1979年度 定期總會 및 學術研究發表會

日時：1979年 4月 28日
場所：서울, 韓國科學院

理 事 會(09:00～10:00)
定期總會(10:00～10:40)
特別講演(10:50～12:50)

開 會 辭 ……司會
國民儀禮 ……
會長人事 ……會長 姜 孝 源
祝 辭 ……
經過報告 ……金 成 器
學術 및 事業報告 ……鄭 東 孝
決算報告 ……梁 隆
監事報告 ……洪 淳 德
任員改選 ……姜 孝 源
新任會長團 人事 ……
副會長 崔 國 智 裵 武
事業計算 및 豫算 ……司會
討議事項 ……總務幹事 金 成 器
廣 告 …… 〃
閉 會 …… 〃

特別講演 및 學蛋研究 發表會(10:00～18:30)

開 會 辭
特別講演
學術發表
간 친 회
閉 會

特 別 講 演

1. Trends in Agricultural Waste Utilizatilization

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Seoul National University

Each year, vast amount of agricultural crop residues are produced(about 60 percent of the total crop production), which have not been effectively utilized because they are bulky and lignocellulosic, thus having little fuel energy per unit volume. Using treated plant residues as animal feeds could result in an ultimate saving of fossil fuel energy and a more effective utilizat ion of products created by the photosynthetic process. Feeding the residues to animals would decrease the pollution potential, but these residues are difficult for even a ruminant animal to digest.

If cellulosic wastes produced from cereal grain straw and wood could be digested, land now used for producing foɹage and grain cnuld be shifted to food crops for humans. During the past decade, considerable efforts were made to utilize crop residues. These utilization methods can be broadly grouped into four categories: (1) direct uses, (2) mechanical conversions, (3) chemical conversions and (4) biological conversions.

Agricultural crop residues consist mainly of cellulose, hemicellulose, lignin, pectin, andother plant carbohydrates. The nature of the constituents of these residues can be best utilized as one of the five FS: Fuel, Fiber, Fertilizer, Feed and Food. Many processes have been proposed and some are in industrial production stage. However, economics of the process depend on the location where availability of other competitive products are different.

2. Studies on Microbial Extracellular β-Galactosidase

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Kang-weon National University

β-Galactosidase is an enzyme which catalizes hydrolysis of lactose, a natural substrate, to glucose and galctose and transferring some monosac-

charide units to active acceptors as sugar or alcohol. The occurence of β-Galactosidase is known in various microorganisms, animals and higher plants and has been studied by many investigatigators. Especially, a great deal of articles for the enzyme of *E. coli* have been presented in genetic control mechanism and induction-repression effects of proteins,

On the other hand, in the dairly products industry, it is important to hydrolyse lactosd which is the principal sugar of milk and milk products. During the last few years, the interest in enzymatic hydrolysis of milk lactose has been increased, because of the lactose intolerence in large groups of the population. Microbial β-Galactosidases are considered potentially most suitable for processing milk to hydrolyse lactose and, in recont years, the immobilized enzyme from yeast has been examined. Howev, most of the microbial β-Gal actosidase are intracellular enzymes, except a few fungal β-Galactosidases, and extracellular β-Galactosidase which may be favorable to industrial applieation is not so well investigated. On this studies, a mold producing a potent extracellular β-Galactosidase was isolated from soil and identified as an imperfect fungus, *Beauveria bassians*. In this strain, both extracellular and intracellular β-Galactosidases were produced simultaneously and a great increase of the extracellular production was acheved by improving the cultural conditions. The extracellular enzyme was purified more than 1,000 times by procedures including Phosphocellulose and Sephadex G-200 chromatographies. Several characteristics of the enzymewas clarified with this preparation. The enzyme has a main subunit of molecular weight of 80,000 which makes an active aggregate. And at neutral pH range, it has optimum pH for activity and stability. The Km value was determined to be 0.45×10^{-3} M for o-Nitrophenyl-β-Galactoside.

In any event, it is interesting to sttudy the β-Galactosidase of *B. bassiana* for the mechanism of secretion and conformational structure of enzyme.

一 般 講 演

1. 鶴肉 加工에 關한 硏究

(제 1 보) 原料肉 前處理時
미생물 감소효과 및 저장기간 연장에 대해

김혁일 · *홍범식 · 양한철 · 유태종
고려대학교 식품공학과

1. 계육사체로 NaOCl 용액에 침지시 용액중의 잔유염소농도와 coliform 및 총균수에 미치는 농도, pH, 유기산의 종류별 억제 효과를 본 결과 NaOCl 200ppm, pH 3, Succinic acid의 경우가 양호하였으며 온도별 효과는 60°C, 30~60초 처리가 계육 표피의 보존성이 우수하였다.

2. 저장실험에서 위와같은 조건으로 처리한 경우 4°C 저장시는 대조군에 비하여 저장이 연장되었고 −18°C 저장시 대조군에 비하여 별 유의치가 없었으나 4°C 에서 해동 후 저장의 경우 대조군에 비하여 양호하였다.

2. 好 Alkali 성 *Aeromonas* 속 세균의 cellulolytic enzyme에 관한 연구

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Horikoshi 등[1]이 好 alkali 성 미생물에 관한 연구에서 분리한 수종의 cellulolytic bacteria 중에서 가장 강력한 균체의 효소를 생산하는 *Aeromonas* 속 세균의 cellulolytic 효소에 관한 연구 결과를 보고한다.

공업적으로 생산된 효소를 사용하여 효소작용의 최적조건을 측정하고 gel filtration, ion-exchange chromatography 및 affinity chromatography 로 celluplytic 효소를 분리정제하였다.

본 효소의 활성 최적 pH는 7.0~8.5로 alkaline 효소였으며 반응온도 50°C 에서 가장 강한 활성을 보였다. 분리 정제과정에서 carboxymethyl cellulose (CMC)에 대하여 활성이 있는 단백질이 최소 8종 이상 분리되었으며 이중 1개 효소는 CMC에 대해서는 극히 낮은 활성을 보였으나 결정성 기질인 Avicel에는 강한 활성을 보였다. 본 연구의 결과를 *Cellulomonas* 속 세균 및 *Trichoderma* 속 곰팡이