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Achillea thracica Velen. (Asteraceae) is a perennial Bulgarian endemic plant with medicinal properties. The species was found only near Manole village, Plovdiv, Bulgaria, and the number and size of populations appeared to be reduced mainly by human activities. *Ex situ* conservation of the Thracian yarrow was done by applying the micropropagation method.

Aim:

The aim of the present study was to investigate the antimicrobial activities of the extracts obtained from *in situ* grown, *in vitro* propagated and *ex vitro* adapted plants. *A. thracica* samples were prepared by thermostat extraction method using water as solvent.

Table 1. Antimicrobial activity of aqueous extracts of *A. thracica* plants against Gram positive bacteria and yeasts

Type of extracts from Ach. <i>thracica</i> plants	Gram positive bacteria (inhibition zone, mm)							Yeast species (inhibition zone, mm)	
	<i>Bacillus subtilis</i>	<i>Bacillus cereus</i>	<i>Bacillus pumilus</i>	<i>Staphylococcus epidermidis</i> 1093	<i>Staphylococcus aureus</i>	<i>Enterococcus faecalis</i>	<i>Micrococcus luteus</i>	<i>Saccharomyces cerevisiae</i>	<i>Candida albicans</i>
Sox W <i>in vivo</i>	0	0	0	0	0	0	0	22	7
Sox W <i>in vitro</i>	0	0	9	0	0	0	0	16	0
Sox W <i>ex vitro</i>	0	0	0	0	0	0	0	0	0

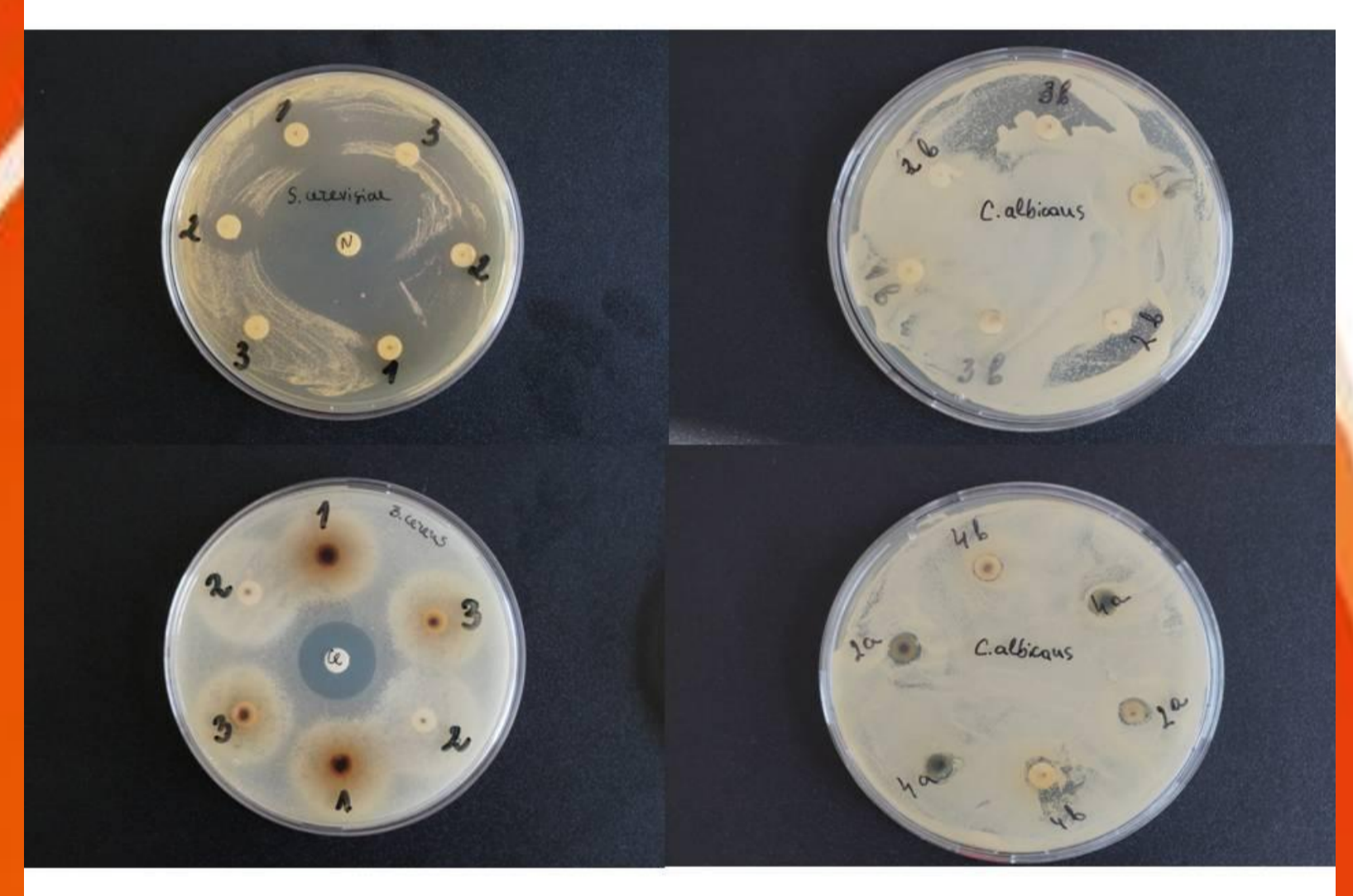
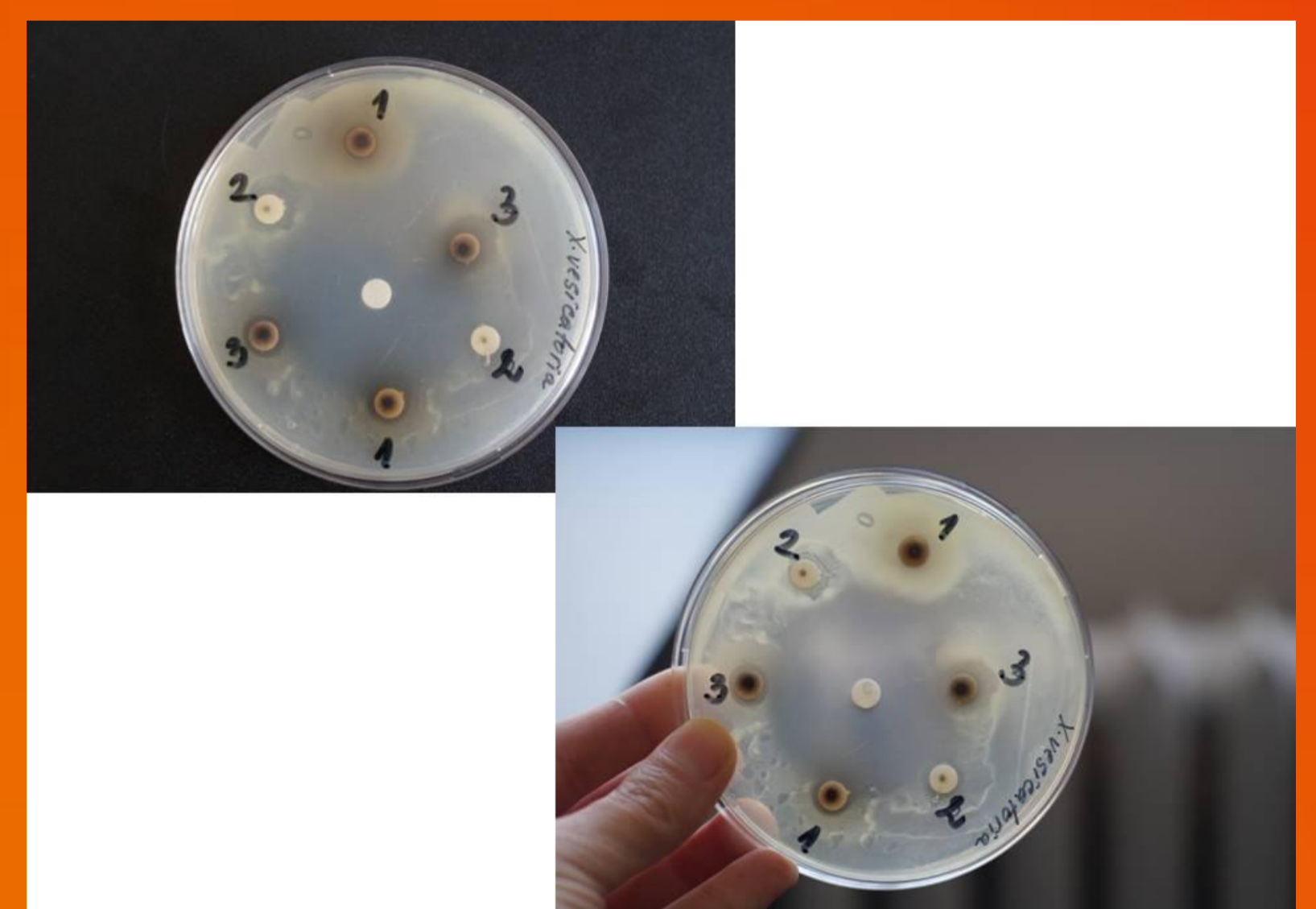


Table 2. Antimicrobial activity of aqueous extracts of *A. thracica* plants against Gram negative bacteria and phytopathogen bacterial strain

Type of extracts from Ach. <i>thracica</i> plants	Gram negative bacteria (inhibition zone, mm)				Phytopathogen bacterial strain (inhibition zone, mm)
	<i>Escherichia coli</i> 3702	<i>Escherichia coli</i> 3397	<i>Pseudomonas aeruginosa</i>	<i>Pseudomonas fluorescense</i>	<i>Xanthomonas euvesicatoria</i> 105 d
Sox W <i>in vivo</i>	0	0	0	0	9
Sox W <i>in vitro</i>	0	0	0	0	10
Sox W <i>ex vitro</i>	0	0	0	0	10



Results:

The antimicrobial activities of the aqueous extracts were determined by disk-diffusion method against seven Gram-positive bacteria (*B. subtilis*, *B. cereus*, *B. pumilus*, *St. epidermidis* 1093, *St. aureus*, *E. faecalis*, *M. luteus*), five Gram-negative bacteria (*E. coli* 3702, *E. coli* 3397, *P. aeruginosa*, *P. fluorescense*, *X. euvesicatoria*) and two yeast strains (*C. albicans*, *S. cerevisiae*).

Discussion:

This study revealed the presence of different antimicrobial activity of the samples. Our data reviewed that bacterial species were more insensitive than tested yeast strains towards the aqueous extracts of *A. thracica* Velen.