence, work on the DMP was put on hold until September. Introduction to the new tool CDP for the DMP took place on September 9<sup>th</sup> 2020. Afterwards, we filled the DMP in CDP and are waiting for further instructions from OHEJP-PMT (was announced for January 2021).

#### **JRP21-WP1-T3 Provision of project deliverables and reports (M28-M54)**

First deliverables (questionnaire, flyer, data management plan, HEV infectivity assay) and the 9M report have been provided, via the private group and/or Zenodo.

#### **JRP21-WP2 Biosecurity effectiveness studies (M25-M50)**

##### **JRP21-WP2-T1 Development of biosecurity protocol (M25-M28)**

A biosecurity protocol for European pig farms was developed in order to assess the relevance of measures on the prevalence of *Salmonella* and hepatitis E virus. As first step, existing protocols from Europe and North America were assessed but it was decided to design a new protocol specific to the needs of the project. Evidence from a literature review and from expert opinion (scientists) was used to inform the content of this protocol. The biosecurity measures were reworded as questions (55 biosecurity questions for indoor, 56 for outdoor situation), and questions on general farm characteristics (10) were added.

##### **JRP21-WP2-T1-ST1 Transfer of the questionnaire into an electronic version (M28-30)**

The questionnaire was transferred into an electronic survey tool and translated into the necessary languages of the countries participating in T2.2. An app for this survey was produced, set up on devices of interviewers in each of the participating countries and the function of the app and data transfer to a central server were tested, with support of WP1. This system is enabling standardised data collection, and facilitates data income and evaluation.

##### **JRP21-WP2-T2 Application of the biosecurity protocol (M27-M42)**

The developed biosecurity questionnaire is getting applied in pig farms in the participating countries. Farm recruitment has started and 59 farm visits have taken place so far from nine different countries. Incoming survey data are being reported to the interviewers quarterly to check and prepare for later data evaluation. Appropriate data imputation methods will be used to correct missing values that impact upon the use of records in our planned analysis. Photos are also being collected of examples of good biosecurity practice, to add to project documentation in work package 6. The task is delayed due to different restrictions in EU member states concerning epidemiological situation related to worldwide pandemic of coronavirus disease COVID-19. NL decided not to collect fecal samples that



they had planned in this task for *Salmonella* testing but instead will attempt to use results from routine meat juice sample surveillance to identify high and low risk farms. There have been difficulties in all countries to visit farms and sample as expected. The current situation in the countries is collected by WP1 and WP2 and updated in monthly catch-up conferences between partners. Although most countries started farm visits in autumn 2020, these have continued to be disrupted by COVID-19 lockdowns, as well as African Swine Fever concerns, restricting access to farms and the willingness of farmers to allow access. The partners will hurry to fulfil the planned design yet. The technical set up of the survey and conditions for entering data, is leading to mostly edited and standardised data which will reduce the effort of data cleaning, saving time before data analyses in the later process. However, reduction in the number of farm visits, sample size and contributing partner countries could occur unless the deadlines for the project can be extended. The team will consider contingency plans, such as using monitoring data to predict disease risk or data from previous studies that might provide some of the necessary biosecurity data. Additionally, biosecurity data from 90 pig farms from a previous ANSES study have been collected and aligned to questions within the biosecurity protocol to allow their usage in this study.

The sampling, laboratory testing and recruitment protocols have been designed. Details of the HEV-testing methods have been discussed between partner labs and participants of T2.2 and T2.5 in order to harmonise methods as much as possible and to reach comparability of results that can also supplement the HEVnet database.

#### **JRP21-WP2-T3 Slaughterhouse biosecurity practices (M31-42)**

This Task was planned to start at the beginning of next year (M37). We pulled it forward and have already started to collect existing national and local assessment protocols on biosecurity measures in slaughterhouses. A first virtual meeting took place in September 2020.

#### **JRP21-WP2-T4 Field studies (M25-M48)**

The study plans for the three proposed studies have been designed and the teams have been in contact to assess synergies and harmonisation of techniques to improve comparison of potential findings. The protocol has been uploaded to the BIOPIGEE page and is thereby accessible to the whole consortium. The task is ongoing.

#### **WP3: Impact of disinfection on persistence of pathogens in biofilm (M25-M54)**

##### **JRP21-WP3-T1: Comparison of methods for testing the effect of disinfectants (M25-M40)**

This task is ongoing. Discussions and planning of methods and reference strains to be used by all participating laboratories are ongoing.

##### **JRP21-WP3-T2: Effect of disinfectants on biofilm-associated wild type *Salmonella* (M25-M50)**

This task is ongoing. It is dependent on the outcome of JRP21WP3-T1. Discussions and planning are ongoing among the participants in JRP21WP3 participants. Method establishment has started.

##### **JRP21-WP3-T2-ST1: Selection of wild type *Salmonella* isolates (M25-M36)**

Discussions are in progress to choose the panel of *Salmonella* isolates, and finalise the method that we will use to screen the isolates for biofilm forming abilities. The sub-task is going ahead as planned and will be completed by the deadline.



### **JRP21-WP3-T2-ST2 Assessing the effect of disinfectants (M37-M42)**

Task 2 depends on results of Task1. Labwork has been started, initial testing ongoing. It is on schedule.

### **JRP21-WP3-T3: Study of HEV stability in relation to disinfection approaches (M25-M54)**

HEV stability in microfilms will be studied using appropriate HEV infectivity assays which partly have been developed in JRP21-WP3-T3-ST1, and will be further implemented in year 2 (and 3) of the project.

### **JRP21-WP3-T3-ST1 Implementation of HEV infectivity assay for testing biofilms (M25-M36)**

In the first year of the BIOPIGEE project, a first version of the HEV infectivity assay has been completed. In this assay primary hepatocytes are isolated from liver tissue of (HEV free) piglets using a collagenase treatment. The obtained primary hepatocytes are aliquoted and stored at -180 Celsius until use. For the actual assay the hepatocytes are seeded onto plates and inoculated with different concentrations of HEV. First HEV replication plots have been established.

A second option for testing of HEV infectivity, precision-cut liver slices (PCLS) are used and further study is ongoing. PCLS cuts are directly transferred to an ice-cold organ preservation solution and inoculated with different concentrations of HEV and tested daily using qRT-PCR for increasing levels of HEV RNA. Single replication rounds can be observed but the method still needs optimisation.

### **WP4 Modelling of the cost and effectiveness of biosecurity measures (M25-M50)**

Task 4.1 is finished, and T4.2 and T4.3 have just started.

#### **Task 4.1: Development of questionnaire on biosecurity costs (M25-M27)**

A questionnaire with respect to health and performance data of pigs located in farms was developed which covers 24 questions. The questionnaire was delivered to the partners of WP2.1, who prepared a protocol on biosecurity practice and who will collect these economic data during their empirical survey at the farm level. Questions about the costs of biosecurity were not included. The reason is that the costs of the selected biosecurity measures will be difficult and very time-consuming to answer for the farmers. Thus, the costs of the biosecurity measures will be estimated using usual country prices such as disinfection costs per litter and via monetary values from the scientific literature.

#### **Task 4.2: Stochastic simulations on the effectiveness of biosecurity measures (M33-M49)**

Task 4.2. has started in September 2020. Three online meetings were performed to coordinate and harmonise the different task of 4.2 and 4.3 between the partners. In these meetings we have discussed the adaption of currently available transmission models such as QMRA for *Salmonella* and SimInF model for HEV and/or *Salmonella* of the consortium partners in order to analyse the impact of biosecurity and other mitigation measures (e.g. at the slaughterhouse) on prevalence reduction of the zoonotic pathogens. During the meetings, the data requirements (e.g. type of transmission data, meta-data on the animal population e.g. movements data of pigs, and necessary data inputs of the other WPs 2, 3 and 5 about the effectiveness of biosecurity measures and/or mitigation measures on the reduction of prevalence values etc.) was discussed for the transmission model as well as the In- and Outputs of the models.

#### **Sub-Task 4.2.1: Data collection for the transmission models (M33-M36)**

Task 4.2.1 has started in September 2020 and in the first two meetings the data requirements for the transmission model was discussed between the partners as well as the outputs of the single models





considering different type and aggregation of input data from the other WPs. Additionally, the data requirements and their availability were discussed. In the third meeting, the functionality of the R code and the transmission were presented for each member involved in WP4. The latter procedure was necessary so that everyone has the same level of knowledge about the R Code, functionality of the transmission model and associated strength and limitation of the simulation models.

**Sub-Task 4.2.2: Adaption of the models based on the available (M37-M42)**

The simulation model will run for three countries for which all data needs are available. The adoption of the models already started e.g. incorporation of the effect of biosecurity measures on the spread within and between herds in the R Code.

**Sub-Task 4.2.3: Simulation runs for the identified effective biosecurity measures (M37-M49)**

Not started yet.

**Task 4.3: Merge of models into one QMRA (M34-M50)**

Just started

**Sub-Task 4.3.1: Different transmission models will be matched to one QMRA zoonotic pathogen model (M34-M47)**

Just started

**Task 4.4: Economic model of biosecurity measures across (M37-M50)**

Not started yet.

**Sub-Task 4.4.1: Performing economic assessments of best practice biosecurity (M37-M50)**

Not started yet.

**WP: 5 Benchmark of biosecurity practice (M27-M52)**

**JRP21-WP5-T1 Data integration from WP2-4 in catalogue of biosecurity measures (M27-M50)**

With support of WP1, an online table ("BIOPIGEE: Biosecurity measures *Salmonella* and HEV") was set up starting the WP5 catalogue of effective biosecurity measures for HEV and *Salmonella* prevalence. Data from WP2-5, especially from a brief review in T2.1, were integrated into the catalogue. All BIOPIGEE participants were invited to supplement the BIOPIGEE catalogue of biosecurity measures. The catalogue is getting updated continuously with identified biosecurity measures and estimates of their effectiveness. At the end of the project, this catalogue will be a very valuable resource for the project's stakeholders working on food safety and the reduction of *Salmonella* and HEV in pork products.

**JRP21-WP5-T2 Literature review/meta-analysis (M27-M50)**

A systematic literature review about the effectiveness of biosecurity measures specifically against *Salmonella* and HEV in pigs farms is nearly finished. The search question, terms, period, and in- and exclusion criteria have been defined in the group with the help of a shared online document. The articles found in literature databases have been evaluated and the extraction of the relevant data is expected to be finished in M36. Afterwards the data will be categorised and prepared for the meta-analysis. The meta-analyses will be performed for all biosecurity measures for which sufficient studies were published in order to estimate their effectiveness to reduce *Salmonella*- and HEV-prevalence in



pig herds. As additional data, e.g. about the way of pathogen detection, productions stages and farm types, were extracted from the literature, stratified meta-analyses might be possible which will provide more targeted effect estimates. Besides providing information for the catalogue of biosecurity measures (T5.1), the results of this task will be used in WP4 to parametrise the simulation models. Although it won't be possible to offer first estimates to WP4 at the end of M36, the data processing and meta-analyses are done in close consultation with WP4 to support WP4 in defining dummy variables for the simulation based on preliminary results until estimates will be available. Thus, WP4 can advance in coding and testing their simulations and the time lost due to the delay in task 5.2 is minimised.

This task is delayed because some partners, who contributed intensively, were additionally charged with covid-19 related tasks and had to leave the work group. This was solved on a higher level, but delays occurred due shortage of personnel for 4 months at BfR after the initial project lead had left. Besides, technical issues around conference tools strained communication between partners until we found solutions. Thanks to personnel reinforcement at BfR since November, we could increase support and contribution, so that this task can be finalised with the help of the group, but with some delay. The task was anyway planned to be carried out in steps and to run until 2022.

In the review, we wish to concentrate on biosecurity measures included in the questionnaire in T2.1 and for which no references on proving evidence of effectiveness has been identified in T2.1. Therefore, knowledge gaps in information from T2.1 is being analysed.

#### *JRP21-WP5-T3 Machine learning approaches (M47-52)*

This task has not started yet. However, we are discussing to drop or change it in order to support the data analysis / imputation of missing values in task 2.2 because that task might need additional time and/or finish the data acquisition with much less data than planned due to the Covid-19-restrictions.

#### *JRP21-WP51-T4 Expert panel to add estimations on effectiveness/ weights (M33-M51)*

This task will build on and expand the expert panel set up and surveyed in T2.1 (scientists) to additionally incorporate knowledge of other stakeholders like practitioners, advisors, etc.. We are currently précising the list of types of experts to recruit in an online table. There was a comprehensive discussion which kind of experts to invite and how to categorise them. This fruitful discussion showed that there are marked differences between the veterinary and consulting systems within the pig sectors of the different partner states. These differences in the systems considerably influence the understanding of the roles within the pig sector of different professions. A shared spreadsheet with predefined types of experts was created and a first selection of experts from several countries agreed to support the panel. Further experts will be contacted. The procedure of the expert interviews is going to be defined and the expert survey prepared in the next weeks. For this, the questionnaire of T2.2 needs to be reworded to statements and possible need of translations will be identified between partners. Score categories for organising response of experts will be discussed and developed.

#### *JRP21-WP5-T5 Benchmark system for effectiveness of biosecurity practice (M45-52)*

This task has not started yet.



## **JRP21-WP6 Dissemination (M25-M54)**

### **JRP21-WP6-T1: Assembly and development of biosecurity information (M25-M54)**

This task is dependent on data provision from the other WPs and results have not yet been obtained. Collection of best biosecurity illustrations (pictures) during farm visits of WP2 T2.2 has been initialised and is described in the Sampling protocol of T2.2. Due to the CoVID-19 outbreak, there has been a delay in the initiation of farm visits for some partners with subsequent delays in collection of illustrations. This task is ongoing.

### **Sub-Task JRP21-WP6-T1-ST1 Identification of appropriate websites or other online channels (M25-M54)**

A shared file at the BIOPIGEE website has been developed to list appropriate channels for dissemination in partner countries. So far, 21 web sites in 6 countries have already been identified for dissemination. This task is ongoing.

### **Sub-Task JRP21-WP6-T1-ST2b Provision of slaughterhouse protocol to slaughter industry/related associations (M43-M52)**

This task has not started yet and is postponed from M31 to start in M43 when effective biosecurity measures for slaughterhouses have been analysed in T2.3.

### **Task JRP21-WP6-T3: Organisation of a workshop-series (M25-M54)**

WP5 (expert panel) and WP6 (workshops) are working on the description of stakeholder groups to consider, include and address in each of the two work packages. However, due to the current CoVID-19 situation, workshops have not taken place as planned. It is being discussed to disseminate results in national or regional events like information days of consultant services in 2022. At the moment, it is not possible to make any concrete plans for the workshops based on physical meeting as it is very much depending on how the pandemic situation evolves. Online digital meetings with experts (T5.4) are being considered

### **Sub-Task JRP21-WP6-T3-ST1 Identification of relevant experts (M25-M52)**

As we plan to change from stakeholder to expert discussions, the shared file on listing willing participants for an expert panel (link listed at the BIOPIGEE website) will not only be developed in T5.4 but also in WP6 as experts will also be contacted from WP6.

WP5 and WP6 are working on detailed description of expert groups to consider, include and address.

### **Sub-Task JRP21-WP6-T3-ST2 Identification of relevant conferences (M25-M26)**

Relevant conferences are currently been listed in our publication plan (link to shared document at our website)

### **Sub-Task JRP21-WP6-T3-ST3 Organisation of Workshop 1 (M25-M30)**

This task had to been changed due to the current CoVID-19 situation. Regional or national workshops are intended to use for dissemination of results. It's also been discussed to hold a workshop as digital meeting. If possible, we prefer physical national or physical regional workshops.

### **Additional Sub-Task JRP21- WP6-T4 Production of BIOPIGEE flyer (M27-M29)**

WP6 (supported by WP1 and the OHEJP Communication Team) produced a BIOPIGEE flyer with brief information material about the project for handing out to farmers (T2.2), external collaboration partners, at conferences, workshops (T6.3) and when recruiting experts for the panel (T5.4).



### 3. Progress of the project: milestones and deliverables

#### Deliverables

JRP /JIP code	Project deliverable number (Original number, if different from the actual one)	Deliverable name (Original name, if different from the actual one)	Delivery date from AWP 2020	Date delivered on Project Group website	If deliverable not submitted: Forecast delivery date	Is this delay due to COVID -19?	Comments (Please mention: public or confidential, the Zenodo reference and other comments)	Proposed category* (1 to 8) (several categories may be applicable)
21	D-JRP21-WP1.2	First draft of data management plan finished	M30 – postponed by OHEJP-PMT	Uploaded on private space: 18.10.2020	M34	No	Entered DMP to new tool CDP on 18 <sup>th</sup> Oct. 2020 and submitted download to OHEJP WP3 and Comms Team on 18 <sup>th</sup> Oct. 2020. We are waiting for feedback (announced by DMP group for January 2021)	8
21	D-JRP21-WP1.4	Project report 1st year submitted	M36	17.12.2020				8
21	D-JRP21-WP2.1	Biosecurity protocol (addressing <i>Salmonella</i> and HEV) designed for data collection in the field	M28	Uploaded on private space: 01.05.2020			Confidential until publication (A scientific paper is foreseen in 2022)	7
	D-JRP21-WP3.5	Method for testing persistence of infectious HEV in surface microlayers	36	D-JRP21-WP3.5	42	Yes	This deliverable is delayed due to conflicting obligations on Covid19. It is proposed to postpone this deliverable to M42	2
	D-JRP21-WP3.6	HEV infectivity assay available	36	09.12.2020			Delivered but not public yet. A scientific paper is foreseen in 2021.	2



JRP /JIP code	Project deliverable number (Original number, if different from the actual one)	Deliverable name (Original name, if different from the actual one)	Delivery date from AWP 2020	Date delivered on Project Group website	If deliverable not submitted: Forecast delivery date	Is this delay due to COVID -19?	Comments (Please mention: public or confidential, the Zenodo reference and other comments)	Proposed category* (1 to 8) (several categories may be applicable)
21	D-JRP21-WP6.3	Workshop 1 completed	30	54	54	Yes	WP-leader decision: The series of workshops is cancelled due to covid-19-outbreak, instead an online panel discussion is planned for 2021 and national information events in 2022	8
21	D-JRP21-WP6.4	BIOPIGEE Flyer	Additional deliverable	Uploaded in private space: 24.08.2020	32		Brief information when contacting potential new collaborators, experts for our panel, recruiting farmers, and as general dissemination to public) <a href="https://zenodo.org/record/4009015">https://zenodo.org/record/4009015</a>	8

\* Categories of Integrative activities : 1. Design and implementation of surveillance and control activities; 2. Harmonised protocols and applied best practice; 3. Databases of reference materials and data, incl. metadata; 4. Standardised data formats, aligned data analysis for interpretation of surveillance data; 5. Sharing and communication of surveillance data; 6. Sharing of best intervention activities ; 7. Prevention: aligned use of facilities and models; 8. Other (please specify);



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## Milestones

JRP/JIPCode	Milestone number	Milestone name	Delivery date from AWP 2020	Achieved (Yes/No)	If not achieved: Forecast achievement date	Comments
21	M-JRP21-01	Kick-off meeting successfully organised	M26	Yes		
21	M-JRP21-02	Questionnaire on biosecurity costs	M26	Yes	M27	Farm performance questions included. Biosecurity cost question excluded; data will be gathered from other sources.
21	M-JRP21-03	Relevant conferences for workshops to be held are identified	M26	No	Not possible under the current CoVID-19 circumstances	The CoVID-19 situation has put a stop to conferences including workshops for now. It is planned to disseminate findings at local/national workshops at the end of 2021/ beginning of 2022 instead
21	M-JRP21-04	Biosecurity protocol designed for <i>Salmonella</i> and HEV	M28	Yes		
21	M-JRP21-05	Relevant stakeholders identified	M28	Yes	M36	Was postponed due to the current CoVID-19 situation; Instead list of experts for a panel has been expanded and developed in an online table (link in BIOPIGEE private webgroup)
21	M-JRP21-06	Appropriate websites or other online channels for dissemination identified	M30	Yes		List of web sites is being filled in an online table (link in BIOPIGEE private webgroup); Content will be continuously updated throughout the project
21	M-JRP21-07	Workshop 1 completed	M30	No	Not possible under the current CoVID-19 circumstances	WP-leader decision: The series of workshops is cancelled due to covid-19-outbreak, instead an online panel discussion is planned for 2021 and national information events in 2022



JRP/JIPCode	Milestone number	Milestone name	Delivery date from AWP 2020	Achieved (Yes/No)	If not achieved: Forecast achievement date	Comments
21	M-JRP21-08	Design of field study protocols	M32	Yes		
21	M-JRP#-09	First part of meta-analysis finished	M36	No	M38	A literature review was done, information is extracted and data are getting prepared, meta-analysis is delayed due to partners involved in covid-testing and missing personnel for 4 months at BfR
21	M-JRP21-10	<i>Salmonella</i> strains for testing are collected	M36	Yes		
21	M-JRP21-11	HEV infectivity assay available	M36	Yes		



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#### 4. Publications and additional outputs

Publication title and DOI reference	Is OHEJP acknowledged?	Is it a Green Open Access? If yes please provide the embargo length and the manuscript release date	Is it a Gold Open Access? If yes please provide the processing fees (in €)





## Additional output

Burow E., Prigge C., Smith R., Meester M., Santucci G., Young B., Rose N., Käsbohrer A., Kollas C. (2020): Questionnaire on best biosecurity practices to limit *Salmonella* & HEV occurrence in European pig farms. Poster at OHEJP ASM 2020, web conference, 27.-29.05.2020.

A BIOPIGEE Flyer has been produced to inform about the project. It was finalised on 22.06.2020 (see deliverables).

## 5. On-going and planned collaborations with national or European projects or networks

Collaboration was planned with Ghent University (developed BioCheck®). We invited Jeroen Dewulf to evaluate our farm survey and to participate in the slaughterhouse study. Unfortunately, he was not funded. Hence, he indicated that his input may be limited.

A cooperation with HEVnet is ongoing. Agnetha Hofhius was our contact until August 2020, she also participated in our Kick-off-Meeting in January 2020. As she is now working on Covid-19 fulltime, our new contact persons are Annelies Kroneman and Claudia Swart-Coipan. Annelies Kroneman participates in our group (covering HEV-test-experts from participating institutes) which is working on the harmonisation of the HEV test protocol to ensure that information from samples collected and tested on HEV in BIOPIGEE (T2.2) can be included in the European harmonised database HEVnet. We are working on expanding the HEVnet data base with some animal/farm/biosecurity related variables.

Frank Boelaert (EFSA) has been invited to support the expert panel (T5.4) informing our benchmarking system. He was also asked for information and contacts related to current projects and new information on biosecurity measures related to *Salmonella*/HEV prevalence.

We plan to inform DG HEALTH, DG AGRI and EFSA, if our findings suggest recommendations to improve existing surveillance programmes.

National collaborations with animal health services/veterinary services and practicing veterinarians, which partly have already existed before and partly are being built during the project, are of high importance and support for the project. These services/vets can recruit farms based on their client pool and are less restricted in accessing farms for sample collection/survey in the Covid-19 situation. They are also involved in our expert panel and will play an important role in the dissemination part as having a special interest in our findings and to disseminate them. In the expert panel, also staff with agricultural and teaching background (chambers of agriculture), scientists from different national (research) institutes (e.g. FLI in Germany) and universities (e.g. Vetmeduni Vienna/Leipzig, University of Rostock, Utrecht University), quality controllers of the pig production chain are included. Thanks to these collaborations, we can build on a strong network of varied experts between practice and science in Europe.

Collaborations with universities in several partner countries are initiated. This gives the opportunity to find support of students to carry out systematic literature reviews on BIOPIGEE relevant questions. For instance, a diploma thesis is currently being prepared in WP4, dealing with the topic "Financial impact of biosecurity and vaccination measures to minimize the use of antimicrobials in pig farms". Additionally, the cooperation with universities also makes it possible to obtain data and information from on-going national projects to fill any data gaps in our WPs. For instance cooperation with Austrian swine clinics enables to recruit farms to participate in questionnaires and to obtain information about existing data sources.

Through these contacts, we may also increase dissemination of findings.



## 6. Data Management Plan

**The DMP of the project should be available. Please indicate where it can be found.**

The DMP has been entered to the CDP tool and uploaded to our website on 18th October where it is to find in "Documents".

**Does the DMP comprise descriptions of all the data generated in the project?**

Yes, there are short descriptions of the data in the CDP tool and download.

**Are the FAIR (Findable, Accessible, Interoperable, Reusable) principles fulfilled? If not, please explain.**

Yes, the DMP considered the FAIR principles as specified in the CDP tool.

1. Have you uploaded a first version of the project's DMP to the DMP group on the OHEJP website?

No, we have not. After the entrance of our data management plan into the CDP tool, the entries were downloaded, and placed as pdf at our BIOPIGEE website on 18<sup>th</sup> October. A pdf of the DMP has been submitted to OHEJP WP3 and Comms Team the same day. We are currently waiting for feedback by the DMP group (announced for January 2021).

2. Have you encountered any problems or difficulties when setting up and updating the DMP? If yes, please specify.

Not in the new tool of CDP which was quite nice to work with, but the downloaded table of the entries was set up in a formate of some shortings in readability. Therefore, we added the plan additionally as a separate file to the deliverable template.



## 7. Follow-up of the recommendations and comments in previous review(s) by the Ethics Advisors

### Projects 2<sup>nd</sup> round

We are waiting for ethical advisors' comments and further instructions on the ethics section.

Requirements of ethical reviewers in 2020	What measures and actions do you propose?	Comments of Ethics Advisors, November2020	Comments Project Leaders, January 2021	Comments of Ethics Advisors, October 2021	Comments Project Leaders, January 2022



## 8. List of critical risks

*Please indicate possible risk within your JRP/JIP*

Description of risk	Yes/No
Loss of key-persons (staff and / or leaders)	YES
Delay in work plan execution	YES
Conflicts within the consortium	No
Lack of commitment of partners	No
Delay in duties, tasks or reporting	No
Poor intra-project relationship	No
Potential entry/exit of partners	No
Other risks (please describe)	YES

### Additional information

#### BfR:

The project leader Chris Kollas left the project (end of June 2020) and tasks were transferred to the deputy Elke Burow who took officially up the lead in autumn 2020. In November 2020, a new second person (Veit Zoche-Golob) was hired, became acquainted with the project, took up part of Elke's WP related tasks and deputy position. These changes have caught some time and there was missing one full person for 4 months.

#### AGES:

Due to the current epidemiological situation in Austria and the related lock-down, which will stay in force at least till December 6, farm visits were postponed to the second week of December. Concerning the lab work, HEV investigations haven't started yet. This was initially due to difficulties in trying to harmonize the protocol to the one used in the project (finding reagents and establishing protocols to ensure standardization). At this stage most of the technical difficulties have been solved, but investigations have been subjected to further delay as the most of the staff is busy with COVID diagnostics.

#### APHA:

COVID-19 restrictions in the UK have meant that visiting farms in high risk tiers, or during lockdown periods, has not been possible. We are trying to mitigate this by seeing if private vets can complete sampling for us during their routine health visits. Additionally, we are finding that farmers are less willing to engage with research during this pandemic, and this is slowing recruitment.

#### WBVR:

Due to the Covid19 pandemic work on this project was delayed at least 6 months. We aim to catch up as soon as possible. However it remains unsure what delays in the end will be.

Several partners are unforeseen involved in the diagnostics of Covid-19 or related tasks. This additional workload can lead to conflicting tasks, change of contact partners when forwarding tasks to colleagues and delayed communication and work between partners. We therefore decided to adhere to our plan of a Midterm meeting (scheduled for 2.-3. March) to offer a room for current topics, strengthening the team and finding solutions in dialogues together - even though it can only be online at the moment. We hope to be able to also physically meet at the end of 2021.



## 9. List of dissemination and communication activities

Name of the activity:	BIOPIGEE Flyer		
Date:	30.06.2020		
Place:	BfR		
Specify the Dissemination and Communication activities linked to the One Health EJP project for each of the following categories			
	Yes / No		Yes / No
Organisation of a Conference	No	Participation to a Conference	No
Organisation of a Workshop	No	Participation to a Workshop	No
Press release	No	Participation to an Event other than a Conference or a Workshop	No
Non-scientific and non-peer-reviewed publication (popularised publication)	No	Video/Film	No
Exhibition	No	Brokerage Event	No
Flyer	Yes	Pitch Event	No
Training	No	Trade Fair	No
Social Media	No	Participation in activities organized jointly with other H2020 projects	No
Website	No	Other	No
Communication Campaign (e.g. Radio, TV)	No		No
Specify the estimated number of persons reached, in the context of this dissemination and communication activity, in each of the following categories			
	Number		Number
Scientific Community (Higher Education, Research)	150	Media	0
Industry	600	Investors	0
Civil Society	0	Customers	100
General Public	100	Other	100
Policy Makers	0		



Name of the activity:	Poster at One Health EJP Annual Scientific Meeting 2020		
Date:	27.-29. May 2020		
Place:	OHEJP ASM 2020		
Specify the Dissemination and Communication activities linked to the One Health EJP project for each of the following categories			
	Yes / No		Yes / No
Organisation of a Conference	No	Participation to a Conference	Yes
Organisation of a Workshop	No	Participation to a Workshop	No
Press release	No	Participation to an Event other than a Conference or a Workshop	No
Non-scientific and non-peer-reviewed publication (popularised publication)	No	Video/Film	No
Exhibition	No	Brokerage Event	No
Flyer	No	Pitch Event	No
Training	No	Trade Fair	No
Social Media	No	Participation in activities organized jointly with other H2020 projects	No
Website	No	Other	No
Communication Campaign (e.g. Radio, TV)	No		No
Specify the estimated number of persons reached, in the context of this dissemination and communication activity), in each of the following categories			
	Number		Number
Scientific Community (Higher Education, Research)	800	Media	0
Industry	0	Investors	0
Civil Society	0	Customers	0
General Public	0	Other	0
Policy Makers	0		0