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| --- | --- |
| Logo AGES | |
| Peste des petits ruminants (PPR) | |
|  |  |
| 09.05.2025 14:36 Uhr | |

**Peste
des
petits
ruminants
(PPR)**

**PPR**

Last
change:
02.08.2024

**Profile**

The
plague
of
small
ruminants
(peste
de
petits
ruminants,
PPR)
is
a
highly
contagious,
acute,
highly
febrile
viral
infection
of
sheep
and
goats.
Occasionally,
other
cloven-hoofed
animals
also
contract
the
disease.
Humans
cannot
become
infected.

**Occurrence**

Small
ruminant
plague
is
endemic
in
Africa,
the
Middle
East,
Central,
Central
and
East
Asia.
There
are
regular
outbreaks
in
North
Africa
and
Turkey.
In
Europe,
the
first
outbreak
was
reported
in
Bulgaria
in
June
2018.
Outbreaks
were
reported
in
Greece
and
Romania
in
2024.

**Host
animals**

Sheep
and
goats,
but
also
domestic
cattle,
buffalo,
wild
ruminants
(e.g.
deer,
stone
deer,
gazelles,
antelopes),
dromedary,
pigs.
Domestic
cattle
and
buffalo
are
susceptible,
but
they
do
not
excrete
the
virus
and
show
no
symptoms
of
the
disease.
However,
seroconversion
does
take
place.

**Infection
route**

Mainly
through
close
direct
contact
with
infected
animals
or
their
excreta,
also
via
the
air
(aerogenic)

**Incubation
time**

4
to
5
days

**Symptomatology**

High
fever
(40
to
41.5
°C),
anorexia,
constipation,
nasal
and
eye
discharge,
severe
diarrhoea,
pneumonia,
weight
loss,
loss
of
fertility,
reduced
milk
production,
death

**Therapy**

There
is
no
therapy

**Prevention**

There
is
currently
no
vaccine
licensed
in
Europe
to
control
the
disease.

**Situation
in
Austria**

The
plague
of
small
ruminants
has
never
occurred
in
Austria.

**Specialist
information**

Small
ruminant
plague
is
an
animal
disease
of
small
ruminants,
sheep
and
goats.
Goats
are
usually
more
seriously
affected
than
sheep,
with
a
large
proportion
of
the
herd
often
affected.
Young
animals
are
more
severely
affected
by
this
disease
than
older
animals.
However,
other
cloven-hoofed
animals
such
as
domestic
cattle,
buffalo,
wild
ruminants
(e.g.
deer,
stone
deer,
gazelles,
antelopes)
and
dromedaries
are
also
affected.
Some
of
these
even-toed
ungulates
often
show
no
symptoms
of
the
disease
(e.g.
domestic
cattle).
Domestic
cattle
and
buffalo
do
not
excrete
the
virus,
but
seroconversion
does
take
place.
Wild
ruminants
and
dromedaries
can
excrete
virus.
In
Mongolia,
there
was
a
disease
outbreak
with
high
mortality
in
saiga
antelopes
in
2017.
Experimental
infection
trials
have
shown
that
European
pigs
are
susceptible
to
this
virus,
show
clinical
signs
of
the
disease
and
are
capable
of
transmitting
the
disease
to
small
ruminants
with
which
they
come
into
contact.  
  
Small
ruminant
plague
is
characterised
by
high
morbidity
and
mortality
rates
(90
to
100
%
are
possible),
especially
in
countries
where
it
first
occurs.
It
causes
high
economic
losses,
as
the
herd
has
to
be
culled
if
infected.
Infected
carcasses
must
be
destroyed
and,
like
raw
milk
products
from
infected
animals,
may
not
be
traded.  
  
The
causative
agent
of
small
ruminant
plague
is
the
Peste
de
Petits
Ruminants
virus
(PPRV)
or
Small
Ruminant
Morbillivirus
(SRMV),
a
paramyxovirus
(genus
Morbillivirus),
which
is
genetically
closely
related
to
the
causative
agent
of
rinderpest,
the
Rinderpest
virus
(RPV).
Although
there
is
an
antigenic
relationship
to
RPV,
PPRV
can
be
clearly
distinguished
from
it.
The
PPRV
serotype
is
divided
into
4
different
genotypes
(I-IV).

**Occurrence**

The
plague
of
small
ruminants
is
endemic
in
Africa,
the
Middle
East,
Central,
Central
and
East
Asia.
PPRV
lineage
IV
has
recently
spread
widely
in
Asia
(e.g.
China,
Nepal,
India,
Pakistan)
and
Africa
(from
the
north
to
Tanzania).
There
are
outbreaks
in
Turkey
every
year
(2005-2024).
In
Europe,
the
first
outbreak
was
reported
in
Bulgaria
in
June
2018.

**Transmission**

Transmission
mainly
occurs
through
close
direct
contact
with
infected
animals
or
their
faeces,
but
can
also
occur
aerogenically
via
the
respiratory
tract.
Virus
excretion
is
possible
before
the
development
of
clinical
symptoms.
It
occurs
via
the
lacrimal
fluid,
nasal
and
pharyngeal
secretions
and
faeces.
The
urine
and
saliva
of
goats
also
contain
viruses.
The
virus
can
be
detected
in
the
faeces
of
goats
up
to
2
months
after
recovery.
Animals
that
survive
PPR
infections
are
immune
to
reinfection
as
well
as
to
other
genotypes.  
  
Transmission
of
PPRV
via
raw
milk
from
goats
has
been
proven
on
the
basis
of
scientific
studies
(outbreak
in
Bangladesh
2012-2015).

There
is
no
vertical
transmission
of
PPRV
via
the
placenta.

**Symptomatology**

Goats
and
sheep,
cattle,
pigs,
wild
ruminants
are
susceptible.
The
plague
of
small
ruminants
is
usually
more
dramatic
in
goats
than
in
sheep
and
leads
to
death
in
100%
of
goat
kids
(older
than
4
months,
which
are
no
longer
protected
by
maternal
antibodies).
In
cattle
and
some
wild
ruminants,
the
virus
causes
a
subclinical
disease.
High
morbidity
and
variable
mortality
are
typical
for
PPR.
The
general
mortality
rate
varies
between
10
and
90
%.  
  
The
incubation
period
is
4-5
days,
after
which,
from
the
6th
day
onwards,
high
fever
is
observed.
A
distinction
can
be
made
between
a
prodromal
and
an
erosive
phase.  
  
The
**prodromal
phase**,
which
predominantly
shows
symptoms
of
a
general
illness,
can
last
3
days
and
can
be
accompanied
by
ulcerative-necrotising
inflammation
in
the
oral
cavity
and
gums.
The
affected
animals
usually
show
a
high
fever
of
between
40
and
41.5
°C.
Other
important
clinical
manifestations
are
anorexia,
constipation,
serous
nasal
and
ocular
discharge,
severe
diarrhoea
and
pneumonia.
The
watery
nasal
and
ocular
discharge
causes
crusts
to
form
on
the
eyes
and
nostrils.  
  
At
the
beginning
of
the
**erosive
phase**,
erosions,
ulcers
and
necrosis
of
the
oral
mucosa
develop.
Erosions
can
sometimes
be
detected
in
the
entire
gastrointestinal
tract
(often
with
a
stripe-like
pattern
"zebra
stripes").
Occasionally,
pneumonia
also
occurs.
It
is
characterised
by
bronchointerstitial
pneumonia
with
evidence
of
viral
cytoplasmic
inclusion
bodies
and
syncytia.  
  
In
highly
susceptible
animals,
both
acute
and
peracute
forms
occur,
leading
to
immediate
death
shortly
after
the
prodromal
phase.
Conversely,
there
is
also
a
chronic
form,
which
is
usually
triggered
by
weakly
virulent
viruses.
It
causes
barely
visible
lesions
to
very
pronounced
nodular
proliferations
in
the
mouth
area.  
  
Due
to
the
outbreak
in
Bulgaria,
a
laboratory
diagnostic
examination
via
the
exclusion
diagnostics
or,
in
the
case
of
suspicion,
a
suspicion
dispatch
via
the
official
veterinarian
is
also
indicated
in
the
case
of
similarly
occurring
individual
symptoms.
As
the
disease
has
never
occurred
in
Austria
and
the
symptoms
are
hardly
known,
a
diagnosis
of
exclusion
is
also
indicated
if
individual
symptom-like
changes
occur
in
the
herd.

Differential
diagnosis:
All
erosive
or
vesicular
skin
and
mucous
membrane
diseases
of
ruminants
with
severe
disturbance
of
the
general
condition,
e.g.
sheep
and
goat
pox,
cold
sores,
foot
and
mouth
disease,
bluetongue,
contagious
caprine
pleuropneumonia,
pasteurellosis,
salmonellosis,
coccidiosis.

**Preventive
measures**

With
the
exception
of
the
vet,
unauthorised
persons
should
not
be
allowed
to
enter
the
barn.
Pets
(dogs,
cats)
should
also
be
prevented
from
entering.  
Strict
hygiene
and
biosecurity
measures
apply
to
all
persons
entering
the
barn
-
these
must
be
strictly
adhered
to.  
As
a
precautionary
measure,
no
foreign
animals
whose
health
status
is
not
known
should
be
introduced
into
the
herd
immediately.
A
quarantine
period
of
3-4
weeks,
as
well
as
enquiring
about
possible
disease
in
the
flock
of
origin,
can
significantly
reduce
the
risk
of
disease
being
introduced
into
the
flock.
The
spread
and
transmission
of
PPR
through
animal
traffic
in
regions
with
non-vaccinated
animal
populations
played
a
major
role
in
Turkey.  
  
The
FAO
and
WOAH
are
endeavouring
to
eliminate
the
disease
by
2030.
There
is
currently
no
vaccine
authorised
in
Europe
to
combat
the
disease.
Live
attenuated
vaccines
(e.g.
based
on
the
Nigeria-75/1
strain)
are
used
outside
Europe
(e.g.
in
Turkey)
in
areas
where
the
disease
is
endemic.
Currently,
all
newborn
and
unvaccinated
adult
small
ruminants
are
vaccinated
annually
in
Turkey.
Seroconversion
rates
were
93%
in
2018
and
84%
in
2020.

**Diagnostics**

Virus
detection
can
be
carried
out
early
after
infection,
from
highly
febrile
animals
and
animals
with
incipient
mucosal
lesions.
Samples
for
serological
testing
can
be
taken
as
early
as
6
days
after
infection.

Sample
for
live
animals:

* Swab
  samples
  of
  nasal,
  eye
  and
  throat
  secretions
  (no
  bacteriological
  swab
  transport
  media)
* Blood
  (EDTA/heparin)
  and
  serum

Samples
from
dead
animals:

* Whole
  animal
  carcasses
  or
  organs
  such
  as.
* Lymph
  nodes
  (especially
  mesenteric
  lymph
  nodes)
* spleen
* lungs
* intestine

Sample
transport
and
short-term
storage
at
+4
°C  
  
Detection
methods:

* Direct
  virus
  detection:
  molecular
  biological
  methods,
  virus
  isolation
* Indirect
  virus
  detection
  (antibody
  detection):
  ELISA

**Contact**

**National
reference
laboratory
for
plague
of
small
ruminants**

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