

Table 1. Antimicrobial activities of different extracts of *Lecanora atra*, *Lecanora muralis*, *Parmelia saxatilis*, *Parmelia sulcata* and *Parmeliopsis ambigua* by using agar disc diffusion method

Organisms	Lichen species																
	<i>L. atra</i>			<i>L. muralis</i>			<i>P. saxatilis</i>			<i>P. sulcata</i>			<i>P. ambigua</i>			Antibiot.	
	A ^a	B	C	A	B	C	A	B	C	A	B	C	A	B	C	S	- K
<i>Bacillus mycoides</i>	22 ^b	25	-	23	26	-	22	24	-	28	26	-	16	11	-	28	-
<i>Bacillus subtilis</i>	14	14	-	13	15	-	18	20	-	20	16	-	16	15	-	26	-
<i>Enterobacter cloacae</i>	13	13	-	14	16	-	16	16	-	16	13	-	15	17	-	25	-
<i>Escherichia coli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-
<i>Klebsiella pneumoniae</i>	16	14	-	18	24	-	17	19	-	18	14	-	21	19	-	40	-
<i>Staphylococcus aureus</i>	16	13	-	17	18	-	18	20	-	26	25	-	14	14	-	20	-
<i>Aspergillus flavus</i>	16	18	-	-	-	-	13	17	-	23	23	-	14	16	-		
<i>Aspergillus fumigatus</i>	12	15	-	-	13	-	18	24	-	18	19	-	14	16	-	-	34
<i>Botrytis cinerea</i>	20	16	-	12	15	-	22	28	-	30	27	-	20	23	-	-	39
<i>Candida albicans</i>	20	21	-	-	12	-	20	22	-	24	23	-	19	23	-	-	40
<i>Fusarium oxysporum</i>	12	18	-	-	14	-	13	17	-	14	16	-	12	17	-	-	35
<i>Mucor mucedo</i>	12	16	-	-	14	-	17	19	-	13	16	-	12	16	-	-	17
<i>Paecilomyces variotii</i>	10	20	-	13	16	-	20	22	-	22	25	-	13	24	-	-	40
<i>Penicillium purpurascens</i>	17	21	-	-	-	-	15	18	-	17	20	-	12	15	-	-	38
<i>Penicillium verrucosum</i>	15	19	-	-	-	-	15	22	-	17	19	-	15	15	-	-	36
<i>Trichoderma harsianum</i>	11	19	-	-	15	-	20	24	-	18	20	-	15	17	-	-	18

^aA - acetone extract; B – methanol extract; C – aqueous extract.

^bDiometer of inhibition zone (mm) including disc diameter of 7 mm. Values are the mean of three replicate

Antibiotics: K – ketaconazole, S - streptomycin

Table 2. Minimum inhibitory concentration (MIC) of *Lecanora atra*, *Lecanora muralis*, *Parmelia saxatilis*, *Parmelia sulcata* and *Parmeliopsis ambigua* against the test organisms

Organisms	Lichen species																	
	<i>L. atra</i>			<i>L. muralis</i>			<i>P. saxatilis</i>			<i>P. sulcata</i>			<i>P.ambigua</i>			Antibiot.		
	A ^a	B	C	A	B	C	A	B	C	A	B	C	A	B	C	S	- K	
<i>B. mycoides</i>	1.56 ^b	1.56	-	3.12	1.56	-	3.12	1.56	-	0.78	1.56	-	1.56	1.56	-	7.81	-	
<i>B. subtilis</i>	1.56	3.12	-	6.25	3.12	-	3.12	3.12	-	0.78	1.56	-	1.56	1.56	-	7.81	-	
<i>E. cloacae</i>	3.12	3.12	-	3.12	1.56	-	3.12	1.56	-	0.78	1.56	-	1.56	3.12	-	1.95	-	
<i>E. coli</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.25	-	
<i>K. pneumoniae</i>	3.12	3.12	-	3.12	1.56	-	3.12	1.56	-	0.78	1.56	-	1.56	3.12	-	1.95	-	
<i>S. aureus</i>	3.12	3.12	-	3.12	1.56	-	3.12	3.12	-	0.78	1.56	-	1.56	1.56	-	31.25	-	
<i>A. flavus</i>	25	6.25	-	-	-	-	25	12.5	-	6.25	3.12	-	25	12.5	-	-	3.9	
<i>A. fumigatus</i>	25	3.12	-	-	25	-	25	6.25	-	6.25	3.12	-	25	6.25	-	-	3.9	
<i>B. cinerea</i>	25	3.12	-	25	12.5	-	3.12	1.56	-	1.56	1.56	-	12.5	6.25	-	-	1.95	
<i>C. albicans</i>	12.5	1.56	-	-	25	-	3.12	1.56	-	1.56	1.56	-	25	6.25	-	-	1.95	
<i>F. oxysporum</i>	25	6.25	-	-	25	-	25	12.5	-	6.25	3.12	-	25	6.25	-	-	3.9	
<i>M.ucedo</i>	25	6.25	-	-	25	-	12.5	6.25	-	6.25	3.12	-	25	6.25	-	-	31.25	
<i>P. variotii</i>	25	3.12	-	25	12.5	-	6.25	3.12	-	3.12	1.56	-	25	3.12	-	-	1.95	
<i>P. purpurascens</i>	25	3.12	-	-	-	-	25	12.5	-	12.5	6.25	-	25	12.5	-	-	3.9	
<i>P. verrucosum</i>	25	3.12	-	-	-	-	25	6.25	-	12.5	6.25	-	25	12.5	-	-	3.9	
<i>T. harsianum</i>	25	6.25	-	-	-	-	12.5	6.25	-	6.25	3.12	-	25	12.5	-	-	7.81	

^aA - acetone extract; B – methanol extract; C – aquaeos extract.

^bMinimum inhibitory concentration (MIC); values given as mg/ml for lichen extract and µg/ml for antibiotics

Antibiotics: K – ketaconazole, S - streptomycin