

## Correspondence

## Letters to the Editors

## Resistant starch and dietary fiber

Dear Sir,

We have read this excellent presentation of the physical properties and biological impact of RS<sub>3</sub> in a paper entitled "Resistant starch—a review of the physical properties and biological impact of RS<sub>3</sub>" by Haralampu (2000), which appeared in *Carbohydrate Polymers*, 41 (2000), 285–292 and have the following comments which we feel are essential to the understanding of the relationship between resistant starch and dietary fiber.

1. Resistant starch does not complicate the determination of dietary fiber. Dietary fiber is simply, among other things, that part of the starch which is not digested by the enzymes of the small intestine used in the official AOAC method of analysis. It would have been helpful if the author listed the pertinent publications in the bibliography so the readers would follow his reasoning.

2. Asp, Furda, Schweizer and Prosky (1988), never stated that dietary fiber was "non-starch polysaccharides" (NSP) in that paper or any other time in any other publication.

3. Resistant starch as defined in (1) above is a dietary fiber as determined by the official AOAC dietary fiber method. However, this is only a part of the "resistant starch" defined by the Englyst procedure (Englyst, Kingman & Cummings, 1992). A study (Schweizer, 1989) showed that all the starch in the residue from mixed diets isolated in the enzymatic-gravimetric method, developed collaboratively by the AOAC, escapes digestion and absorption in the small intestine. Only after being dispersed in a special treatment step with a powerful solvent, like dimethyl sulfoxide (DMSO), is the resistant starch susceptible to enzymatic digestion.

4. There appears to be some confusion as well as lack of evidence in the statements made regarding the two analytical methods that have been accepted in the US by the FDA and in other countries for labeling the dietary fiber contents in foods (AOAC 985.29 and 991.43, "old" and "new", respectively). There is no difference in "pH for the enzymatic digestions" between these methods, rather the use of MES-TRIS buffer in 991.43 allows a change in pH to occur through a change in temperature. The author has provided no experimental or literature support for the suggestion that there is a difference in RS or oligosaccharide contents of the dietary fiber as measured by the two methods. Furthermore, we are aware of no substantiated evidence that there is any

significant difference in TDF values as measured by the two methods over all foods.

5. "Adhering to the formal definition of dietary fiber as non-starch polysaccharides requires several refinements to the AOAC/AACC methods." Where did the author obtain this "formal" definition? The AOAC/AACC methods are official in almost all countries with the exception of the UK; however, there has been recently a change in the UK position. The Ministry of Agriculture, Fisheries, and Food (MAFF)[the equivalent to the US Food and Drug Administration], Joint Food Safety and Standard Group (JFSSG) now proposes adopting the AOAC International methodology for food labeling purposes. Revised claims criteria have also been developed to reflect the increased values produced by this method of analysis (Hignett, 1999).

The AOAC methods for dietary fiber analysis are now accepted universally; however, the resistant starch definitions (and analysis) will have to undergo further testing before the exact nature of their physiological effects can be delineated.

## References

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