BTSF ACADEMY

Surveillance and monitoring of SPP and GTP

BTSF on Sheep & Goat Poxvirus

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- Epidemiological surveillance for detection of animal diseases
- Legal basis by surveillance activities on SGPV
- Passive surveillance for SGPV, main symptoms and injuries
- Enhancement of active surveillance during outbreaks
- Awareness to increase passive surveillance

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Objectives of any surveillance system (applicable to SGPV):

- **Demonstrate the absence of a disease**, for health or commercial purposes.
- **Detect** as soon as possible the presence of **exotic or emerging diseases**, in order to adopt rapid and effective control measures.
- **Monitor the evolution** of animal diseases in a population, facilitate their control, provide the necessary data for risk analysis within the framework of animal health or public health objectives, justify health measures and provide guarantees to trading partners.

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Choice of diseases under surveillance, criteria:

- **Mandatory Declared Diseases:** mandatory surveillance to ensure absence/monitoring prevalence evolution.
- **Importance and impact of a disease in a country,** impact on animal health, export vocation...

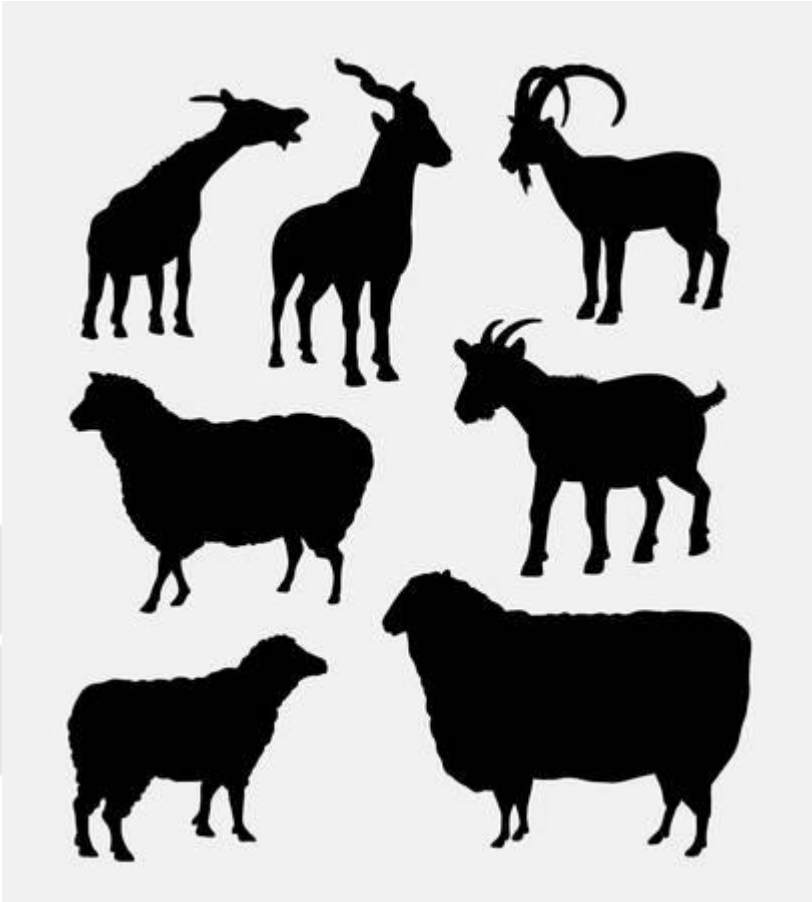
BTSF Design of a surveillance system for SGPV

- **Appropriate use of the information generated** according to the objectives set
  - Demonstrate absence of disease
  - Early detection
  - Monitor prevalence evolution
- **Objectives based on different factors**:
  - Impact of the disease on the sheep and goat sector and the national/European economy
  - Cost/benefit of the monitoring system
  - Financial and personal resources available
  - Tracking capacity

BTSF Design of a surveillance system for SGPV

1. Stocks:

- Take into account all **animal species susceptible** to infection present in the territory under surveillance: **sheep, goat**.
- Surveillance **of all individuals** in the population **or a part**.
- Sub-**population surveillance**: definition of the extent to which it is representative of the target population established.
- Based on recommendations established in the Terrestrial Animal Health Code.



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BTSF Design of a surveillance system for SGPV

2. Timing and temporal validity of surveillance data:
take into account:

- ✓ objectives of surveillance
- ✓ introduction and propagation risks
- ✓ farming practices and production systems in sheep and goats: extensive production, intensive pastures/fatening holdingsf/milk holdings
- ✓ geographical factors

3. Case definition: Any animal infected with sheep and caprine smallpox virus, with or without clinical symptoms

BTSF Design of a surveillance system for SGPV

4. Epidemiological unit:

- Holding; Municipality; Wider territory (comarca, province, etc)

5. Test samples and diagnostic tests:

- Sensitivity vs specificity; According to the WOAH Diagnostic and Vaccination Manual

6. Analytical methodology:

- Based on the best information available; Transparency, impartiality and rationality, consistency in decision-making and ease of understanding; Document the doubts and assumptions that are formulated and the effects they may have on the final conclusions.

7. Scope of the monitoring system

8. Follow-up actions

BTSF Implementing a surveillance system for SGPV

1. Organisation of its components

- ✓ Staff involved
- ✓ Coordination Unit(s)
- ✓ Protocol in passive surveillance (communication and organisation in the event of suspicion)
- ✓ Active surveillance logistics (sampling planning)
- ✓ Dissemination of information to participants
- ✓ Monitoring and monitoring unit

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BTSF Implementing a surveillance system for SGPV

2. Samples and diagnostic tests:

- Salivary swabs, tissue samples from lesions; blood, serum
- Sensitivity, specificity of techniques (virological, serological)
- According to the WOAH Diagnostic and Vaccination Manual

3. Data collection and management factors affecting:

- Distribution and participation of personnel or authorities responsible for data collection
- Ability of the processing system to detect data failures
- Retention of disaggregated data
- Minimised transcription errors during your communication

BTSF Implementing a surveillance system for SGPV

4. Quality assurance of the proper functioning of the data collection and communication system

Assessment of monitoring systems:

- **Qualitative**: evaluation by evaluation of the functioning of the system based on indicators of effectiveness.
- **Quantitative**: evaluation by score of specific components of the monitoring system.

BTSF Types of surveillance systems for SGPV

- **PASSIVE SURVEILLANCE:** notification and immediate communication of any suspicion upon recognition of any signs compatible with SGPV by the livestock or veterinary sector
  - Communication of suspected cases identified accidentally/casually.
  - Passive surveillance situations: clinical suspicions.
- **ACTIVE SURVEILLANCE:** search for SGPV detection in a sheep/caprine population by targeted analysis based on risk factors.
  - Random or strategic/planned sampling
  - Holdings identified with epidemiological links to other suspicious/confirmed SGPV holdings, as well as holdings with non-negative samples during laboratorial analysis.
  - Identification of risk factors: holdings, movements, vectors...

BTSF Legal basis for surveillance of SGPV

- **Regulation (EU)** 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending or repealing certain acts in the field of animal health (‘Animal Health Law’)

- **Implementing Regulation (EU) 2018/1882: SGPV category A+D+E** Necessary surveillance system against it.

- **Commission Delegated Regulation (EU)** 2020/689 of 17 December 2019 [...]on surveillance rules, eradication programs and disease-free status for certain listed and emerging diseases

- **Commission Delegated Regulation (EU)** 2020/690 of 17 December 2019 [...] to the listed diseases subject to Union surveillance programs, to the geographical scope of those programs and to the listed diseases for which the disease-free status of compartments may be established

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BTSF Legal basis for surveillance of SGPV

DELEGATED REGULATION (EU) 2020/689:

- *The CA shall **monitor the presence of EU listed diseases and relevant emerging diseases**. Such surveillance shall be carried out in such a way as to ensure the timely detection of the presence of listed diseases for which there is a need for EU surveillance and also for emerging diseases, by collecting, comparing and analysing relevant information relating to the health situation.*

- ***The design, means, diagnostic methods, frequency, intensity, target animal population and sampling patterns of surveillance shall be appropriate and proportionate to their objectives**, taking into account: (1) the disease profile, (2) the existing risk factors, (3) the health status of the MS, the zone or compartment under surveillance, of the Member States and the third countries or territories bordering that MS, zone or compartment or from which animals and products entering the latter come, (4) surveillance carried out by operators, animal health visits or other public authorities.*

- *The CA shall exercise surveillance under a **"surveillance programme"** where a disease is relevant to the EU. Member States developing a monitoring programme shall submit it to the EOC. Member States implementing a monitoring programme shall send regular reports to the COE on the results of the implementation of that programme.*

BTSF Passive surveillance

- Health surveillance is any activity that aims to know the state of health/disease of a target population.
- When surveillance is done taking advantage of information from other activities we call it unique passive surveillance capable of detecting early entry of diseases not previously present (indicated for SGPV and other NADs)/cheap/continuous/covers the entire target population.
- Veterinarians, farmers, shepherds, etc, in continuous contact with the animals have a critical role in passive surveillance.

Reporting obligation for diseases that are notifiable

BTSF Requirements for passive surveillance

- Knowledge on the part of the agents involved about the clinical signs and lesions of the disease.
- Awareness of the agents involved regarding the impact and the need for immediate communication of compatible signs and injuries.
- Immediate communication to OVS of suspicion coinciding with the definition set out in the practical SGPV operations manual.
- Investigation by the OVS immediately of suspicions and taking of official samples.
- Reliable and rapid laboratorial diagnosis to confirm or rule out suspicion.

Critical step: Immediate communication to OVS of suspicion coinciding with the definition contained in the practical SGPV operations manual

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Passive surveillance: key pillar for SGPV detection

- Detection of compatible symptoms and lesions.

Onset of clinical symptomatology slowly after the virus enters a holding (few initially sick and symptomatic animals). After explosive appearance at 5-6 days, with a condition of much of the exploitation census.

- Holdings linked epidemiologically to outbreaks

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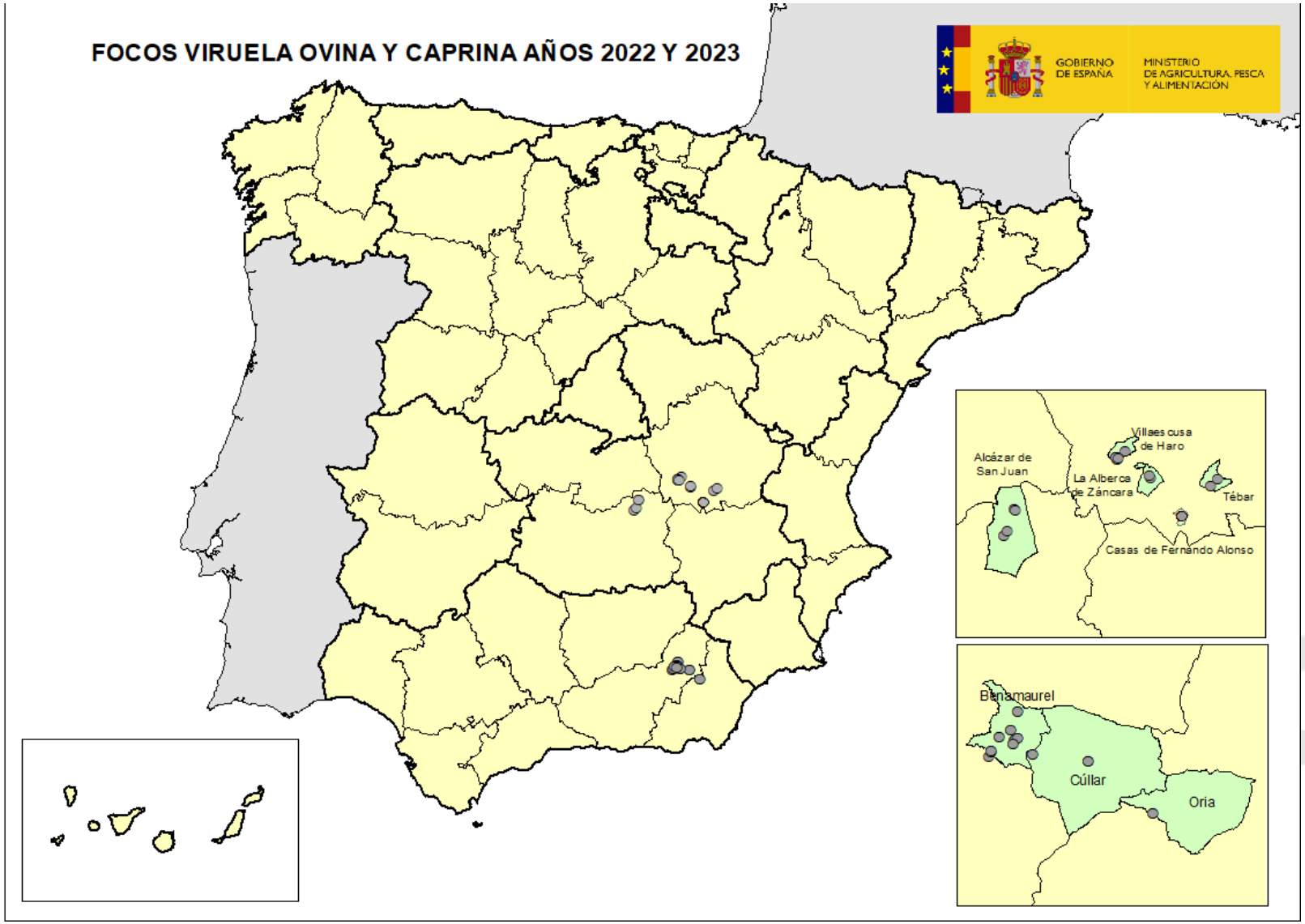

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Passive surveillance: suspicious results after last outbreak

AACC	No. suspicions	EDTA Blood	Oral swabs	Serum
Andalucía	2	4	8	0
Castilla-La Mancha	17	0	69	57
Castilla y León	1	69	69	0
Catalonia	2	30	30	10
Madrid	3	13	13	4
Extremadura	1	7	7	7
Total	**26**	**123**	**196**	**78**

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BTSF Passive vs active surveillance

Passive (reactive)	Active (proactive)
Animal owners, practitioners, general public reported an animal health problem(s) Individual animals belonging to the “Suspect case definition” are reported and tested	The Veterinary Service collects animal health data using a defined protocol to perform action that are scheduled in advance A population or a part of it (risk based) is actively investigated to detect an infection

BTSF Passive vs active surveillance

Passive is better when	Active is better when
▪ An official “suspect case” definition is available and well known among stakeholders ▪ Evident clinical symptoms ▪ High lethality rate ▪ High animal owners awareness ▪ High Veterinary Service awareness	▪ Clinical symptoms are not evident, episodic or short lasting ▪ Low/null lethality rate ▪ Low animal owners awareness

BTSF Virus surveillance

It is important for early detection, differential diagnosis and for systematic sampling of target populations. It should be conducted:

- ✓ to investigate clinically suspected cases
- ✓ to monitor at risk populations
- ✓ to follow up positive serological results
- ✓ Sentinel animals (to confirm eradication after stamping-out)???

BTSF Serological surveillance

Serological surveillance aims at detecting antibodies against SGPV.

Positive SGPV antibody test results can indicate an ongoing or past outbreak, if some animals recover they may remain seropositive for life.

Serology is not suitable for Early Detection

BTSF Surveillance in the PZ and SZ

- Surveillance activities in the implemented PZ and SZ after outbreaks of SGPV (and other NADs) are regulated in **Delegated Regulation (EU) 2020/687**, Part II, Section 2 and 3
- **Surveillance in the PZ**: all establishments in the zone should be visited as early as possible by OVS in order to detect any further spread of the disease. In addition, all farmers should increase biosecurity and ensure proper passive surveillance
- **Surveillance in the SZ**: a representative number of establishments in the SZ would be visited by the OVS as early as possible, with priorisation based on risk criteria (census, type of holding, usual movements, BSC conditions…)

BTSF Reinforced epidemiological surveillance after SGPV outbreaks

— Passive surveillance reinforcement: increase the level of awareness and awareness for better detection and agile communication of suspicions and compatible cases

— Active surveillance reinforcement: to facilitate the detection of possible cases in the vicinity of the outbreaks. Sampling strategies adapted to the changing epidemiological situation and the detection of cases in or outside restricted areas.

BTSF Reinforcement of active surveillance

- Main objective: increase the capacity to detect possible new cases that were not well detected/communicated by farmers or veterinarians
- Complementary tool to passive surveillance
- Planning visits to target holdings, in an orderly manner and prioritised according to risk criteria
- Active surveillance carried out and adapted in several phases.

BTSF Reinforcement of active surveillance in PZ and SZ

- Initially it visits and systematic sampling of all the holdings located in the PZ, within a radius of 5 km around the focus holdings.
- In SZ, prioritisation of holdings based on risk criteria.
- Subsequently, the surveillance radius is extended to 10 km to increase detection capacity and provide health guarantees.
- Salivary swab sampling and virological analysis (PCR-RT) at NRL for detection of active viral circulation.
- Serology not indicated, as it would reflect a late detection of the case.
- Following the favourable epidemiological evolution, relaxation of active surveillance visits of holdings located within a radius of 10 km by OVS and sampling only for detection of compatible symptoms.
- Several rounds of farm visits (with intermediate periods of minimum duration of an incubation period of the disease)

BTSF Biosecurity in PZ and SZ

- Organisation of visits to farms located in the PZ and SZ, prioritised on the basis of risk criteria.
- Reinforcement of biosecurity measures during visits (exhaustive procedure for the establishment of disinfection point, change of clothing and footwear, minimum handling and contact of animals, etc.).
- Organisation of visiting teams: wait at least 72 hours between visits to different holdings to minimise risk of accidental viral diffusion.

Reinforcement of active surveillance
Early Laboratorial Detection

- Ability to detect viral genome in salivary swab samples in some cases very early, even before symptoms appear
- Cost/benefit assessment complex and expensive process, only two outbreaks detected by this system
- Finally, in the face of favorable epidemiological evolution, flexibility only taking samples and analysis before detection of symptoms and compatible lesions (passive surveillance)

BTSF Reinforcement of active surveillance Analytical results

Autonomous Community	Specie	Number of inspected farms	Bucal swabs	EDTA Blood	Skin lesion	Serum
Andalucía	Ovine	67	4081	877	38	432
	Caprine	17	275	354	0	124
Castilla - la Mancha	Ovine	322	33785	138	53	980
	Caprine	13	1482	0	0	0
TOTAL	**Ovine**	**389**	**37866**	**1015**	**91**	**1412**
	Caprine	**30**	**1757**	**354**	**0**	**124**

BTSF Reinforcement of passive surveillance

MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

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Inicio > Ganadería > Sanidad animal e higiene ganadera > Sanidad animal > Enfermedades > **Viruela ovina/caprina**

- **Sanidad animal**
  - **Enfermedades**
  - Bioseguridad y buenas prácticas
  - Consulta de focos
  - Formación
  - Gestión de alertas sanitarias
  - Vigilancia de zoonosis y resistencias antimicrobianas

Viruela Ovina y Caprina

En esta página

- Ficha de la enfermedad
- Marco Reglamentario
- Manual práctico de operaciones
- Información epidemiológica sobre la situación de la enfermedad
- Vigilancia pasiva para la detección temprana de la Viruela Ovina y Caprina
- Viruela Ovina y Caprina en otros medios

Documentación sobre la Viruela Ovina y Caprina

- Folleto informativo sobre VOC 2,56 MB
- Información actualizada sobre la detección de focos de viruela ovina y caprina en España

Ficha de la enfermedad

La Viruela Ovina y Caprina es una enfermedad infecto-contagiosa producida por ur
perteneciente al género *Capripoxvirus* dentro de la familia *Poxviridae*. Produce un
en ganado ovino y caprino caracterizado por la aparición de fiebre, nódulos y pápu
generalizadas, raramente vesículas, lesiones internas particularmente en pulmone
finalmente, la muerte.

Virus de la familia *Poxviridae*, género *Capripoxvirus*

Enfermedad de declaración obligatoria (RD 526/2014), (ver infografía)

De acuerdo a la actual normativa en vigor, se notificará la detección de focos de la
de acuerdo al Reglamento de Ejecución (UE) 2020/2002 de la Comisión, de 7 de di
2020, por el que se establecen normas de desarrollo del Reglamento (UE) 2016/42
Parlamento Europeo y del Consejo relativas a la notificación a la Unión y al envío d
la Unión sobre enfermedades de la lista, al sistema informático de información, as
formatos y los procedimientos de presentación y envío de informes relacionados c

MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

DIRECCIÓN GENERAL DE SANIDAD DE LA PRODUCCIÓN AGRARIA

SUBDIRECCIÓN GENERAL DE SANIDAD E HIGIENE ANIMAL Y TRAZABILIDAD

INFORMACIÓN ACTUALIZADA SOBRE DETECCIÓN DE FOCOS DE VIRUELA OVINA Y CAPRINA EN ESPAÑA (29.09.2022)

La intensificación de la vigilancia llevada a cabo por los Servicios Veterinarios Oficiales (SVO) a raíz de la notificación el pasado 22 de septiembre de la presencia de virus de Viruela Ovina y Caprina (VOC) en una explotación de ovino en el municipio de Benamaurel, provincia de Granada, ha permitido la **confirmación de un total de nueve focos de la enfermedad: tres en provincia de Granada y seis en la provincia de Cuenca** (ver mapa 1).

Mapa 1: localización de las explotaciones afectadas por VOC (fuente: RASVE)

LA VIRUELA OVINA Y CAPRINA

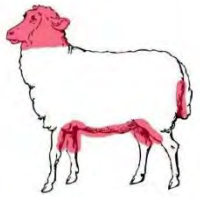
ES UNA ENFERMEDAD MUY GRAVE QUE HA APARECIDO EN ESPAÑA Y AFECTA A GANADO OVINO Y CAPRINO

EN NINGÚN CASO SE TRANSMITE A LOS SERES HUMANOS

¿Cómo podemos saber si nuestras ovejas o cabras pueden haber contraído la enfermedad?

1 **Examine diariamente a los animales de su granja; principalmente las ovejas, pero también las cabras**

> En la **cabeza**
> En el **abdomen**
> En el **pecho**
> En las **axilas**
> En el **área genital**
> En la **base y bajo la cola**
> En el **muslo**
> En **cualquier otra parte del cuerpo del animal sin pelo**



2 **Buscar cuidadosamente lesiones de estos tipos:**
Enrojecimiento, vesículas llenas de líquido, o bien rotas con puntos rojos de la piel, otras heridas, lesiones cicatrizadas en forma de puntos negros, llagas


Oveja con extensas lesiones en forma de pápula (similares a granos rojos) distribuidos por todo el cuerpo, en especial en la zona del abdomen


Lesiones en forma de pápulas en la base y debajo de la cola


Lesiones granulares en forma de pápula



Lesiones características en órganos internos (hígado, pulmón...)


Lesiones erosionadas y en fase de cicatrización en el hocico


Lesiones avanzadas, en fase de cicatrización, distribuidas por todo el cuerpo y abdomen


Lesiones granulares en forma de pápulas distribuidas por el abdomen y la zona inguinal


Lesiones en forma de vesículas y pápulas en la base del muslo

3 **SI SE DETECTA CUALQUIERA DE ESTOS SÍNTOMAS O LESIONES COMPATIBLES CON LA ENFERMEDAD**
COMUNIQUE DE FORMA INMEDIATA A LOS SERVICIOS VETERINARIOS OFICIALES ESTOS HALLAZGOS Y SIGA SUS INSTRUCCIONES

SI SOSPECHA QUE SUS ANIMALES PUEDEN HABER CONTRAÍDO LA ENFERMEDAD,
NO ESPERE Y AVISE DE FORMA INMEDIATA A LOS VETERINARIOS
TODO EL GANADO DE SU REGIÓN PUEDE ESTAR EN RIESGO

Para más información, póngase en contacto con las autoridades veterinarias locales de su zona

¿Cómo debemos actuar para prevenir la entrada de Viruela Ovina y Caprina en nuestras explotaciones?

> Evitar o reducir al mínimo posible las visitas externas a nuestra explotación, así como nuestras visitas a otras explotaciones de ovejas y cabras.
> Evitar compartir personal, maquinaria, herramientas, piensos, material de cama y otros materiales entre explotaciones.
> Reforzar la limpieza y desinfección de nuestros vehículos, en especial las ruedas y bajos, tras la entrada y antes de la salida de nuestra explotación
> Comunicar a los Servicios Veterinarios Oficiales cualquier movimiento sospechoso de ser ilegal en la zona del que tengamos conocimiento

BTSF Conclusions

- Epidemiological surveillance is the pillar of any health programme
- SGPV surveillance has several purposes: demonstrate absence of disease in countries/free zones + ensure detection capacity of possible outbreaks + monitor epidemiological situation evolution
- Passive surveillance is essential to ensure early detection capability and minimise impact
- Increase the level of awareness for better detection and agile communication of suspicions and compatible cases
- Reinforcement of active surveillance with a view to greater health guarantees and greater monitoring of the situation

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Thank you!

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