



## Incursion of Peste des Petits Ruminants (PPR) into the European Union for the first time

### Key points

- Bulgaria has reported PPR outbreaks in two villages close to the Turkish border
- This is the first time that PPR has been reported inside the EU
- PPR is a severe viral disease of sheep and goats with high morbidity and mortality
- PPR is predominantly transmitted through direct or aerosol contact with infected animals
- No live animals, germinal products and products of animal origin can be dispatched from affected regions
- There is currently very little risk of a PPR incursion into Ireland but the NDCC will continue to monitor the situation
- As well as being a serious disease for the EU in its own right, the PPR incursion is of concern because it highlights the potential for incursions of other exotic diseases into the EU

### Emergence of PPR and incursion into EU for first time

PPR has been reported for the first time within the EU in Bulgaria. PPR is a severe viral disease of sheep and goats which is transmitted primarily via direct contact. Morbidity and mortality due to PPR can be very high, especially in areas where PPR occurs for the first time, and it has serious economic impacts in the agricultural sector. PPR is not transmissible to humans. Since the first report of PPR on the Ivory Coast in 1942, it has emerged over a widening geographic range and is currently endemic in many countries of Africa, the Middle East and Asia ([OIE 2018a](#)), and it is of great concern for animal health and welfare in these countries. There have been recent PPR outbreaks reported near the EU (in North Africa, Turkey and Georgia).

### Clinical signs and control measures

PPR virus is a morbillivirus related to rinderpest. Clinical signs include fever, depression, nasal discharge (Figure 1), conjunctivitis (red and discharging eyes), necrotic stomatitis (Figure 2, sloughing of mucous lining of the mouth), severe diarrhoea and respiratory signs (coughing and rapid breathing). Mortality rates vary but can reach 50-100% in susceptible populations. Please see the [FAO field manual](#) and [OIE disease card](#) for PPR for more details. In the wake of global rinderpest eradication, and given PPR's impacts on the rural poor, there is an [international campaign](#) led by the OIE and FAO to eradicate PPR by 2030. There are four lineages of PPR virus variants, and there is an effective live attenuated vaccine available. However, it is not currently possible to differentiate vaccinated from infected animals. For this reason, and as PPR is an exotic notifiable disease, PPR control in the EU is based on eradication, according to [European legislation Directive, 92/119/EEC](#).



**Figure 1: Conjunctivitis (inflamed tissues around eye and discharge from eye) and nasal discharge in a goat with PPR. Source: [FAO \(1998\) Recognising peste des petits ruminants](#). A field manual. Rome, Italy: *Food and Agriculture Organisation (FAO)*.**



**Figure 2: Necrotic stomatitis (sloughing of mucous lining of the mouth) in a goat with PPR. Source: [FAO \(1998\) Recognising peste des petits ruminants](#). A field manual. Rome, Italy: *Food and Agriculture Organisation (FAO)*.**

### PPR in Bulgaria

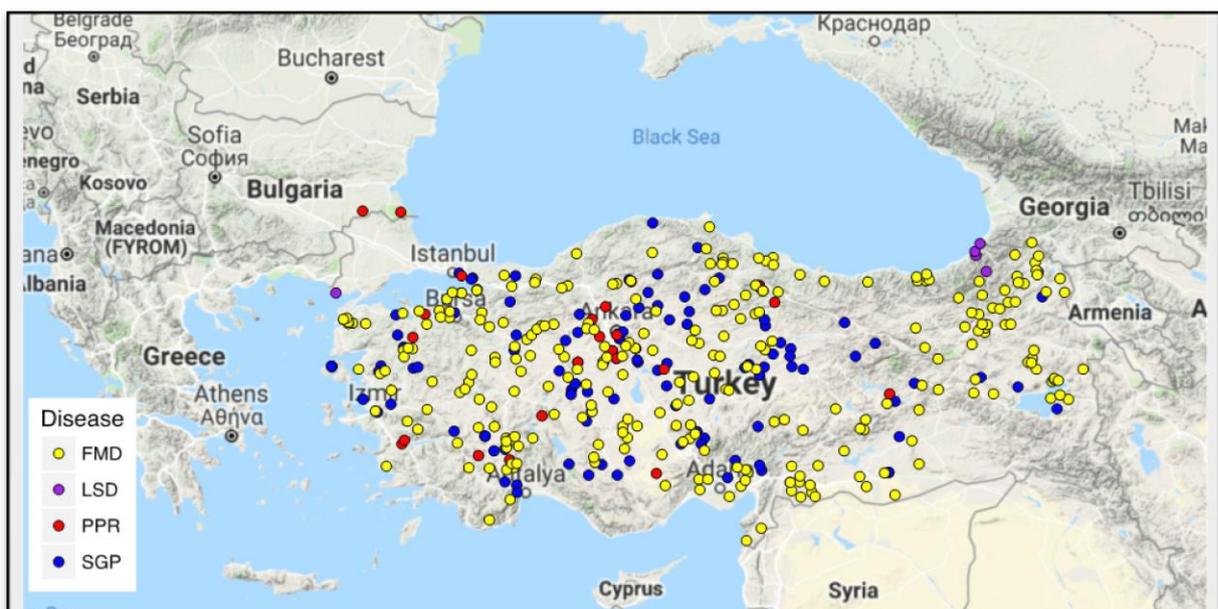
Since the 23<sup>rd</sup> of June the Bulgarian authorities have reported **six PPR outbreaks** in sheep and goat herds in the villages of Voden and Kosti in the Burgas and Yambol regions respectively. These villages are very close to the border with Turkey where PPR is endemic. Up to the 2<sup>nd</sup> of July 2018, three herds that grazed together in Voden (confirmed on 23/6/18) and one further herd in Kosti (confirmed on 28/6/18) were reported to be affected. All of the small ruminants in the affected villages were culled in an effort to stop disease spread. Three and ten kilometre protection and surveillance zones were implemented and as a result of surveillance carried out in these zones four further outbreaks were detected in the village of Voden.

A commission implementing decision (2018/911) which was introduced to control the outbreak dictates that no live animals, germinal products and products of animal origin are dispatched from affected regions to other parts of Bulgaria, or other countries.



## Potential routes of transmission into EU and relevance for other diseases

The route of introduction of PPR into Bulgaria is unknown as yet. PPR is predominantly transmitted via direct or aerosol contact with infected animals, although transmission via fomites and contaminated products cannot be ruled out. Virus is secreted in all secretions or excretions of infected animals ([EFSA 2015](#)). The majority of countries where PPR is present are also endemic for Sheep and Goat Pox (SGP). It is illegal to import live sheep and goats from SGP affected countries (including Turkey and North African countries) into the EU. Possible routes of introduction of PPR to Bulgaria include illegal movements of domestic sheep or goats and movements of feral small ruminants or potentially susceptible wildlife (e.g. chamois). Turkish Thrace is an important barrier to the incursion of exotic diseases into the EU. For example, there are surveillance and control programmes for foot-and-mouth disease (FMD), lumpy skin disease, SGP and PPR there ([EuFMD 2018](#)). Turkish Thrace is recognised as being free from FMD with vaccination. Transboundary disease incursions to the EU through this barrier are of concern, not just for the case of PPR but for other diseases, especially FMD which is endemic in Turkish Anatolia. This is further evidenced by repeated incursions of SGP into Greece and Bulgaria (most recently on the Greek island of Lesvos near the Turkish coast in June 2018). Please see Figure 3 below for a map showing PPR and other transboundary diseases in Turkey, Bulgaria and Lesvos.



**Figure 3: Outbreaks of foot-and-mouth disease (FMD), lumpy skin disease (LSD), peste des petits ruminants (PPR) and sheep and goat pox (SGP) reported in Turkey and the EU between 1<sup>st</sup> January 2018 and 5<sup>th</sup> July 2018. Two PPR outbreaks in Bulgaria are shown as well as a SGP outbreak on the Greek island of Lesvos. (Modified from Google maps).**

## Risk to Ireland

PPR virus does not survive for long in the environment outside the animal unless in chilled or frozen tissues (half-life calculation of 2 hours at 37 C), and animals are predominantly infected via droplets or aerosols from an infected animal ([OIE 2018b](#), [EFSA 2015](#)). Therefore, infected sheep and goats form the most likely way that PPR could be introduced to a free country ([EFSA 2015](#)). According to the EU trade notification system (TRACES), there have been no consignments of live sheep or goats or the semen or embryos of such species from Bulgaria to Ireland in 2018. Import of live sheep and



goats from PPR endemic countries (which are also endemic for SGP) into the EU is illegal. The [European legislation Directive, 92/119/EEC](#) and Implementing Decision (911/2018) control the movements of sheep and goats and their products from PPR affected areas in Bulgaria.

PPR virus introduction is possible through illegally imported infected animal products but further spread of PPR via this route is unlikely. PPR virus could also theoretically be introduced via contaminated vehicles or equipment (e.g. when vehicles carrying livestock return to the EU after the delivery of animals in infected areas or farms and where no biosecurity measures are applied) but is unlikely due to poor survival of PPR virus in the environment.

For these reasons, there is currently very little risk of a PPR incursion into Ireland but the NDCC will continue to monitor the situation. Please see a recent PPR risk assessment by the Department for Environment, Food and Rural Affairs ([DEFRA 2018](#)) for further information.

### Further resources

**DEFRA (2018)** Preliminary Outbreak Assessment for Peste de Petits Ruminants in Bulgaria  
25th June 2018

<https://www.gov.uk/government/publications/peste-de-petits-ruminants-ppr-in-sheep-in-bulgaria>

**EFSA (2015)** Scientific Opinion on Peste de Petits Ruminants

<https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2015.3985>

**EuFMD (2018):** European Commission for foot-and-mouth disease control website:

<http://www.fao.org/ag/aqainfo/commissions/eufmd/commissions/eufmd-home/en/>

**FAO (1998)** Recognising peste des petits ruminants. A field manual. Rome, Italy: *Food and Agriculture Organisation (FAO)*.

<http://www.fao.org/docrep/003/x1703e/x1703e00.HTM>

**OIE (2018a):** OIE webpage on PPR distribution:

<http://www.oie.int/animal-health-in-the-world/ppr-portal/distribution/>

**OIE (2018b)** PPR Disease Technical Cards

[http://www.oie.int/fileadmin/Home/eng/Animal\\_Health\\_in\\_the\\_World/docs/pdf/Disease\\_cards/PESTE\\_DES\\_PETITS\\_RUMINANTS.pdf](http://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/PESTE_DES_PETITS_RUMINANTS.pdf)

**OIE (2018c)** Terrestrial Animal Code, Chapter 14.7 Infection with Peste de Petits Ruminants Virus.

[http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre\\_ppr.htm](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_ppr.htm)

**Parida, S., Muniraju, M., Altan, E., Baazizi, R. & Dhinakar, G. (2016).** Emergence of PPR and its threat to Europe. *Small Rumin Res* **142**, 16–21. Elsevier B.V.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5035059/>

### NDCC and Border Inspection Posts

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