Food Chemistry **15** (1984) 125–126

Afternoon Chairman's Comments

As the only industrial representative on the platform at this symposium, I am pleased to be asked to contribute to these proceedings. Sulphur dioxide is indeed an important chemical in the food industry.

Solutions of sulphur dioxide are used to *sanitise* surfaces, utensils and processing equipment.

Sulphur dioxide is an essential *process aid* in many parts of the food industry since, as the principal permitted volatile food preservative, it can be used to maintain hygiene during processing without needing to appear at high level in the finished product.

The selective action of sulphur dioxide in controlling fermentations—it favours fermentative yeasts over spoilage yeasts and useful malo-lactic acid-reducing fermentation over acetic acid production—makes it very important in wine and cider making. In making red wine, an additional advantage is the ability of sulphur dioxide to break down grape skin structure to facilitate easier extraction of red anthocyanins. In white wine making, sulphur dioxide prevents both enzymic and non-enzymic browning reactions which threaten product appearance.

The shortening effect of sulphur dioxide on wheat gluten enables an improved performance to be obtained from biscuit flour with this additive.

Without sulphur dioxide it would be very difficult to manufacture natural sausage skins under hygienic conditions.

As a *preservative*, sulphur dioxide has a uniquely wide range of activity, thanks to its multifunctionality. It is widely used in dried potato and other

vegetables and the excellent safety record of the British sausage, despite very wide distribution of this product type, is primarily due to this preservative.

Sulphur dioxide is at its most effective in acid solution both as an anti-microbial and as an anti-browning agent. Important applications include wines and other alcoholic drinks, soft drinks and fruit juices. Because of its high reactivity, the level of use of sulphur dioxide as a preservative is always a compromise between the higher level needed to maintain microbial stasis and to replace evaporative and other losses, and the lower level required to minimise unwanted chemical change in flavouring other systems. Effective levels used in drinks vary from 20 ppm to 350 ppm.

D. Hicks