THE EFFECT OF pH AND CHITOSAN CONCENTRATION ON FLOCCULATION EFFICIENCY OF *Bacillus* sp. BIOMASS

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In this study two types of chitosan were applied to flocculate cultivation broth of *Bacillus* sp. aimed to be used as biocontrol agent for suppression of mycotoxigenic *Aspergillus* phytopathogens, isolated from diseased corn. The aim of this study was to select appropriate flocculant and to relate its dose and pH value to the flocculation efficiency and antimicrobial activity of the harvested *Bacillus* sp. biomass against the tested phytopathogens.

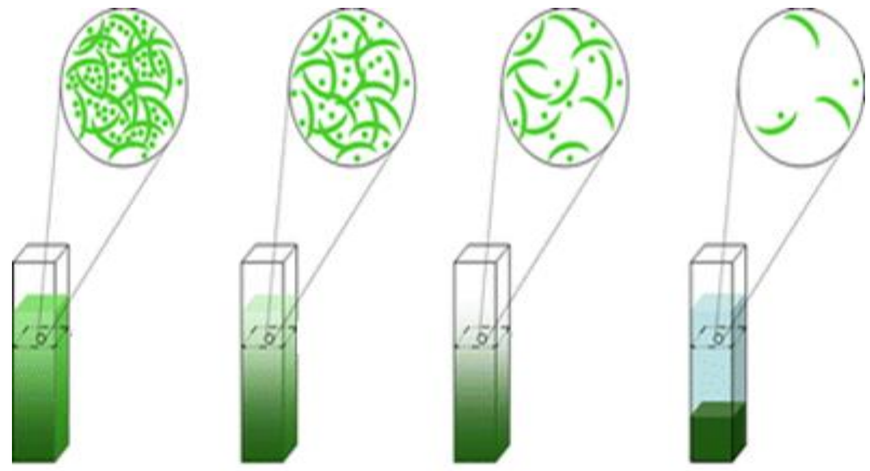


Figure 1. Schematic representation of flocculation and sedimentation process

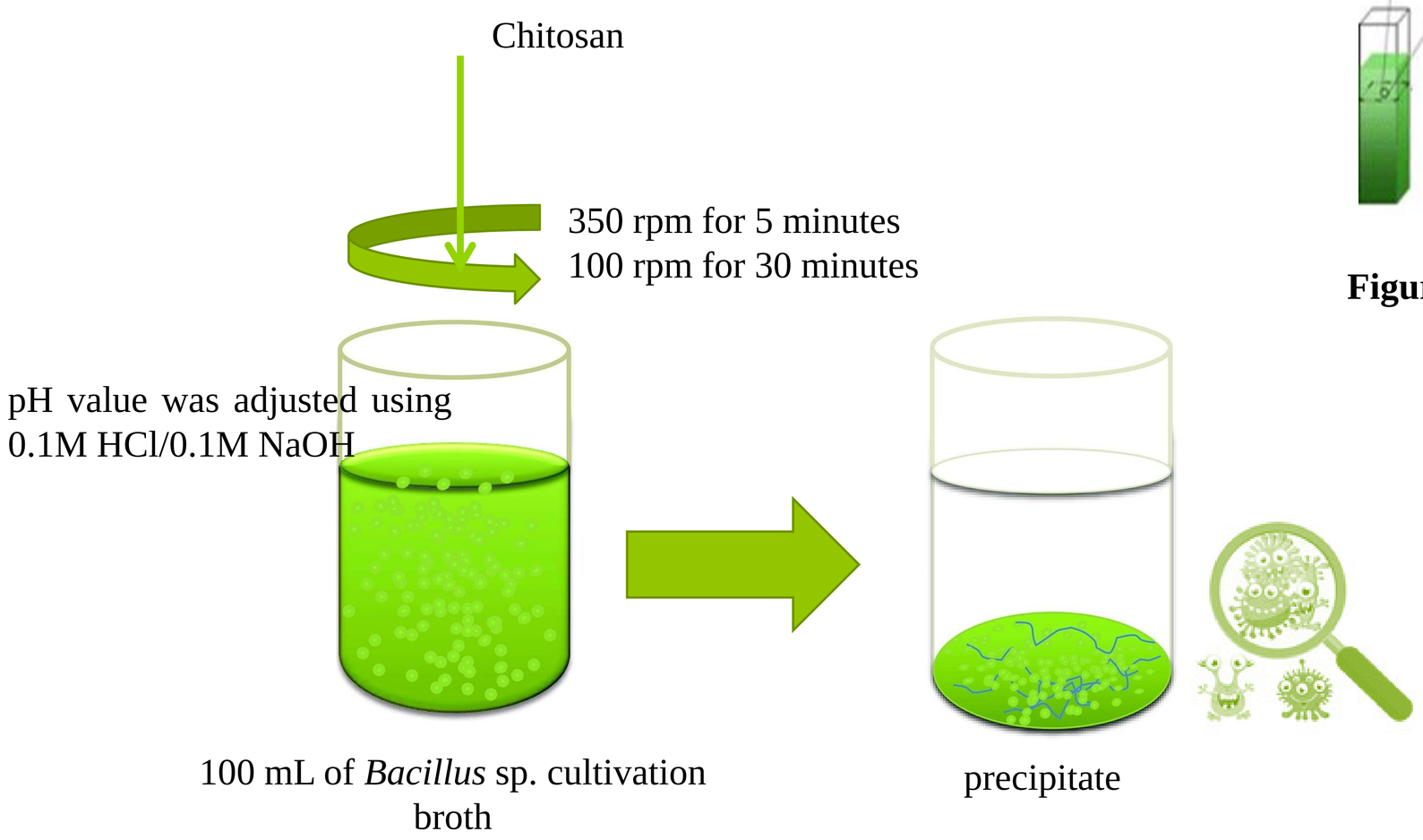


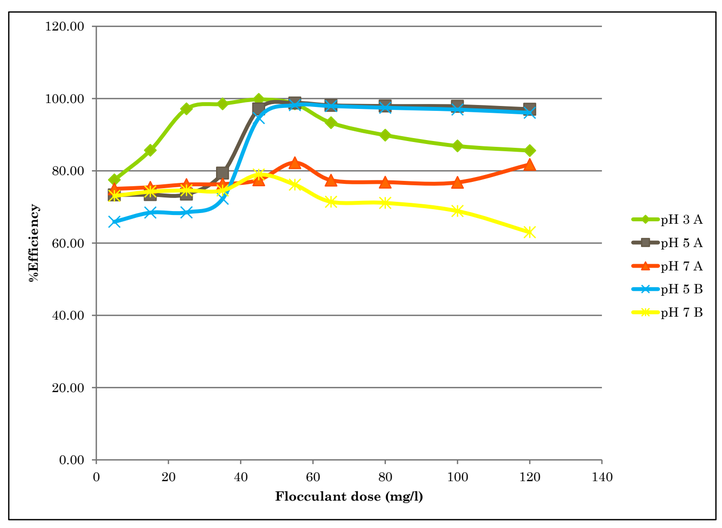
Figure 2. Schematic of flocculation experiment

After the flocculation tests, antimicrobial activity of the precipitate/supernatant against phytopathogenic *Aspergillus* spp. was examined using the well diffusion method.

Table 1. Flocculation results

Flocculant dose (mg/l)	OD$_{\circ}$	OD (pH 3 A)	%EF	OD (pH 5 A)	%EF	OD (pH 7 A)	%EF	OD (pH 5 B)	%EF	OD (pH 7 B)	%EF
5	2,597	0,585	77,47	0,693	73,32	0,649	75,01	0,886	65,88	0,700	73,05
15	2,597	0,372	85,68	0,691	73,39	0,638	75,43	0,820	68,43	0,669	74,24
25	2,597	0,074	97,15	0,688	73,51	0,618	76,20	0,818	68,50	0,660	74,59
35	2,597	0,038	98,54	0,537	79,32	0,615	76,32	0,720	72,28	0,661	74,55
45	2,597	0,006	99,77	0,075	97,11	0,585	77,47	0,140	94,61	0,547	78,94
55	2,597	0,038	98,54	0,033	98,73	0,461	82,25	0,047	98,19	0,619	76,16
65	2,597	0,174	93,30	0,049	98,11	0,587	77,40	0,054	97,92	0,742	71,43
80	2,597	0,263	89,87	0,054	97,92	0,601	76,86	0,066	97,46	0,750	71,12
100	2,597	0,341	86,87	0,056	97,84	0,603	76,78	0,079	96,96	0,809	68,85
120	2,597	0,374	85,60	0,077	97,04	0,474	81,75	0,102	96,07	0,961	63,00

Figure 3. Effects of flocculant dose on flocculation efficiency



It can be concluded that different types of chitosan could be successfully applied as the flocculating agents for separation of *Bacillus* sp. biomass aimed to be applied in biological control of plant pathogens.

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