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A facile and sustainable synthesis of 5-amino-1,3-diaryl-1*H*-pyrazole-4-carbonitrile derivatives using aqueous extract of waste *Neem* leaves

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ABSTRACT A green and efficient method has been developed for the synthesis of 5-amino-1,3-diaryl-1*H*-pyrazole-4-carbonitrile derivatives using an aqueous extract of waste *neem* (*Azadirachta indica*) leaves in 60–90% yield. The aqueous extract gave better results in comparison to the extracts with other solvents such as chloroform, ethyl acetate, and methanol. The synthetic method has been optimized with respect to plant extract quantity, solvent-based extract, reusability, and yield. The developed protocol is a step towards green chemistry following key requirements such as waste prevention, atom economy, safer solvents, and use of renewable feedstock.

KEYWORDS Plant extract, *Azadirachta indica, Neem*, Pyrazole, Green synthesis.

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