

Pathways Involved in the Biosynthesis and Catabolism of Caffeine in *Coffea* and *Camellia*

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SUMMARY

Recent investigations on caffeine biosynthesis pathways in leaves of *Coffea arabica* and *Camellia sinensis*, using both in vitro and in vivo test systems, are reviewed with special interest being focused on the proposal that the *N*-7 methyl acceptor is xanthosine monophosphate rather than xanthosine. In addition, studies on the isolation on the *N*-methyltransferases involved in caffeine biosynthesis which have succeeded in separating *N*-7 methyltransferase activity from the *N*-1 - and *N*-3 methyltransferase activities are discussed. Purine alkaloid catabolism pathways are also discussed in the light of recent evidence demonstrating salvage of 3-methylxanthine and xanthine for the resynthesis of not only theophylline but also caffeine via theobromine. These pathways operate in leaves of tea but not those of coffee.