

Total Dietary Fiber (CODEX Definition) by Enzymatic-Gravimetric Method and Liquid Chromatography: Total (AOAC 2009.01) or Total plus Soluble and Insoluble (AOAC 2011.25).

Canada now requires the use of methods AOAC 2009.01 or AOAC 2011.25 for Dietary Fiber labeling purposes. Below is a summary of the differences between the traditional TDF and newest TDF methods.

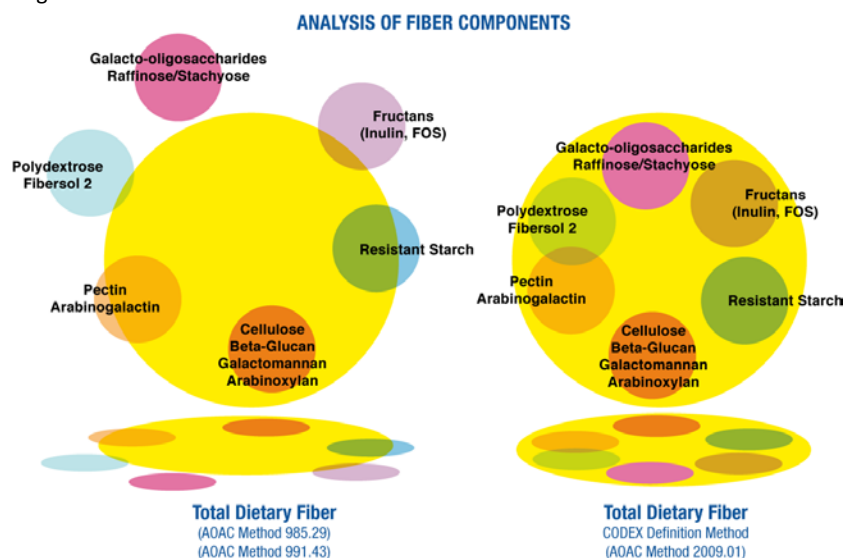
Primary differences from Traditional Method (AOAC 991.43):

New Method uses an enzyme digest protocol more consistent with human digestive system –

- Traditional Method digests with an enzyme at temperatures near the boiling point of water.
- New Method digests samples by a mammalian pancreatic alpha-amylase at near human body temperature.
- **Impact:** A small amount of resistant starches and other fibers that were degraded and lost in the old method are now recovered in the new method as dietary fiber.

New Method uses liquid chromatography to quantify low-molecular weight soluble dietary fibers (resistant oligosaccharides; RO) –

- Traditional Method only recovered soluble fibers that precipitated with ethanol.
- New Method recovers soluble fibers that do not precipitate with ethanol and reports everything with three or more carbohydrate units as dietary fiber.
- **Impact:** Total dietary fiber reported by the New Method includes resistant oligosaccharides not included in the Traditional Method.
 - No more need for customers to add RO amounts determined by the resistant oligosaccharides method (AOAC 2001.03), the fructans method (AOAC 997.08), the polydextrose method (AOAC 2000.11), or the galactooligosaccharides (GOS) method (AOAC 2001.02) to dietary fiber amounts determined by AOAC 991.43 for Nutrition Labeling.
 - While the above methods are no longer necessary for total fiber, these methods, as well as the resistant starch method (AOAC 2002.02) can be used to determine individual components of Total Dietary Fiber, or to track addition of ingredients for scientists doing formulation work.



For method details, please visit <http://www.medallionlabs.com/TestLibrary> or reference the following articles:

Determination of Total Dietary Fiber (CODEX Definition) by Enzymatic-Gravimetric Method and Liquid Chromatography: Collaborative Study, Barry V. McCleary, Jonathan W. DeVries, Jeanne I. Rader, Gerald Cohen, Leon Prosky, David C. Mugford, Martine Champ, Kazuhiro Okuma, JAOAC Int'l 93 (1) pp 221-233 (2010).

Validating Official Methodology Commensurate with Dietary Fiber Research and Definitions, J.W. DeVries in Dietary Fiber-new frontiers for food and health Edited by Jan Willem van der Kamp, Julie Jones, Barry McCleary and David Topping. Wageningen Academic Publishers, The Netherlands (2010). pp 29-48.

Simultaneous Ion Removal and Quantitation of Low-Molecular Weight Dietary Fiber from High Molecular Weight Dietary Fiber Filtrates Using Liquid Chromatography, Brett E. Post, Michael R. Marshak, and Jonathan W. DeVries, JAOAC Int'l 93 (1) pp 234-242.

Historical Perspective as a Guide for Identifying and Developing Applicable Methods for Dietary Fiber, Jonathan W. DeVries and Jeanne I Rader, Journal of AOAC International, 88(5), pp1349-1366, (2005).