

Ask The Expert

Not All Chocolate Is Created Equal: The Complexity Of Cocoa Processing

by Harold Schmitz, Ph.D.

(NAPS)—**Q:** I've heard that chocolate can be good for you. Is one type of chocolate better for you than another?

A: Scientists have discovered potentially beneficial compounds in chocolate called flavonoids. Flavonoids occur naturally in cocoa, we believe, to help protect the plant from pests and disease. Their presence gives



Harold Schmitz, Ph.D.

the cocoa an astringent, or sharp and pungent taste. Even before cocoa undergoes its transformation from a bean (or seed) to chocolate, selecting the right variety of bean is important to maximizing the flavonoids in the finished products. When cocoa is processed into your favorite chocolate products, it goes through several steps to eliminate the astringent taste, and therefore, the levels of flavonoids are often decreased.

These steps include:

•**Fermentation**—The longer the cocoa beans are fermented, the more flavonoids are lost and the less astringent the beans will be.

•**Drying**—Traditionally cocoa beans are dried in the sun. The largest loss of flavonoids usually occurs during sun drying, which may take up to two weeks. Modern technology has allowed for beans to be dried mechanically which may reduce the loss of flavonoids.

•**Roasting**—Roasting temperatures and duration of roasting time significantly affect the flavor and flavonoid content of chocolate. Higher temperatures decrease the flavonoid content to a greater extent, but flavonoids are also lost

the longer the beans are roasted.

•**Alkalizing ("Dutching")**—Alkali is sometimes added to chocolates and cocoa powders for flavor. This process, which increases the pH of the product, has a negative impact on flavonoid levels.

•**Conching**—This step has minimal impact on flavonoid level and is mainly for smoothing out the texture and rounding out flavors.

When chocolate manufacturers begin to select their cocoa beans and start the process of making chocolate products, they are most concerned with flavor. However, as research on the potential health benefits of chocolate flavonoids unfolds, it is becoming clear to certain companies that preserving these compounds, while maintaining the flavor that people love, is important. Mars, Incorporated, for example, has proprietary methods of processing cocoa beans so that the natural levels of flavonoids are maintained in their chocolate products. The company even labels their products with the *Cocoapro*[™] mark, which signifies their promise that the product has undergone a proprietary process. You can learn more by visiting the *Cocoapro*[™] Web site at www.cocoapro.com.

Harold Schmitz, Ph.D., is a group manager of analytical and applied sciences at Mars, Incorporated and a visiting faculty member of the University of California, Davis, Department of Nutrition. He has published more than 25 papers in contemporary, peer-reviewed scientific journals.