

SCHOOL OF HEALTH
DEPARTMENT OF NUTRITION

DEC 22 REC'D

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Elder Eric W. Howse, Director
World Foods Service
General Conference of Seventh-day Adventists
6840 Eastern Avenue, N. W.
Washington, D. C. 20012

Dear Elder Howse,

Dr. Hardinge has asked me if I would send any information to you that I have on cocoa. I suppose chocolate and cocoa will always be on the questionable list as a flavoring, since it is usually mixed with milk and sugar, and because of its saturated fat content, and possible allergic properties for some people. In scientific literature some studies indicate that cocoa may have 50% as much caffeine as coffee. However, when we fed rats 5%-10% coffee or the caffeine equivalent, we obtained a 60% growth inhibition on the 5% coffee or caffeine and 100% growth inhibition on the 10% coffee or caffeine. It appeared that the caffeine was the primary factor that produced the growth inhibition. When we fed 10% cocoa to rats we obtained less than 10% growth inhibition.


Upon further examination of the techniques used for determining cocoa alkaloids we found that by solvent extraction most of the alkaloid that was actually being measured and called caffeine was theobromine. We developed the enclosed method for differentiating between caffeine and theobromine in chocolate preparations, and found that the caffeine content, if any, was very small in chocolate or cocoa. We gave extracts of cocoa to Dr. Hardinge to check in a spider assay study. The study showed that the spiders spun a normal web, and therefore, we questioned if there was any caffeine or possibly only a small amount in the cocoa. We have not completed the study, so it is difficult to give you any final statement on the spider studies. Certainly if cocoa contains caffeine it would not be anymore or as much as you would find in Sanka coffee.

Theobromine does not have the toxic effect that caffeine does on the central nervous system. However, it does appear to be a mild kidney stimulant. And often pediatricians will recommend to mothers that have children who wet their beds, to refrain from the use of cocoa type beverages, especially at night. While I would not eat cocoa like I would eat bread, it certainly would not be placed in the same category with caffeine beverages like coffee and tea.

Although cocoa and chocolate contain saturated fat they do not appear from reports in the literature to raise serum cholesterol levels. However, I would like to see more work done in this area.

I trust this information will be helpful to you.

Sincerely yours,



U. D. Register, Ph.D.