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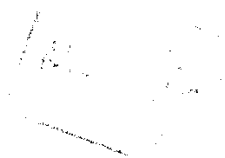


A THESIS
ENTITLED



**PALM TREE AS A SOURCE FOR THE PRODUCTION
OF CELLULOSE PULPS AND THEIR APPLICATION**

PRESENTED
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CONTENTS

	Page
AIM OF THE WORK	
ABSTRACT	
SUMMARY	
INTRODUCTION	
1. Cellulose	1
1.1. Cellulose occurrence and uses	1
1.2. Molecular structure of cellulose	1
1.3. Chain length and Molecular weight of cellulose	2
2. Pulping	
2.1. Types of pulping processes	3
2.1.1. Mechanical Pulping	3
2.1.1.1. Thermomechanical pulping	3
2.1.1.2. Chemimechanical pulping	4
2.1.1.3 Chemithermomechanical pulping	5
2.1.2. Semichemical pulping: NSSC process	6
2.1.2.1. Chemical Treatments other than the NSSC process	6
2.1.3. Alkaline pulping	6
2.1.3.1. Soda process	8
2.1.3.2. Sulfate process	10
2.1.4. Sulfite pulping	
2.1.5. Pulping with organic reagents (organosolv pulping)	13
	16
3. Pulp Bleaching	17
3.1. Bleaching Methods	19
3.1.1. Single-stage Hypochlorite Bleaching	19
3.1.2. Multistage Bleaching	19
4. Paper	22
4.1. Preparation of Laboratory Hand-Made paper	22
4.1.1. Beating	22
4.1.2. Sheet Formation and Making	23
5. Lignin	24
5.1. Occurrence of Lignin	24

	Page
4.2 The structure of lignin	25
5.3 Isolation of lignin	30
6 Lignosulfonate	32
6.1 Lignosulfonate as Dispersing Agents for Dyes	33
7 IR spectroscopy of Lignin	36
EXPERIMENTAL	
1 Pulping	39
1.1 Preparation of the sample	39
1.2 Cooking process	39
2 Bleaching of pulp	39
2.1 Extraction by soda	39
2.2 Hypochlorite step	39
2.3 Chlorite step	40
3 Chemical Analysis	40
3.1 Wax and Resin	40
3.2 Hollowcellulose	41
3.3 α -cellulose estimation	42
3.4 Extractable of Hemicellulose	42
3.5 Lignin Estimation	42
3.6 Ash content	43
3.7 Permanganate Number	43
4 Physical Analysis	44
4.1 IR spectra of the pulp	44
4.2 Determination of the Relative viscosity of the pulp	44
5 Paper	45
5.1 Paper sheet Making	45
5.1.1 Beating and Disintegration	45
5.1.2 Sheet formation	45
5.2 Physical Properties of paper and its testing	45
5.2.1 Grammage (Basis weight)	46
5.2.2 Thickness	46

	Page
5.2.3. Tensile Strength	46
5.2.4. Bursting Strength	47
5.2.5. Tear Resistance	47
5.3. Optical testes	48
5.3.1. Brightness	48
5.3.2. Opacity	48
6. Isolation of lignin from soda cooking of palm leaves	49
7. Sulfonation of soda lignin	49
7.1. Sulfonation of lignin under reflux	49
7.2. Sulfonation of lignin at 100 °C and 140°C	49
8. Isolation of lignosulfonate from sulfite cooking of palm leaves	50
9. Analysis of lignin and sodium lignosulfonate	50
9.1. Determination of solid content	50
9.2. Determination of viscosity	50
9.3. Determination of sulfite content	51
9.4. pH Determination	51
9.5. Sulfur Analysis	51
9.6. FTIR Spectra	51
10. Dyeing of Polyester	52
10.1. Dyeing Method (High temperature dyeing)	52
10.2. Dyestuff	52
10.3. Textile substrate	52
10.4. Testing of dyed fabrics	53
10.4.1. Color measurement of dyed fabrics	53
10.4.2. Fastness properties measurements	54
10.4.2.1. Color Fastness to rubbing	54
10.4.2.2. Color fastness to perspiration	54
10.4.2.3. Color fastness to washing	56
10.4.2.4. Light fastness	56
11. Statistical analysis of variable	56

	Page
RESULTS AND DISCUSSION	
CHAPTER 1	
Preparation of unbleached pulps	58
1. Alkaline pulping	58
1.1 Soda pulping	60
1.2 Sulfate pulping	68
2. Sulfite pulping	74
3. Statistical analysis of the properties of the different pulps of palm leaves	82
CHAPTER 2	
Preparation of bleached pulps	87
1. Bleaching of soda pulps	88
2. Bleaching of kraft pulps	94
CHAPTER 3	
IR Spectra of the unbleached and bleached pulps	100
1. Crystallinity indices	101
2. Hydrogen bonding	104
3. Carboxyl and hydroxyl contents	108
CHAPTER 4	
Paper	131
1. Properties of unbleached papers	131
2. Properties of bleached papers	133
CHAPTER 5	
Lignin and Lignosulfonates	138
1. Sulfonation of soda lignin	139
2. FT-IR spectra of lignin and lignosulfonate	142
3. Lignosulfonate as dispersing agent	154
REFERENCES	158
GENERAL SUMMARY	
GENERAL DISCUSSION	

AIM OF THE WORK

Now a days there are several types of dates more than 2000 types. Egypt at the last period is concerned with growing palms to produce different types of dates. It is known that, at different stages of growing palms, there are several waste such as palm leaves.

In Egypt there are three millions palm tree and the average number of leaves produced during cleaning process is 15- 20 leaves per palm per year and the average weight of the leave is 5-7 kg. i.e. the net weight of leaves due to the cleaning process is 80-120 kg./year.

Palm's fibers which are produced from the wastes of palm are used in different new industrial fields such as paper industry. Some researches are carried out to produce paper from different parts of palm specially leaves, and it has been found that they contain high percentage of cellulose 35-45% in average. Therefore research will be conducted in this thesis to produce different kinds of pulp from palm leaves.

This work is divided into five chapters as follows:

In the first chapter, palm leaves will be pulped using different methods of pulping such as soda, kraft and sulfite pulping also, the effect of addition of organosolv such as acetone and dioxan with different ratios at different pulping temperature on the result pulps will be considered.

In the second chapter, non- organosolv and organosolv pulps will be bleached by multistages processes- such as (soda extraction- hypochlorite- chlorite steps). The chemical properties of the bleached pulps will be studied.

In the third chapter, Crystallinity index, asymmetry index and hydroxyl and carboxyl groups will be investigated using IR. Spectroscopy.

In the fourth chapter, optical and strength properties of the papers made from different pulps will be investigated to see the effect of the different pulping conditions and consequently the chemical constituents on the properties of the papers.

In the last chapter, soda lignin which are produced from the black liquor of soda process will be converted into lignosulfonate. Also sodium lignosulfonate will be isolated directly from black liquor of sulfite pulping of palm leaves. These lignosulfonates will be used as dispersing agents in dyeing of polyester and compared with the lignosulfonate which delivered from ISMA DYE Co. The chemical and spectral analysis of the lignin and lignosulfonates will be considered. Also K/S and fastness properties of dyed fabrics with using prepared or industrially used lignosulfonates will be considered.