

- Indication of a serological typing or by other methods (PAGE, etc.) of the isolates especially of *Ureaplasma* strains.
- Indication and methodology of a serological diagnostic.

As a general methodology it was concluded that:

1. In *respiratory diseases* it should be preferred to give emphasis to serological diagnosis of *Mycoplasma pneumoniae* by CF test. It is however recommended to perform isolation attempts in newborns and in infants (as well as simultaneous isolation attempts of *Chlamydia*) because of the difficulty of getting early clear cut serological results in such very young children and because of the possibility of pulmonary infection with other types of *Mycoplasmas*.

2. In *genital diseases*, the method of choice should be the isolation attempt and it is recommended to include a medium of the PS4 type in the range of media in order to be able to isolate *Mycoplasma genitalium*.

Growth media were considered to be the most adequate transport medium.

In urethritis it is recommended to perform quantitative determinations in urine. It was of the general opinion that serological tests performed either with serum or with secretions were deceiving and of no practical use except in cases of complicated diseases (peritonitis, arthritis, etc.). No serological technique could be advised.

It was believed that *Mycoplasma* and *Ureaplasma* fine differentiation, by serotyping or by PAGE for instance, would possibly give clues on difference in virulence among these agents as well as useful epidemiological informations.

Development in this field was recommended.

The role of *Mycoplasma genitalium* and of *Ureaplasma diversum* in human diseases should be clarified and the search of these fastidious agents is encouraged.

Environmental microbiology

The global nature of the pollution problem has induced research activities on biodegradation in many countries and has stimulated the development of microbial technologies to overcome pollution by persistent compounds. International organizations like the Working Party on Environmental Biotechnology of the European Federation of Biotechnology (EFB) and the United Nations Environmental Programme (UNEP) have become aware of the problem and are developing efforts to coordinate research and development, to improve information exchange, and to work out recommendations for government agencies. It was felt that in view of these activities at an international level, there was a need for information exchange at the national level. The session on environmental microbiology at the annual meeting of the

SGM thus provided representatives of Swiss research laboratories involved in biodegradation research with an opportunity to discuss their activities. Four presentations were devoted to research related to the abatement of pollution caused by point sources, that is by industrial effluents and by effluents from municipal sewage treatment plants, while one contribution served to inform the audience of the activities of the EFB in the field of environmental biotechnology.

Dr A.M. Cook (Institute of Microbiology, ETH Zürich) reported on current research programmes involving the isolation and characterization of pure microbial cultures mineralizing specific problem compounds, the identification of the relevant degradative pathways in such organisms and their use for the development of practical processes for the treatment of chemical waste at its source of production in chemical plants. He stressed the importance of sensitive and reliable analytical techniques to demonstrate quantitative and complete degradation. Pollutants presently under investigation at the ETH Zürich include *s*-triazines in wastewaters from herbicide production, azo dyes and stilbenes used in textile industry and chlorinated C1- and C2-hydrocarbons, which are widely used as solvents and intermediates in chemical syntheses.

Dr J. Zeyer (Département de Biochimie médicale, Université de Genève) reported on the activities of the Geneva group, whose main topic is the use of in vitro genetic techniques for the construction of *Pseudomonas* strains with new catabolic pathways for persistent compounds. Provided basic information on the biochemistry and the genetics of the relevant pathways is available, the in vitro approach offers the advantage of a high level of predictability as compared to the in vivo approaches for the evolution of new catabolic pathways. In the Geneva laboratory gene cloning techniques are being applied to the construction of strains degrading important industrial chemicals like haloaromatics, nitroaromatics and sulfoaromatics.

Dr G. Hamer (Institut für Gewässerschutz und Wassertechnologie, ETH Zürich) presented a project concerned with novel approaches to the denitrification of wastewater. Its goal is the establishment of a mixed culture system in which methane serves as a primary substrate and methanol, on intermediate of methane oxidation is used by *Hyphomicrobia* as substrate for the denitrification step. Since methane oxidation is oxygen-dependent whereas denitrification can be inhibited by oxygen, such a system is difficult to achieve. Dr Hamer presented data on a *Hyphomicrobium* isolate that, under defined culture conditions, denitrified in the presence of oxygen and, therefore, may be promising for use in the mixed culture system envisaged.

Dr O. Ghisalba (Ciba-Geigy AG, Basel) discussed biodegradation processes as alternatives to methods

for waste disposal currently employed in the chemical industry. He pointed out that in chemical plants up to 50% of the raw materials may end up as waste but that the exact chemical composition of this waste or the biodegradability of its components are not always known. This lack of information often precludes the application of microbiological processes for waste treatment but is of little consequence if waste is disposed of by incineration or other physical processes. Dr Ghisalba therefore strongly advocated efforts on a national basis to improve information exchange and to collect reliable data on the biodegradability of relevant waste chemicals.

The session was concluded by a report of Dr W. Samhaber (Sandoz AG, Basel) on the activities of the Working Party on Environmental Biotechnology of the EFB. This international group has organized a workshop on 'Environmental Biotechnology: Future Prospects' in October 1982. A report on the conclusions and recommendations of the meeting has been published and further meetings to assess the development of this field in Europe are planned. The European Working Party is also in the process of establishing a European expertise database for environmental biotechnology and advocates the formation of national Working Parties on environmental biotechnology to facilitate information transfer in the membership countries.

Foods microbiology and the limits of quality control

W. Schmidt-Lorenz, W. Hauert, G. Kiss, H. Schwab, H. S. Walker und M. Zeller

Einleitend wurden die gesetzlichen Grundlagen sowie der mit den Toleranz- und Grenzwerten verbundene

Auftrag des Gesetzgebers, den Konsumenten vor gesundheitsschädlichen Lebensmitteln und vor Täuschung, den reellen Lebensmittelhersteller vor unlauterer Konkurrenz und Wettbewerbsverzerrung zu schützen, ausgeleuchtet. Die Vertreter der Produktionsbetriebe, der Grossverteiler und des kantonalen Vollzuges äusserten sich über ihre Erfahrungen mit und in bezug auf die Anwendbarkeit der Toleranz- und Grenzwerte. Allgemein wurde anerkannt, dass es sich um ein brauchbares, die Lebensmittelhygiene sowie die Rechtssicherheit und Rechtsgleichheit förderndes Instrumentarium handelt. Bis auf wenige Ausnahme sind die festgelegten Werte realistisch und praktikabel. Schwierigkeiten ergibt vor allem die Auslegung des kürzlich revidierten Artikels 1, Absatz 4, der in den Augen der direkt Betroffenen erneute Rechtsungleichheit schaffen wird. Als sehr vordringlich werden weitere, produktspezifische Toleranzwerte angesehen. Ebenfalls Unsicherheit herrscht bei der Anwendung der gesetzlich festgelegten Werte im internen Bereich beim Zukauf von Roh- und Zwischenprodukten.

Die Diskussion konnte weitgehend Klarheit bei den verschiedenen Fragen schaffen. Der Begriff des «normalen Masses» und seine Anwendung wurde erläutert. Ebenso wurde festgestellt, dass die für die Verkehrstauglichkeit ausgearbeiteten Toleranz- und Grenzwerte nur erreicht werden können, wenn unter Berücksichtigung der Prozesskette an die Roh- und Zwischenprodukte betriebsinterne und somit strengere hygienisch-mikrobiologische Anforderungen gestellt werden. Abschliessend wurde festgehalten, dass mit der kommenden Revision des Kapitels 56 des Lebensmittelbuches methodisch die Grundlagen gelegt werden, um den Nachweis der Keimgruppen und die Sicherheit der Beurteilung von Lebensmitteln zu verbessern.

ABSTRACTS

A) Oral presentations

Guidelines for characterizing immobilized biocatalysts

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Recognizing the need for better information the EFB Working Party on Immobilized Biocatalysts has drawn up new guidelines for characterizing biocatalysts intended for preparative and industrial applications. These guidelines, which will be published in 'Enzymes and Microbial Technology', are the subject of this communication.

Briefly, it is proposed that investigations should contain answers to questions like the following. 1. What is the quantity of the free enzyme (organelle, cell) preparation needed to prepare a unit volume of wet catalyst? 2. What are the dimensions of the wet particles? 3. Are the observed reaction rates diffusion-limited? 4. In which way are the

reaction rates affected by changes in concentrations of the reactants in the concentration range of interest and how do these rates compare with those catalyzed by the same quantity of free catalyst? 5. Does the catalyst hold out promise for practical applications in terms of its mechanical (and other relevant) properties and also its stability under conditions of its intended use?

A new versatile computer system for clinical microbiology

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In September 1982 a minicomputer was installed at our department of bacteriology. The hardware includes a Point 4 Data Corporation Mark 5 central processing unit, 2 disk