

Two-Step Synthetic Approach to 6-Substituted Pyrido[2,3-*d*]pyrimidine(1*H*,3*H*)-2,4-diones from 6-Amino-, 6-Alkylamino-, and 6-Arylamino-1,3-dimethyluracils*

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The Mannich reaction of 7-aryl-5,6-dihydropyrido[2,3-*d*]pyrimidines **3**, easily accessible by condensation of 6-amino-1,3-dimethyluracil (**1**) with Mannich bases **2a–c**, gives rise to a mixture of 7-aryl-6-(*N,N*-dimethylaminomethyl)pyrido[2,3-*d*]pyrimidines **6** and **7** as well as 1,2-bis-(7-arylpyrido[2,3-*d*]pyrimidin-6-yl)ethane **13** the ratio of which depends on the reaction conditions and the amine used. 6-Alkylamino-1,3-dimethyluracils **15–18** were converted to the corresponding 5-(3-oxo-3-phenylpropyl)uracils **19–22** by condensation with the Mannich base **2a**. Ring closure of **19–22** was performed by Vilsmeier formylation to afford the 8-alkyl- and 7,8-diaryl-5,8-dihydropyrido[2,3-*d*]pyrimidine-6-carbaldehydes **9–12** *via* the corresponding iminium salts **27–30**.

Key words: Cyclization, 6-Amino-1,3-dimethyluracil, Mannich Bases, Pyrido[2,3-*d*]pyrimidines, Ene Reaction