Vector surveillance in Mediterranean region regarding BTV control
BTV1 circulation in Italy
Reduction due to vaccination

- 2014: 1509 outbreaks
- 2015: 177 outbreaks
- 2016: 95 outbreaks
- 2017: 49 outbreaks
BTV4 circulation in Italy
Introduction into Northeastern Italy and spread into Sardinia

- **2015**: 180 outbreaks
- **2016**: 961 outbreaks
- **2017**: 2574 outbreaks
On 26\textsuperscript{th} October 2017, a 3 years old sheep in a flock of nearly 400 animals located in the surroundings of Trapani (Western part of the island of Sicily) showed clinical signs consistent with BT infection (fever, oedema of the head, nasal discharge, and depression).
The Seg 2 of BTV-3 isolated from the animal in Sicily was identical to that of BTV-3 TUN2016 first detected in Cap Bon in November 2016.
Extra surveillance activity has been performed to detect the potential spread of the infection.

In a 20 km radius from the infected farm, sixty cattle and sheep holdings, were selected (to detect a 5% prevalence level with the 95% CI).

A total of 2,197 sheep and cattle were tested by ELISA, Sero-Neutralization (SN) and PCR. Only 1 additional sheep in the same infected farm was found positive for BTV-3 by ELISA and SN, and tested negative by PCR.
Surveillance of BTV

Italian experience
Strategies followed for the control of bluetongue in Italy

Since 2001 the control strategy was based on:
- Vaccination of all susceptible species
- Control of animal movements
- Surveillance
  - Surveillance on sentinel animals
  Large number of sentinel animals monthly tested across the whole country.
  Control of movements is based on this sentinels network
  - Entomological surveillance
  A net of Culicoides black-light traps weekly operated all over the year.
C. imicola is mainly distributed in southern Italy and along the Tyrrenian coast.
Obsoletus and Pulicaris Complexes distribution in Italy

Obsoletus Complex

Pulicaris Complex

Legend:
- 0
- 1 - 9
- 10 - 99
- 100 - 999
- 1000 - 9999
- 10000 - 99999
Number of *Culicoides* spp. collected in Italy from 2000 up to date
Conclusions

- Repeated incursions of several BTV serotypes
- Vaccination campaigns are hampered by the vaccines availability and the circulation of multiple serotypes
Conclusions

- Farmers are not motivated to vaccinate due to the limited mortality (in Italy with the exception of Sardinia)
- The possibility of moving animals for grazing, fattening and slaughtering is crucial for livestock sectors
Conclusions

- The serological surveillance based on a large number of sentinels is not feasible for long time and when a limited number of seronegative animals is available.
- The entomological surveillance is not feasible for the detection of virus circulation.
Complexity of the interrelationship between animal movements, hosts densities, climatic conditions and vector distribution

Need for multidisciplinary approach and international harmonized surveillance networks to properly face the new challenges

Need for applied researches to define alternative surveillance approaches based on the risk

Conclusions
Conclusions

Key points for effective surveillance and preparedness

- Contingency plans – Be prepared
- Effective diagnostic system
- Surveillance networks
- Risk assessment
- Capacity building on epidemiology / entomology / diagnostic methods

Resources
Italian IIZZSS and their OIE Collaborating Centers and Reference Laboratories
Under the coordination of the Italian Animal Health Directorate
Thank you for the attention

Muhammad al-Idrisi, Arabic geographer
1100-1165 AC