

ABSTRACT

Gina Fahim Mikhail, utilization of potato's processing wastes for food additives production and their environmental impact. Unpublished M.Sc. Thesis, Institute of Environmental Studies and Research, Dept. of Agric. Environmental Science, Ain Shams University, (2004).

This investigation was carried out to study the suitable methods for the production of gluconic acid and its derivatives by using potato washing water, milk permeate and /or its blend to select the suitable medium. Four different microorganisms namely *Aspergillus niger*, *Penicillium variable*, *Zymomonas mobilis* and *Acinetobacter calcoaceticus* which known as gluconic acid producers were used in the fermentation process to select the suitable one for the maximum production of gluconic acid. Also the optimum condition and nature and concentration of some nutritional factors for the growth of the selected microorganism were studied. Finally the products have been isolated and identified.

Zymomonas mobilis gave the highest gluconic acid production when grown in a mixture of potato washing water and milk permeate in ratio 4:1 contained 0.015g ammonium phosphate as nitrogen and phosphorus source. The optimum temperature was 30^o C and the optimum pH was 7.0. The isolated products were identified as gluconic acid and glucono delta lacton.

Therefore it can be recommend the use of potato washing water and milk permeate to reduce its environmental pollution and maximize its economical values in the production of gluconic acid and its derivatives.

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BALF	:	Bronchoalveolar lavage fluid
CIE	:	Counter-immuno electrophoresis
CMV	:	Cytomegalo-virus
CNS	:	Central nervous system
CONS	:	Coagulase-negative staphylococci
CRP	:	C-reactive protein
CSF	:	Cerebro-spinal fluid
DIC	:	Disseminated intravascular coagulopathy
E.coli	:	Escherichia coli
ENA	:	Epithelial-derived neutrophil attractant
ESR	:	Erythrocyte sedimentation rate.
G₆PD	:	Glucose 6-phosphate dehydrogenase
GBS	:	Group B-streptococci
GRO	:	Growth related oncogene
H. influenzae	:	Haemophilus influenzae
Hb	:	Hemoglobin
HIV	:	Human immune-deficiency virus
HS	:	Highly significant
HSV	:	Herpes simplex virus
IL	:	Interleukin
IUGR	:	Intra-uterine growth retardation
K. pneumoniae	:	Klebsiella pneumoniae
L. monocytogenes	:	Listeria monocytogenes
LBW	:	Low birth weight
LPA	:	Latex particle agglutination

MBC	: Minimal bactericidal concentration
MCP	: Monocyte chemotactic protein
N. meningitidis	: Neisseria meningitidis
NAP	: Neutrophil activating peptide
NBT	: Nitroblue tetrazolium
NEC	: Necrotizing entero-colitis
NICU	: Neonatal intensive care unit.
NS	: Non significant
NSP	: Neutrophil storage pool
P. aeruginosa	: Pseudomonas aeruginosa
PAF	: Platelet activating factor
PCR	: Polymerase chain reaction
PMN	: Polymorphonuclear neutrophils
PNL	: Polymorphonuclear leucocytes
PPHN	: Persistent pulmonary hypertension
PROM	: Prolonged premature rupture of membranes
PT	: Prothrombin time
PTT	: Partial thromboplastin time
RBC	: Red blood corpuscles
RDS	: Respiratory distress syndrome
RSV	: Respiratory syncytial virus
S	: Significant
T.B	: Tubercle bacilli
TLC	: Total leucocytic count
TNF	: Tumour necrosis factor
TPN	: Total parenteral nutrition
UTI	: Urinary tract infection
VLBW	: Very low birth weight
WBC	: White blood cells

