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Physiological Behavior of the Propionic Acid Group of Bacteria

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THE EFFECT OF STEFFEN WASTE ON THE FERMENTATION OF PENTOSANS FROM THE CORN-STALK

E. I. FULMER, C. H. WERKMAN, R. M. HIXON, AND
A. L. WILLIAMS

It was found that Steffen waste furnishes a suitable source of nitrogen, salts, and buffers for the growth of *Aerobacter pectinovorum* on pentosan material prepared from corn-stalks.

PHYSIOLOGICAL BEHAVIOR OF THE PROPIONIC ACID GROUP OF BACTERIA

SARA E. KENDALL AND C. H. WERKMAN

The group constitutes a number of species of bacteria producing large quantities of propionic acid from carbohydrates. The generic diagnosis of the group is: *Propionibacterium*, Orla-Jensen, 1909. Gram positive, non-sporulating non-motile short rods showing marked morphological variation in acid media or when grown under aerobic conditions; normal growth anaerobic. Cultures are catalase positive. Carbohydrates, glucosides and alcohols attacked with the production of propionic acid, acetic acid and CO₂. The species are differentiated on the basis of sugar fermentation, nitrate reduction, pigment production and morphology. A key to the species is given with a description of each.

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THE PRODUCTION OF PROPIONIC ACID FROM PENTOSESES BY *PROPIONIBACTERIUM PENTOSACEUM*

C. H. WERKMAN, R. M. HIXON, E. I. FULMER, C. H. RAYBURN

Propionibacterium pentosaceum attacks pentoses (xylose, arabinose) with the production of propionic and acetic acids. The medium employed was as follows:

Dried yeast (Harris Lab.)	10 gms.
K ₂ HPO ₄	1 gm.
CaCO ₃	5 gms.
Pentose (xylose or arabinose)	15 gms.
Water	750 cc.