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CHEMICAL STUDIES ON PLANT GUMS
FOUND IN SRI LANKA

BY

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ABSTRACT

The gums of Moringa oleifera (Murunga), Acacia chundra (Kihiriya), and Feronia limonia (Divul), were selected for the study of their chemistry and applications. TLC and HPLC analysis was performed for the qualitative and quantitative analysis of the monomer constituents of the polysaccharides. In gums of Moringa, D-galactose (41.5%), L-arabinose (26.9%), D-xylose(25.9%), L-rhamnose(5.6%), and D glucuronic acid (traces) were found to be present as the monosaccharide units. In gum of Kihiriya, the purified polysaccharide consisted of D-galactose (32.75 %), L-arabinose (38.2%) and D-glucuronic acid (29.15 %). In the gum of Divul D-galactose (36.4%), L-arabinose (34.2%), D-xylose (6.1%) and D-glucuronic acid (23.3%) were present as the monomer constituents. TLC, PC and UV-VIS spectra showed that gum of Moringa contained cyanidin as the anthocyanidin



where in Kihiriya the anthocyanidin was identified as pelargonidin. In Divul the phenolic fraction did not contain any anthocyanidin.

Several tests were done in order to evaluate for their adhesive, emulsifying, and suspending properties. Instrone tensometer was used to evaluate the adhesive properties of the three gums.

Dilution test, dye solubility test, microscopic examination and the possibility of reconstitution tests were done for the feasibility studies on use of these gums as emulsifiers.

The sedimentation volume and the redispersion number was tested to evaluate the use of these gums as suspending agents.

TABLE OF CONTENTS

	Page
LIST OF TABLES	viii - xi
LIST OF FIGURES	xii - xiv
ACKNOWLEDGMENTS	xv - xvi
ABSTRACT	xviii- xix
<u>CHAPTER 1 : INTRODUCTION</u>	 1 - 54
1.1 Objective.	1 - 3
1.2 General Introduction of gums.	3 - 4
1.3 Definition of gums.	4 - 5
1.4 The origin of gum exudates.	6 - 8
1.5 Chemistry of gums.	8 - 15
1.6 Applications of gums	15 - 54
1.6.1 Food industry.	16 - 20
1.6.2 Paints.	20 - 21
1.6.3 Inks.	21 - 22
1.6.4 Lithography.	23 - 24
1.6.5 Textile.	24 - 25
1.6.6 Pharmaceuticals and Medicine.	25 - 27

1.6.7	Suspensions and Dispersions.	27 - 30
1.6.7.1	Theoretical aspects of suspensions.	30 - 38
1.6.8	Emulsions.	38 - 41
1.6.8.1	Classification of emulsions.	41
1.6.8.2	Theoretical aspects of emulsions.	41 - 47
1.6.8.3	Emulsion type and Detection.	48 - 49
1.6.9	Adhesives.	49 - 51
1.6.9.1	Theoretical aspects of adhesion.	52
1.6.9.2	Setting of gums.	52 - 54

CHAPTER 2 : CLASSIFICATION AND MORPHOLOGY OF THREE PLANTS 55 - 66

2.1	Moringa (Drumstick).	55 - 60
2.1.1	Classification of <u>Moringa Oleifera</u>	55
2.1.2	Synonims of Moringa.	56
2.1.3	Morphology of the plant of <u>Moringa</u> <u>Oleifera</u>	57 - 58
2.1.4	Distribution.	58
2.1.5	Uses.	59 - 60
2.2	Kihiriya.	60 - 64
2.2.1	Classification of <u>Acacia Chundra</u>	60
2.2.2	Synonims of Kihiriya.	60
2.2.3	Morphology of the plant of <u>Acacia Chundra</u>	61 - 62

2.2.4	Distribution.	62 - 63
2.2.5	Uses.	62 - 63
2.3	Divul (wood apple)	63 - 66
2.3.1	Classification of <u>Feronia limonia</u>	63
2.3.2	Synonims of Divul	63 - 64
2.3.3	Morphologly of the plant of <u>Feronia limonia</u> .	64 - 65
2.3.4	Distribution	66
2.3.5	Uses	66
 <u>CHAPTER 3 : RESULTS AND DISCUSSION</u>		 67 - 171
3.1	Collection, Drying and Storage of gums.	67 - 68
3.2	Identification and Characterization of gums.	69 - 95
3.2.1	Identification and Characterization by Physical Characteristics.	69 - 71
3.2.2	Identification and characterization by Chemical tests.	72 - 79
3.2.3	Identification and Characterization by TLC methods.	80 - 81
3.2.4	Identification and characterization by TAS method.	82 - 95
3.3	Physico - Chemical studies of gums.	96 -104
3.3.1	Determination of Loss on drying of gums.	96
3.3.2	Determination of the total ash content.	97

3.3.3	Determination of acid insoluble ash content.	98
3.3.4	Determination of the nitrogen content.	99
3.3.5	Determination of the bark and other foreign organic matter.	100
3.3.6	Determination of Hot water insoluble matter	101
3.3.7	Determination of Hot water soluble matter.	102
3.3.8	Determination of pH of the gum solution.	103
3.3.9	The summary of physico - chemical properties of gums.	104
3.4	Phyto - Chemical screening of gums of Moringa, Divul and Kihiriya.	105-110
3.4.1	Screening for Tannins and Polyphenols.	105-107
3.4.2	Screening for Flavonoids.	107-109
3.4.3	Screening for other secondary metabolites.	109-110
3.5	Separation and Purification of Polysaccharides.	111-116
3.6	The analysis of Purified Polysaccharides of gums	117
3.6.1	The analysis of Purified Polysaccharides of gum of Moringa	117-125
3.6.1.1	TLC analysis of Purified Polysaccharides of gum of Moringa.	117-123
3.6.1.2	HPLC analysis of purified Polysaccharides of gum of Moringa.	123-125

3.6.2	The analysis of Purified Polysaccharides of gum of Kihiriya.	126-133
3.6.2.1	TLC analysis of Purified Polysaccharides of gum of Kihiriya.	126-131
3.6.2.2	HPLC analysis of Purified Polysaccharides of gum of Kihiriya	131-133
3.6.3	The analysis of purified polysaccharides of gum of Divul.	134-141
3.6.3.1	TLC analysis of Purified Polysaccharides of gum of Divul.	134-139
3.6.3.2	HPLC analysis of Purified Polysaccharides of gum of Divul.	140-141
3.7	Isolation and Identification of Proanthocyanin of gums of Moringa and Kihiriya.	142-150
3.8	Effectiveness as suspending agents.	151-162
3.8.1	Effectiveness as suspending agents on BPC suspension mixtures.	151-156
3.8.2	Effectiveness as suspending agents on general purpose suspensions	157-162
3.9	Effectiveness as Emulsifying agents	163-166
3.10	Effectiveness of gums of Moringa, Kihiriya, and Divul as adhesives.	167-171

<u>CHAPTER 4</u> :	<u>EXPERIMENTAL</u>	172-212
4.1	Collection, Drying and Storage of gums	172
4.2	Identification and Characterization of gums	172-182
4.2.1	Identification and Characterization by Physical characteristics	172-173
4.2.2	Identification and characterization by Chemical tests	173-174
4.2.3	Identification and characterization by TLC methods	174
4.2.4	Identification and characterization by TAS method	175-182
4.3	Physico-chemical studies of gums	183-189
4.3.1	Determination of Loss on Drying	183
4.3.2	Determination of the total ash content	183-184
4.3.3	Determination of Acid insoluble ash content	184-185
4.3.4	Determination of Nitrogen content	185-186
4.3.5	Determination of Bark and other foreign organic matter	186-187
4.3.6	Determination of Hot water insoluble matter	188
4.3.7	Determination of Hot water soluble matter	188-189
4.3.8	Determination of pH of the gum solutions	189
4.4	Phytochemical-screening of gums of Moringa, Divul and Kihiriya	190-196

4.4.1	Screening for tannins and polyphenolics	190-191
4.4.2	Screening for flavonoids	191-192
4.4.3	Screening for other secondary metabolites	192-196
4.5	Separation and Purification of Polysaccharides of gums	197-200
4.6	Analysis of polysaccharides of gums	201-202
4.6.1.1)	
4.6.2.1) TLC analysis of polysaccharides of gums	201
4.6.3.1)	
4.6.1.2)	
4.6.2.2) HPLC analysis of polysaccharides of gums	202
4.6.3.2)	
4.7	Isolation and Identification of Proanthocyanin of gums	202-204
4.8	Effectiveness as suspending agents	205-209
4.8.1	For BPC Suspension mixtures	205-207
4.8.2	For general purpose Suspension mixtures	207-209
4.9	Effectiveness as Emulsifying agents	209-210
4.10	Effectiveness as adhesives	210-212
 <u>CHAPTER 5 : CONCLUSION</u>		 213-214
 <u>BIBLIOGRAPHY</u>		 215-229
 <u>ADDENDUM</u>		 225-226