QUALITY ANALYSIS OF ALKALOIDS OF SOME PLANTS GROWING IN THE REPUBLIC OF GUINEA

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Abstract: The qualitative analysis of the alkaloid content of 51 samples of plant species belonging to 23 botanical families, collected in the Republic of Guinea was carried out. Among them, 5 families contain an abundance of alkaloids: they are Annonaceae, Lauraceae, Menispermaceae, Rhamnaceae and Rutaceae.

Key words: Analyse qualitative, Alkaloids, Botanical families, Phytochemical interest, Republic of Guinea, University of Kindia.

Gvineya Respublikasida yig'ilgan 23 ta botanik oilasiga mansub o'simlik turlarining 51 namunasi tarkibida alkaloid mavjudligiga sifat tahlili o'tkazildi. Ular orasida Annonaceae, Lauraceae, Menispermaceae, Rhamnaceae va Rutaceae kabi 5 ta botanik oilaga mansub o'simliklar tarkibida ko'p miqdorda alkaloid mavjudligi aniqlandi.

Kalit so'zlar: Sifat tahlili, alkaloidlar, o'simlikliklar oilalari, fitokimyoviy qiziqish, Gvineya Respublikasi, Kindia Universiteti.

Проведен качественный анализ содержания алкалоидов в 51 видов растений относящихся 23 ботаническим семействам, собранных в Гвинейской Республике. Среди них 5 семейств содержат большое количество алкалоидов: это Annonaceae, Lauraceae, Menisper-maceae, Rhamnaceae и Rutaceae.

Ключевые слова: качественный анализ, алкалоиды, ботанические семейства, фитохимический интерес, Гвинейская Республика, Киндийский университет.

1. INTRODUCTION

The object of our work is the qualitative research of the alkaloid content of plants in the form of trees, shrubs and climbing plants of Guinea [1-4]. The plant

samples studied (leaves, bark, stems, etc.) were collected at the Botanical Garden of Conakry and at the edge of the forest near the University of Kindia.

Alkaloid, a natural substance isolated from plants, of a basic nature, endowed with physiological activity and whose molecule generally contains one or more nitrogenous heterocycles.

Nearly 15000 alkaloids have been identified [7]. Many known alkaloids are used in medicine. For example, atropine from belladonna causes dilation of the pupil; poppy morphine suppresses pain; quinine is a remedy for malaria. Finally, it should be noted that nicotine is a powerful insecticide [2-4].

2. RESEARCH METHODOLOGY

We have qualitatively analyzed the alkaloid content of nearly 51 plant species belonging to 23 botanical families very widespread in the Kindia region [1]. . Among them, 5 families contain an abundance of alkaloids: they are *Annonaceae, Lauraceae, Menispermaceae, Rhamnaceae* and *Rutaceae* (Table 1).

The alkaloid composition was determined in the conventional way [5-6].

2-3 g of study plant (pulverized and dried leaves) were placed in a flask (50 ml capacity) and 10-15 ml of 5% sulfuric acid solution (H_2SO_4) was poured into it. The contents were left for 4-5 hours at room temperature. After filtration, a few drops of silicon-wolframic acid solution (H_2SiWO_6) were added to the filtrate. The formation of an abundant precipitate indicates the presence of a considerable quantity of alkaloids in the plant studied.

3. RESULTS

Table 1 : Qualitative determination of alkaloids in proposed plants

№ Order	Family, genus and species	Plant organ	Content of alkaloids *
	1. Annonaceae family		
1.	Annona muricata L.	Leaf Bark	+++ +++

2.	Annona senegalensis Pers.	Leaf Bark	+++ +++
3.	Cananga odorata (Lam.) Hook. F & Thoms.	Leaf Bark	+++ +++
4.	Xylopia aethiopica A. Rich.	Leaf Bark	+++ +++
5.	Uvaria chamae P. Beauv.	Leaf	+++
6.	Cleistopholis patens Benth.	Leaf	+++
	2. Anacardiaceae family		
7.	Mangifera indica L.	Leaf	+
8.	Anacardium occidentale L.	Leaf	+
9.	Spondias monbine L.	Leaf	+
	3. Family of Apocynaceae		
10.	Thevetia neriifolia Juss	Leaf	++
11.	Tabernanthe iboga H. Br..	Leaf	++
12.	Landolphia incerta (K. Shum.) Pichon.	Leaf	+++
13.	Landolphia dulcis (Sabine.) Pichon.	Leaf	++
14.	Landolphia senegalensis Korschy.	Leaf	++
15.	Voacanga africana Stapf.	Leaf	+++
16.	Rauvolfia vomitoria Afz.	Leaf	+++
	4. Bromeliad family		
17.	Anonas comosus L.	Leaf	+
	5. Caesalpiniaceae family		
18.	Dialium guineense Willd.	Leaf	-
19.	Guibourtia copallifera J. J. Benn.	Leaf	-
	6. Clusiaceae family		
20.	Carcinia mangostana L.	Leaf	+
	7. Family of Combretaceae		
21.	Combretum micrantum Shumach& Thonn.	Leaf	-
22.	Terminalia ivorensis A. Chev.	Leaf	-

	8. Euphorbiaceae family		
23.	Hevea brasiliensis (Kunth) Mill. Arg.	Leaf	++
	9. Caricaceae family		
24.	Carica papaya L.	Leaf	+++
	10. Lauraceae family		
25.	Persea americana Mill.	Leaf	++
26.	Beibchmiea diamanvi L.	Leaf	+++
27.	Cinnamonum zeylanicum Ness.	Leaf	++
	11. Meliaceae family		
28.	Entandrophragma angolense (Welw.) DC.	Leaf	-
29.	Carapa procera DC.	Leaf	-
	12. Menispermaceae family		
30.	Dioscoreophyllum cumminsii (Stapf.) Diels.	Leaf	+++
30.	Dioscoreophyllum cumminsii (Stapf.) Diels.	Leaf	+++
31.	Cocculuis pendulus Diels.	Leaf	+++
32.	Triclisia patens Oliv.	Leaf	+++
	13. Mimosaceae family		
33.	Acacia mangium Willd.	Leaf	++
	14. Moraceae family		
34.	Ficus ingens Miq.	Leaf	++
35.	Ficus congensis Thunb.	Leaf	++
	15. Moringaceae family		
36.	Moringa oleifera Lam.	Leaf	-
	16. Family Oxalidaceae		
37.	Averrhoa carambola L.	Leaf	-
38.	Averrhoa bilimbi Willd.	Leaf	-
	17. Rhamnaceae family		

39.	Ziziphys mauritiana Lam.	Leaf	+++
40.	Gouania longipetala Hemsl.	Leaf	++
41.	Ventilago africana Exell.	Leaf	++
	18. Rhizophoraceae family		
42.	Anisophyllea laurina R. Br. Ex Sabine	Leaf	-
	19. Rutaceae family		
43.	Zanthoxylum gilletii (De Wild.) Waterman	Leaf	Skimianine, anonaine
44.	Zanthoxylum leprieurii Guill.	Leaf	+++
45.	Zanthoxylum viride (A.Chev.) Waterman	Leaf	++
46.	Fagara zanthoxyloides Lam.	Leaf Bark	+++ +++
	20. Sterculiaceae family		
47.	Cola cordifolia (Cav.) R. Br.	Leaf	-
48.	Cola reticulata A. Chev.	Leaf	-
	21. Sapotaceae family		
49	Achras sapota L.	Leaf	-
	22. Solanaceae family		
50	Solanum stramonium L.	Leaf	-
	23. Verbenaceae family		
51.	Gmelina arborea L.	Leaf	-

* Content of alkaloids: + + + - in abundant quantity; + + - in small quantity;
+ - in insignificant quantity; (-) - absence of alkaloids

A **B** **C**

Photos of the few plants analyzed: A) Annona muricata L ; B) Xylopia aethiopica A. Rich; C) Carica papaya L.

4. CONCLUSION

In total, 51 species of plants belonging to 23 botanical families were qualitatively examined for the first time by us. Among them, 5 families contain an abundance of alkaloids. These are *Annonaceae, Menispermaceae, Lauraceae, Rutaceae and Rhamnaceae.*

It should be noted that in the future the study of the alkaloid content of the following species: *Annona muricata L[8]., Annona senégalensis Pers[9], Cananga odorata (Lam.) Hook.* F., *Xylopia aethiopica A. Rich., Persea americana Mil., Dioscoreophyllum cumminsii (Stapt.) Diels., Cocculuis pendulus Diels. Ziziphus mauritiana Lam., Fagara zanthoxyloides Lam.,* Solanum stramonium L. would be of phytochemical interest, because these plant resources contain a considerable quantity of alkaloids belonging to several chemical structural types.

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