Accumulation of Tetracoumaroyl Spermine in *Matricaria chamomilla* during Floral Development and Nitrogen Deficiency

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The new natural polyamine conjugate 1*N*,5*N*,10*N*,14*N*-tetracoumaroyl spermine (tetracoumaroyl spermine) recently isolated from chamomile (*Matricaria chamomilla* L.) flower heads is applicable for the treatment of several human disorders such as depression and anxiety. High variability in the level of tetracoumaroyl spermine is found in commercial tisanes. Accumulation of tetracoumaroyl spermine was tested during floral development, and nitrogen deficiency was chosen as its putative limiting environmental factor. It was observed that tetracoumaroyl spermine is present mainly in tubular flowers, reaching its maximal content during the 3rd phase of flowering when the corollae of tubular flowers start to open. The later observed decrease could result from a release of pollen that also contains a considerable amount of tetracoumaroyl spermine. It is likely that tetracoumaroyl spermine plays an important role in pollen development, and so, despite overall N-deficiency in the plants, tetracoumaroyl spermine is accumulated at the same or even higher rate than in the flowers of the N-sufficient control.

Key words: Matricaria chamomilla, Tetracoumaroyl Spermine, Nitrogen Deficiency