

Chapter 39

Quantitative Aside 39.1--Obtaining Taxol

In the 1960s, the National Cancer Institute (NCI) began purifying a compound called taxol from the bark of the Pacific yew, *Taxus brevifolia*, which can stand 7.5 m tall. A very large amount of bark is required to produce pure taxol that can be used clinically to treat cancer. For example, 1200 kg of bark yielded only 10 g of pure taxol in 1969. In 1977, the NCI asked the U.S. Department of Agriculture for 3000 pounds of Pacific yew bark. Removing the bark from a tree is lethal because of the destruction of the phloem. To obtain 3000 kg of bark, 1500 trees were required. By 1988, the NCI estimated 360,000 yew trees would be needed annually to treat cancer patients. How many grams of pure taxol can be purified from 360,000 yew trees using the 1969 protocol?