

P13: Determination of Azadirachtin in Neem oil from different origins by HPLC-DAD

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Introduction: Neem (*Azadirachta indica*) is an Indian tree recognized for its activity as pesticide, as well as several pharmacological properties. Among the compounds isolated from Neem, Azadirachtin (AZA) was identified as the main bioactive compound. AZA assumes its maximum concentration at seeds, portion which is used as the primary source to obtain the Neem oil.

Objectives: Quantification of AZA in Neem oil samples from different origins by HPLC-DAD.

Materials and Methods: The determination of AZA was performed by liquid chromatography with diode array detection (HPLC-DAD). Separation was achieved using a RP-18 column and a mobile phase containing MeOH:acetonitrile:H₂O (35:15:50), at a flow rate of 1 mL min⁻¹. AZA was monitored at 215 nm. Oil samples were analysed after extraction with acetonitrile.

Results and Discussion: The content of AZA-A, B and A+B in the oil samples ranged from 58.53 to 843.42, 12.52 to 800.23 and 104.20 to 1642.17 mg kg⁻¹, respectively. These results were below the values reported in literature. The content of AZA was not similar in all samples, being conditioned by the seeds quality and the extraction process. Furthermore, it was possible to infer that two of the samples (one from India and one from Brazil) had inferior quality, given their reduced AZA content, whereas a second sample from India had extremely satisfactory AZA values and thus was considered as a good quality oil.

Conclusion: The analysed Neem oil samples contained AZA in low quantities, with exception of one of the samples obtained from India. Although these results present a great contribution, further studies are necessary to better understand the analysed products.

References

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