

SURVEY ON CONTAGIOUS AGALACTIA OF SMALL RUMINANTS IN ITALY, 2014–2017

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Introduction

Contagious agalactia (CA) is an infectious disease of small ruminants mainly caused by *Mycoplasma agalactiae*, and other species (*i.e.*, *M. capricolum subsp. capricolum*, *M. mycoides subsp. capri*, *M. putrefaciens*). It is widespread globally, even if more incident in some geographical settings. Mastitis, arthritis, keratoconjunctivitis, and abortion can occur in infected animals; sepsis and pneumonia are more frequently diagnosed in young animals. CA was included in the "OIE-Listed diseases, infections and infestations in force in 2019": the burden of disease is associated with healthcare and economic costs (*e.g.*, missing milk production, animal replacement, movement restriction of living animals). Asymptomatic carriers and lack of biosecurity interventions favour disease transmission.

More than 7 million sheep and >1 million goats are located in ~140,000 Italian livestock, with highest density in islands (*i.e.*, Sardinia and Sicily), Southern and Central Italy.

Aim of the present survey was to retrospectively estimate CA incidence from 2014 to 2017 in Italy.

Materials and Methods

Reports from bacteriological results of milk samples routinely submitted to public veterinary diagnostic laboratories of the Italian Experimental Zooprophyllactic Institutes were electronically collected using an *ad hoc* electronic data collection form created by the National Reference Center for Sheep and Goat Mastitis (C.Re.N.M.O.C) using GoogleDocs (Google Inc., Mountain View, CA) interface.



Figure 1. Keratoconjunctivitis.

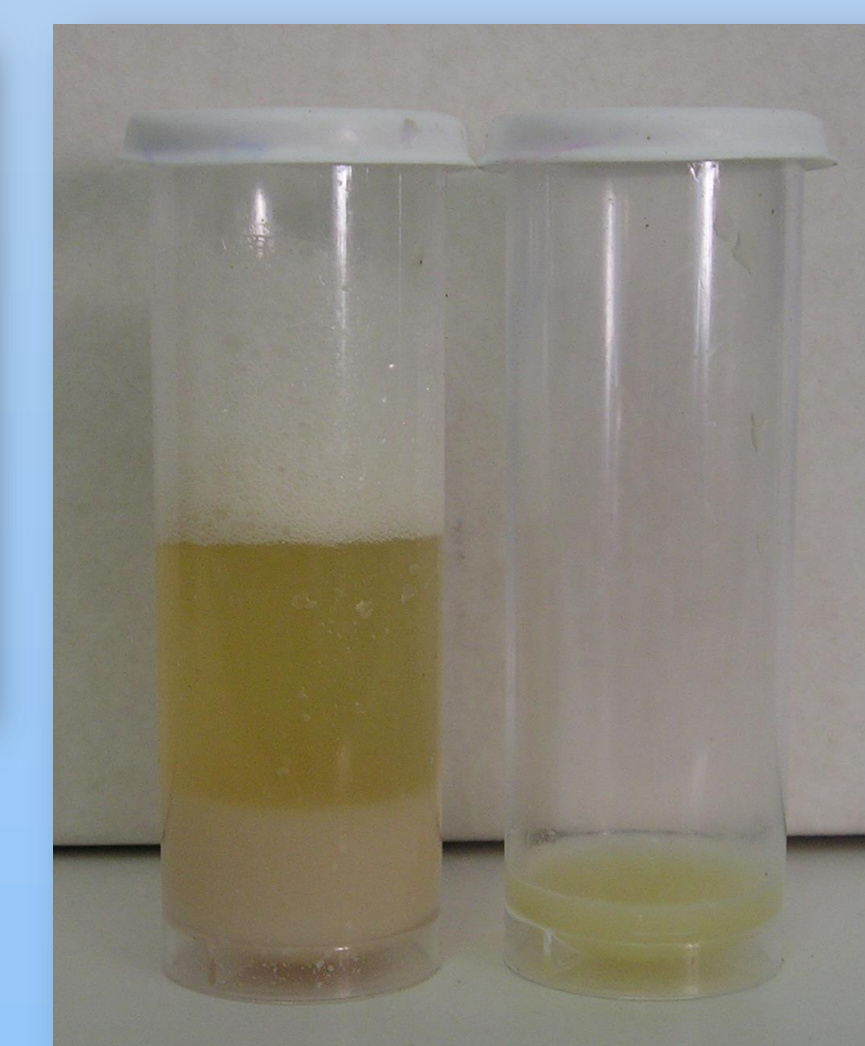


Figure 2. Mastitis (milk abnormalities).



Figure 3. Arthritis.

SHEEP

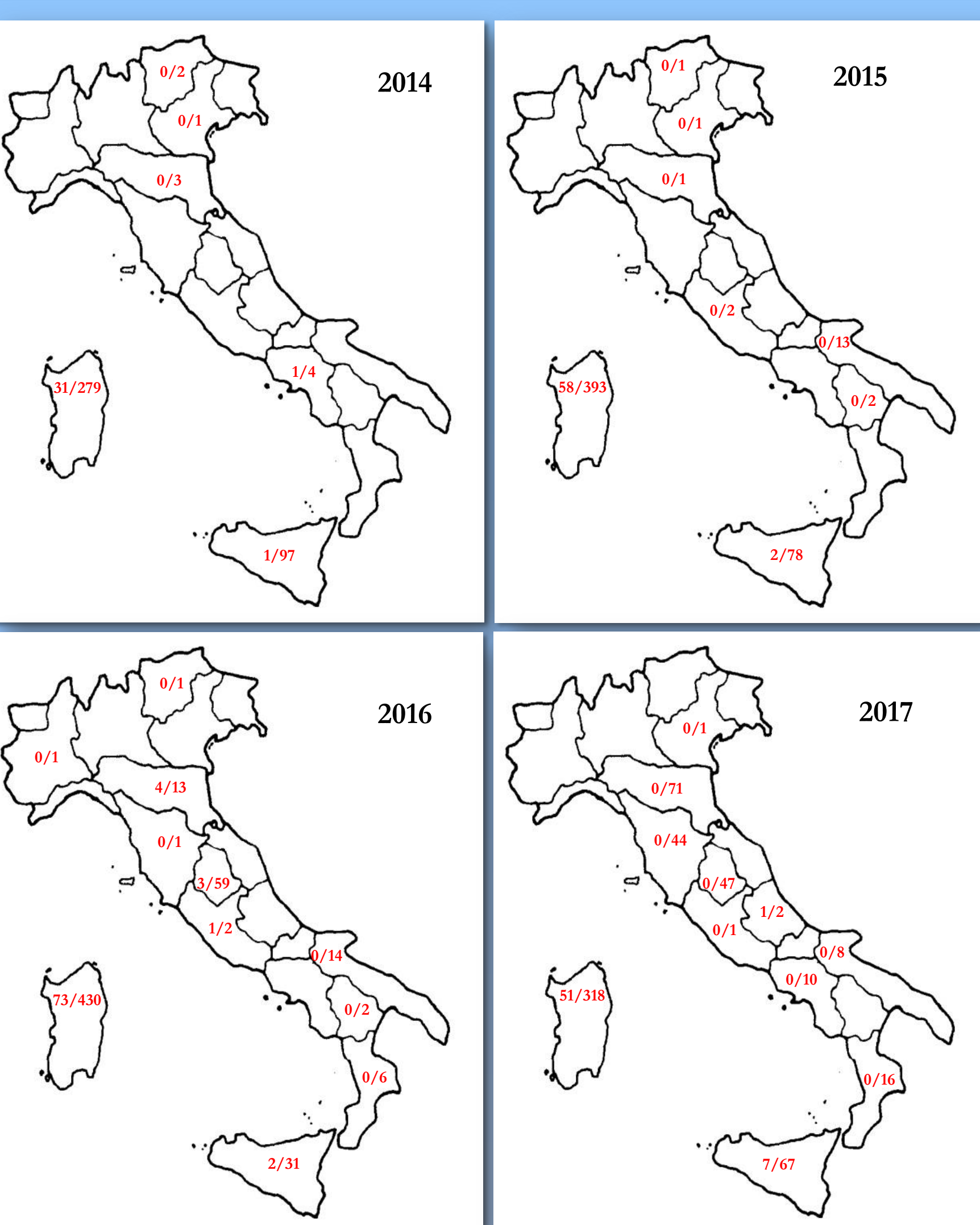


Figure 4. Distribution of contagious agalactia outbreaks/sheep herds checked in Italy, by region.

Sheep herds Italy				
	2014 (n. 409)	2015 (n. 491)	2016 (n. 560)	2017 (n. 585)
<i>M. agalactiae</i>	32	58	82	56
<i>M. capricolum sub. capricolum</i>	1	2	1	1
<i>M. capricolum sub. capri</i>	0	0	1	0
<i>M. putrefaciens</i>	0	0	0	0
Total, n (%)	33 (8.1)	60 (12.2)	84 (15.0)	57 (9.7)

Table 1. *Mycoplasma* species isolated from contagious agalactia outbreaks in Italian sheep herds.

GOATS

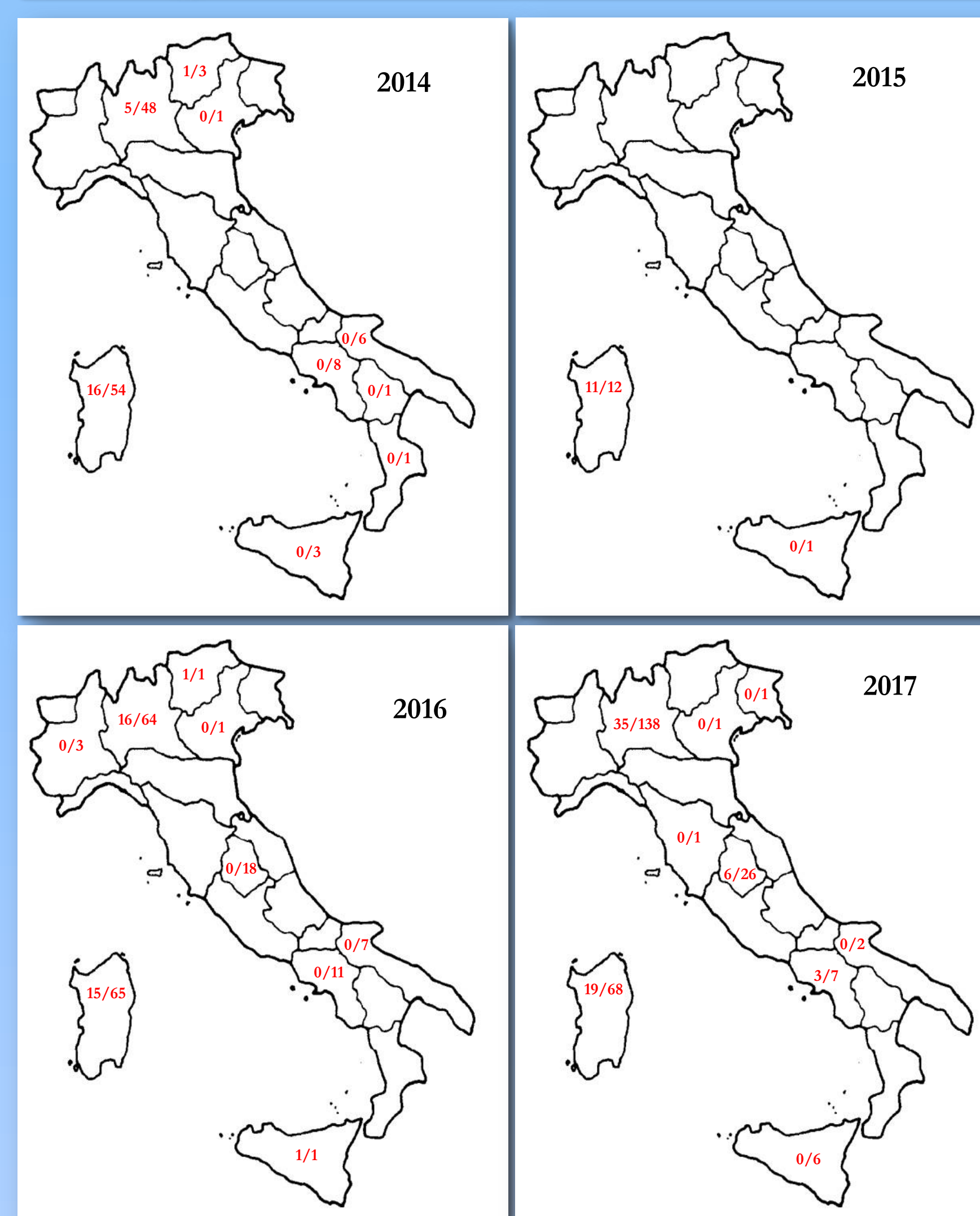


Figure 5. Distribution of contagious agalactia outbreaks/goat herds checked in Italy, by region.

Goat herds Italy				
	2014 (n. 125)	2015 (n. 78)	2016 (n. 171)	2017 (n. 254)
<i>M. agalactiae</i>	15	6	24	54
<i>M. capricolum sub. capricolum</i>	1	2	1	4
<i>M. capricolum sub. capri</i>	5	3	1	4
<i>M. putrefaciens</i>	1	0	7	1
Total, n (%)	22 (17.6)	11 (14.1)	33 (19.3)	63 (24.8)

Table 2. *Mycoplasma* species isolated from contagious agalactia outbreaks in Italian goat herds.

Results and Discussion

CA annual prevalence in sheep farms was 33/409 (8.1%), 60/491 (12.2%), 84/560 (15.0%), and 56/585 (9.7%) in 2014, 2015, 2016, and 2017, respectively, whereas it was 22/125 (17.6%), 11/78 (14.1%), 33/171 (19.3%), and 63/254 (24.8%) in goat herds in the same time-period.

The highest frequency of tested farms (1,685) and the highest CA incidence (53%) were recorded in Sardinia.

It was estimated a CA underreporting in several Italian regions, following voluntary disease concealment.

This illegal practice, which can increase CA spread, might be aimed at avoiding old law-related severe restriction measures, being economic reimbursement not prescribed for infected farms.

Therefore, assessment of disease incidence risks to be inaccurate, reducing tailored public health interventions.

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