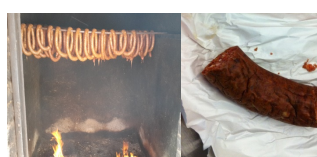
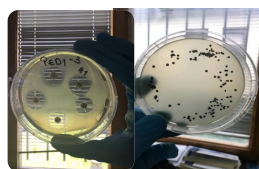




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Antimicrobial Resistance of *Staphylococcus aureus* strains isolated from some traditional milk and meat products in Kosovo

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- Background
- Objective of the study
- Material and Methods
- Results
- Discussion
- Conclusion

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Background

- Traditional food products (milk, meat) → widely consumed
- Production of traditional products → mostly concentrated in small butchers, small dairies, local met processing plants
- No declaration on preparation and way of consumption
- Poor knowledge on safety → contamination of food → outbreaks → mostly unidentified... (during summer months)
- Knowledge and data about AMR bacteria in processed food in Kosovo → very limited
- Risk of exposure to AMR bacteria could be high (not evaluated)



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Background

- limited data on Antimicrobials usage and AMR in the food production chain (Chandler et. Al., 2018)
- Kosovo's population → 4th country among 13 non EU Eastern European countries for antibiotic use (WHO report, 2014)
- Antibiotic use → attributed to β -lactams (incl. cephalosporines), quinolones, macrolids and sulfonamides.
- the issue of AMR unaddressed... (exposing critical gaps within AMR monitoring and mitigation networks)
- countries with weak and inadequate policy → risk for dissemination of AMR bacteria

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Objective of the study

- Determination of AMR of *S. aureus* strains, isolated from some traditional milk and meat products for the most used antibiotics in human and veterinary medicine

Material and Methods:



→ -77 Isolates of *Staph aureus* (coagulase positive)

- Isolated from traditional milk and meat products in 2015

Gjiza-ricotta like,
31 strains



soft cheese,

Paprika in creme
9 strains



Salçiçe
22 strain



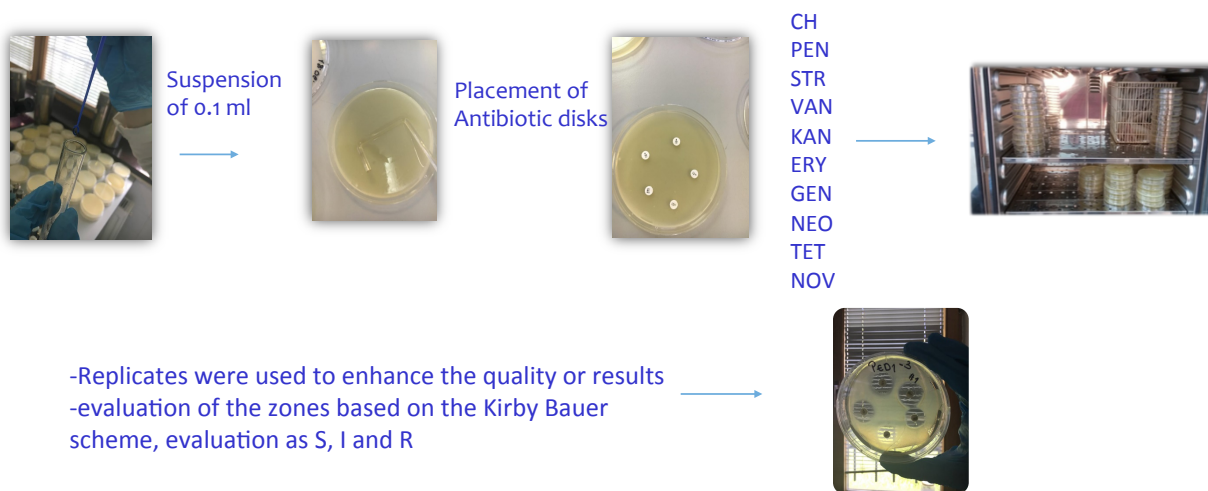
Sausage
15 strains



following unfreezing → sub cultivation in Baird Parker Agar →



Material and Methods:



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Results

Tab. 1-AMR results of tested *S aureus* isolates from dairy and meat products

Antibiotic/Food product		Soft cheese (N=31)	Paprika in crème And ricotta (n=9)	Home Sausage (n=15)	Salçiçe (n=22)	Total resistant
Chloramphenicol	S	21	7	13	19	12/77
	I	3	0	1	1	15.5 %
	R	7	2	1	2	
Penicilin	S	8	1	3	5	60/77
	I	0	0	0	0	78 %
	R	23	8	12	17	
Streptomycin	S	2	0	1	5	50/77
	I	4	4	4	7	64.9 %
	R	25	5	10	10	
Vancomycin	S	26	7	14	20	9/77
	I	0	0	0	1	11.7 %
	R	5	2	1	1	
Kanamycin	S	14	6	8	17	25/77
	I	3	0	2	2	32.5 %
	R	14	3	5	3	

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Results

Tab. 1a-AMR results of tested *S aureus* isolates form dairy and meat products

Antibiotic/Food product		Soft cheese (N=31)	Paprika in crème And ricotta	Home Sausage (n=15)	Salçiçe (n=22)	Total resistant
Erythromycin	S	14	5	4	13	19/77
	I	10	3	6	3	24.6 %
	R	7	1	5	6	
Gentamycin	S	21	7	15	19	13/77
	I	2	0	0	0	16.8 %
	R	8	2	0	3	
Neomycin	S	20	7	13	19	14/77
	I	1	0	2	1	18.1 %
	R	10	2	0	2	
Tetracycline	S	20	7	12	12	24/77
	I	2	1	3	3	31.2 %
	R	9	1	7	7	
Novobiocin	S	9	5	5	5	50/77
	I	3	1	3	3	64.9 %
	R	19	3	14	14	

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Discussion

- Traditional food high levels of coagulase + *S aureus* → multidrug resistance strains in every single food tested
- Highest resistance was registered for Penicillin, Streptomycin and Novobiocin,
- Each group of food contained Vancomycin resistant *S. aureus* strains (n=9 or 11.7%; soft cheese)
- 4 Isolates were resistant to every single antibiotic tested
- Wider epidemiological studies to be instituted to understand the V resistance evolution.....(from table to farm)
- Other new AM to be involved in testing.....

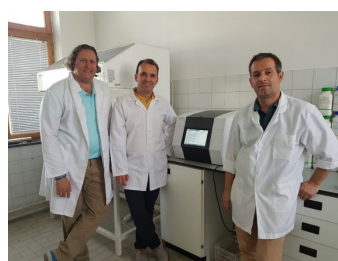
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Conclusion

- Traditional Food products showed to be source of multidrug resistant *S aureus* in Kosovo
- Vancomycin resistant *S aureus* strains from traditional foods are reported for the first time and should be considered a risk for the public health
- Improved monitoring is needed to better understand the risk associated with the potential transmission of AMR bacteria from food animals to humans and the opposite

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THANK YOU!