

SCREENING OF AMYLASE PRODUCING MICRO-ORGANISMS FROM THE SOIL SAMPLES OF HOUSE HOLD AND MUNICIPAL WASTE DUMP SITE

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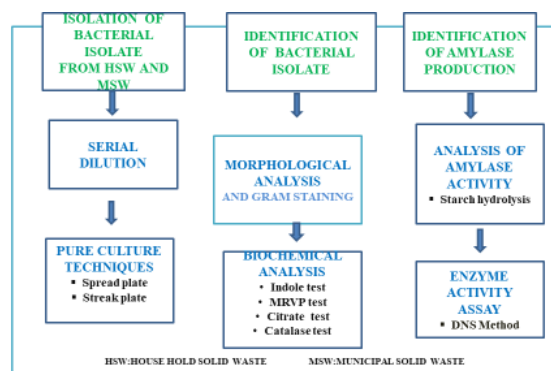
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AIMS AND OBJECTIVE

Isolation and identification of microorganisms from Household solid waste (HSW) and Municipal solid waste (MSW). Screening of amylase producing microorganisms and Determination of amylase activity.

MATERIALS AND METHODS



SAMPLE COLLECTION SITE : Soil sample 1: MSW- Shakthan stand Thrissur Kerala, India. Soil sample 2: HSW-viyyur, Thrissur, Kerala, India.

RESULTS AND CONCLUSION

COLONY MORPHOLOGY OF ISOLATED BACTERIA

SAMPLE	COLOR OF COLONY	NATURE OF COLONY	GRAM+VE/VE	SHAPE
MSW1	WHITE	Round shaped transparent	Gram positive	Coccus
MSW2	PALED	Tiny, round shaped	Gram positive	Coccus
HSW1	WHITE	Irregular	Gram positive	Bacilli
HSW2	ORANGE	Red shaped	Gram positive	Short bacilli

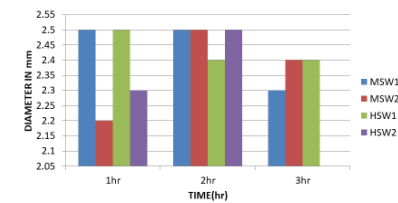
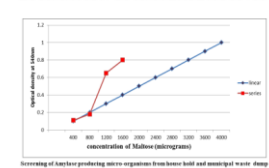
DETERMINATION OF AMYLASE ACTIVITY

QUANTITISATION OF ISOLATES (OD at 540nm)

SAMPLE	ABSORBANCE	MALTOSE FORMED[micrograms](from graph)
MSW1	0.11	400
MSW2	0.80	3120
HSW1	0.65	2520
HSW2	0.18	680

AMYLASE ACTIVITY OF BACTERIAL ISOLATE

ESTIMATION OF AMYLASE ACTIVITY



The amylase activity determined in IU

$$IU = \frac{\text{sugar produced}}{\text{molecular weight of maltose}} * \frac{\text{dilution factor}}{\text{incubation time}}$$

Amylase activity of: MSW1 = 0.116 IU/ml/min, MSW2 = 0.9114 IU/ml/min

HSW1 = 0.7361 IU/ml/min, HSW2 = 0.1986 IU/ml/min.

REFERENCE:

- Mishra S., Behera N., "Amylase activity of a starch degrading bacteria isolated from soil receiving kitchen waste", African Journal of Biotechnology, 2008, (7):3226-3331
- 4. Sethi S., Gupta S., Alariya S.S., Gupta B.L., Amylase activity of a starch degrading bacteria isolated from soil, Archives of Applied Science Research, 5(1), 15-24.