Clothing Designs for Early Childhood Using Eco-Friendly Dyes

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Abstract: Childhood is the ground of humanity and its mainstay and it is the beginning point in the life of every human. Because the use of dyeing in children's clothes gives unexpected wonderful results, the idea of research came in the importance of orientation to the use eco- friendly dyes in children's clothes, especially for early childhood stage to reduce the harmful effects of synthetic dyes and maintain the safety and health of children. The problem of research: The problem of research summarized in the following questions: 1 - Is it possible to extraction dyes derived from natural compounds by using different methods. 2 - What is the extent of possibility of mixing natural dyes to get the new colors? 3 - Is it possible to get aesthetic effects in children's clothes by choice the appropriate dyes for the type of fabric and method of dyeing? 4 - Is it possible to enrich children's clothes designs by using eco-friendly natural dyes? The importance of research: This research cares about protecting the environment and human in general and children in particular from resulted problems from synthetic dyes, and attempt to reduce the resulted wastes from synthetic dyes and its mordants to maintain on healthy environment free from pollution, and to maintain on the health of children and not expose them to the risk of synthetic dyes. And the research attempt to direct the attention of officials in the form of specifications and standards to find standard specifications care about ECHO sign when importing children's clothes. The importance of research is presented in the following points: 1 - Direct the attention of officials in the specifications and special standards for children's clothes and fabrics that import from abroad. 2 - The protection of children in particular and the human in general from problems of industrial pollution caused by synthetic dyes and its mordants. 3 - Shareholding in the work of small projects by using the dyeing for children's clothes. The objectives of research: 1 –study the various possibilities for the natural plant dyes and use it in the dyeing of fabrics. 2 - Use the dyeing aesthetics by "Tie Dyeing" manner and integrate it with the basis of fashion design to design early childhood clothes. 3 - Implementation varied designs for children's clothes in the early childhood stage by using dyed fabrics, dyed with eco- friendly dyes by "Tie Dyeing" manner- researcher has noted by the results of the laboratory and applied study that it can integrate color groups of the natural dyes such as Roselle dye with pomegranate peel dye in the laboratory method, and merging indigo with pomegranate peel and Roselle in the traditional home method with a difference of color graduation and a difference in the "Tie Dyeing" method between the two methods, and this manner gave different results with overlaps and decorative effects very beautiful. Thereby, the first hypothesis has been achieved, which states: the possibility of merging groups of color from natural dyes to get the new color effects. - Use different methods for "Tie Dyeing" when implement of the dyeing process with Indigo, Roselle and pomegranate peel. Whether using the home method or the laboratory method. -results of the proposed and implemented designs showed the possibility of designing varied clothes and innovative for children of the early childhood stage, perform the functions and aesthetic aspects.
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1.Introduction

Childhood is the ground of humanity and its mainstay and it is the beginning point in the life of every human. And the progress of societies and its failure get back to extent of childhood care In terms of the health and upbringing and education (Alkhatib, 1415).

Child during periods of his life passes with different growth stages and each stage of these stages has its special clothes according to the physical developments and body proportions which changing from time to time (Alyamani,1416 AH).Choice of the appropriate fabric and design to the stages of child growth and his sizes with availability of beauty, good sense, comfort and harmony of colors, also accessories of clothes,all that meets the requirements of childhood and achieve the social, healthy and psychological security of the child (Tate, 1984).

To achieve the good design it is which use the best possible way to visible express from the essence of something and to achieve this in a scientific way the designer has to look for the best possible way to form and doing and use of this thing, as well the creations of the designer is not only the aesthetics but also

functional creations and expressive about the spirit of the age (Matouk, d - t).

There are designs carry aesthetic relationship vary with its role in its functional purposes such as designing of dyeing of children's fabrics where prefer dyeing it with natural materials and its elements must be close to the child's thought, his age, his speech and his conscience (Osman,1997 AD).

The link between human and dyeing on textiles existing from immemorial time where in the early of the Islamic era, there were dyes has been used extracts from either plants or insects. The blue Indigo was extracted from the Indigo plant which grows in India, and the crimson was extracted from some insects, and these dyes have been used adroitly in the past, for example, the crimson does not dye the cotton unless expose to special stabilizeing process and that by processment the raw by metal hydroxide such as aluminum hydroxide or copper or iron, they also give different colors depending on the installer difference where give with aluminum crimson color, with copper give "Teal" color and with iron give violet color tilted to the black (Muhammad,2000 AD).

Jader (1979) explains that the use of pomegranate peels in dyeing with blue vitriol, starch and iron filings was to give the fabric the black color, and it also work to stabilize the dye,and dyed fabric was left in the sun until it gets more black color by the occurrence of the oxidation process. The use of Eco-friendly natural dyes has been for long periods until 1856 year which was considered historic year for the dyes where (Perkin) discovered coincidentally the first synthetic dye from coal tar.

It is noticeable in recent years, the widespread use of industrial dyes in children's clothes for its colorful effects and consistency of its colors where Nasr (2002) explained that the dye of fabrics with synthetic dyes gives different color effects for these fabrics as it distinguishes it by properties of high stability to the light, the washing and the friction and also it is economic in cost (Nasr,2002 AD), but there was the problem of environment pollution and the harmful impacts of many of these pigments so the world's attention in recent years it has turned to try to return to nature again, and the search for natural sources to extract the colored material from it and exploitation it in coloring textiles (Elhamaky,1999 AD).

Lokhande (1999) pointed out that in recent years the interest with the natural dyes for dyeing and printing of textiles has increased because it is considered eco- friendly, the dyes from natural plant sources are interesting for several reasons, one of them is the brilliant colors of dyes as the degree of toxicity of the dyes is very low. The natural dyes can be divided into two types, the first that produces the color very fast just by boiling and this type of dyes called intrinsic dyes, or that do not require the stabilization material, and the second type is that which need to add chemical material on it to make the color permanent and this type of dyes called descriptive dyes or the dyes which need stabilization material. The natural dyes can be used in dyeing many of textiles such as wool, cotton, silk, linen and synthetic fibers.

The process of dyeing fabrics is performed after the weaving process, and one of the advantages of this method is control the colors that dyeing material according to what required by the fashion, and dyeing on fabrics is considered economic where it consumes a less quantity of dye (Elzoghbi and Nasr,2005 AD).

Godwit (1979) sees that the artistic creations of the method of dyeing by "Tie Dyeing" are affected by various materials of cloth in terms of its type and the methods which use to prepare it and the synthetic properties to make the texture.

"Tie Dyeing" method is used in the textile dyeing and that by using various kinds of fabrics and various kinds of stones, wood, oysters, bones or any forms of tin in regular or different places on the fabric according to the vision required, the design is often be in the form of circles where the dye can be isolated on the impact on the fabric in limited areas, and that by wrapping thin filaments around it before Immersion it in dye tub, and thus the outer parts of the wrapped knobs expose to dye, while the inner part keeping devoid of color except what may leak through the filaments if it is not tight, giving the attractive models(Elzoghbi and Nasr,2005 AD).

Because the use of dyeing in children's clothes gives unexpected wonderful results, the idea of research came in the importance of orientation to the use eco- friendly dyes in children's clothes, especially for early childhood stage to reduce the harmful effects of synthetic dyes and maintain the safety and health of children and chosen topic entitled "**Enrichment clothes designs for the early childhood stage by using eco-friendly dyes**".

Definition of dyes:

Dye word launches on any compound can stability on the textile fibers to give it color (Gashgari, 2005 AD).

The dye is the colored materials that can lend its color on another material, but with the availability of several conditions:

1 - Dye has to be has a specific ability of the body that is being dyed, and the dye must be attached to this body.

2 -Dye has to be with thick color where be enough to a small part of it to give color to the other body.

3 -Dye has to be with stabilized properties against the impact of chemical agents and various

natural agents, such as stability to light and washing (Shehab, Kamel, 1961 AD).

Early childhood stage

Early Childhood:

It's called kindergarten and pre-school stage and "pre-school child," stage. This stage is characterized with clear individual differences in various behavior aspects and settles in it a lot of the personal characteristics (Abu Hatab & Sadeq, 1995 AD).

The early childhood extends from the end of crawling stage and start of walking to before the elementary school entering any from the start of the third year to the end of the fifth year and its educational called pre-school stage (Elshafi'i,.2007 AD).

Eco-friendly:

It means non-existence of materials or impurities of gas, or liquid or solid impurities, which may be live materials or static materials in the air, or in water or food, which may adversely affect on the integrity of the different functions of all living beings on the earth planet and there are several organizations concerned with the environment, such as " **Green Peace** " and Organization " **Green Line** " (www.eef.org.bh, 2007).

The theoretical study of search

Firstly: the design and its role in children's clothes.

Introduction

The fashion design is one of the most important main arts of the present day, it displays many aspects of the cultures of the past and shows the properties that characterize the communities across the centuries and link it with the present.

Fashion is not a way to cover some parts of the body or to save it from weather or desire in finery, but fashion has its deep roots in the civilization of each nation and its civil, traditions and other affairs, and is also an honest mirror reflecting social and economic, political and religious conditions through the ages and times. (Ahmed, 2001 AD).

1 - The design

Is the process of organizing visual elements for artistic feature, design associated with necessary elements as line, shape, color, space, light and surface texture, where all of them optimized to serve the general shape.

Some see that the design is a formulation of formation relations in tightly to serve the artwork structure. And it can be defined as the plan or the system that regulate or coordinate the artwork component elements for it, where it becomes expression unit in the design of direct sensory perception through the availability of organizational relations between the various composite elements of the artwork. (Ahmed, 2001 AD).

The design can be defined as whole process used for planning a form of something and create it in a way not satisfactory in terms of the functional or utilitarian only, but it brings pleasure and joy to the soul also, and this is considered as satisfying for a need of human utilitarian and aesthetically at the same time (Shawky, 2005 AD).

2- The Importance of design

The design is essential work for every human, where most of what the human do of the business includes proportion from design, and that presented in the manner in which he wears his clothes and regulates his house or coordinates his thoughts. Meeting the needs of human which he needs in his public and private life from physical products or emotional meanings and express it is a vital thing, the importance of the design establish from these humanitarian necessary elements which meet the public and private needs of human (Shawk,2001 AD).

The design is one of the areas of activity artistic, where it is impossible for any work of art to appear without design, in other words, it is the status of the artwork and appreciation of what is used in its formulation from the elements and proportions and uses them to achieve the optimal goal of this desired work. All this reflects the psychological reasons that drive the artist latent within each of us to express himself either by creativity or choice in special ways vary from one individual to another, and those primitive motives of instinct aesthetic in us is the same as that push the artist-designer to arrange his thoughts and feelings and organize it to create forms from shapes according to a specific plan (Shawky, 2005 AD).

3 - The objectives of design

The design has an aesthetic and functional goal, where beauty of the material form is associate with its function, according to this concept, the estimation of the static value of the material is not in aesthetic value, or formal design, but in appearance features that keeps with close relation with the purpose of design, and in fact, the consensus that recognize the reciprocal links between function and shape and possibilities of aesthetic influence are returned to the distant past, the Greeks have talked about this kind of beauty which associated with the suitability standard (function) when Socrates placed the beauty and suitability in one rank. It could be saying that all artworks trace one origin is a human need then his desire that the need be has an aesthetic feature as there are certain characteristics contributed between all the formal arts or visual (Ahmed, 2001 AD).

4 - The concept of fashion design

Fashion design is not as easy process as some think, but is subject to many of the basics and the factors that control this innovative work and follow up its stages from beginning to end, in general, the process of fashion design is only the result of work

done by the designer and he has to put his designs from real reality to serve the purposes of the society which he designing for, and this design has to be characterized by creation and innovation (Alseman, 1997 AD).

Several concepts for fashion design have been raised addressed it from several angles as follows:

Fashion design is to transform the raw material into clothes suitable for the body shape which the designer needs to work piece for it. (Elsmere, 2004 AD)

Fashion design can be defined as employing elements used in the design process to achieve the aesthetic and utilitarian goals, where the fashion is changing rapidly and therefore must avoid the monotonous and not required designs. Skilled designer tries to expect the recent trends and raise his designs above all of designers around him. The design is innovative solutions for the problems to achieve the purpose of it where the designed fashion fit the traditions of the society, and keep up with the contemporary period. (Ahmed, 2001 AD).

Fashion design can also be defined as the technical language which elements form it in a unified composition of line, shape, color and fabric, and these changes consider the basis for its expression, and affected by bases to give control and integration, balance and rhythm and proportion in order to get the individual in the end costume make him feel in harmony and link him with the society in which he live (Abdin, 2002 AD).

Fashion design, also known as applied art based on the scientific principles and theories (Elderly & Elshafi'i, 2000 AD).

Design and its role in children's clothes

Design plays an important role in children's clothes and effects on the child socially and psychologically and physically and effects on his health. The design of children's clothes functionally must take into account the following:

1 - The clothes must be comfortable and easy in wearing and dislocation.

2 - The clothes must be with multiple uses in order to achieve the functional aspect.

3 - Existence difference in the clothes between the front and back so that the child can distinguish between them.

4 - Focus on colors because children at this age prefer the bright colors and the child can distinguish between colors, and the more exciting colors to child are red, blue and yellow.

5 - Child prefers bright clothes with soft texture.

6 - Child prefers comfortable, loose clothes for him while sitting and sleeping and playing. (Elshafi'i, 2007 AD)

7 - Selection materials suitable for the climatic environment due to that the child's body is sensitive in terms of the feeling of heat and the changing of heat grades surrounding him.

8 - Prevent the use of the opening and closing means from small pieces, which the child can be easily depose it in order to protect the health of the child and the beauty of clothes appearance which he wears.

Aesthetic aspects can be achieved when designing children's clothes by using modern techniques in the implementation and taking into account the following:

1 - Selection materials with lacy colors, that draws the attention of the child for its beauty especially in the early stages of age. (Park, 1997 AD)

2 - Use accessories with beautiful shapes, that draw the attention of the child and attract him to use it, and help him to wear and undress his clothes, and at the same time an attraction factor to him.

3 - Selection some decorative designs from beloved cartoon characters of the child and thus help him to feel in beauty of selection what he wears and develop in him the taste of good choice.

4 - Coordination and appropriate the clothes pieces with age stages in terms of movement and vital activity. (Elseman, 1997 AD).

Secondly, the early childhood and its needs of clothes

Childhood enjoy with great interest from all those interested in upbringing, because it maker of the future, if we are able to prepare the children right educational preparation, and upbringing them right socially upbringing away from the Oedipus and the tensions and psychological conflicts, we can predict the generations of good citizens who can play an effective role for the benefit of their society and for their benefit at the same time.

There is no doubt that the clothes have significant impact on the psyche of the child, and we have to take the advantage from the study of different aspects of the growth in term of the physically, psychologically, physiologically, socially, and the conditions which must be available in his clothes and the care of it (Abdin, 2001AD).

The early childhood stage extends from the end of suckling stage to school entry stage, and some prefer the name of the early childhood stage rather than the name of the pre - school stage, where nurseries and kindergartens receives between the ages of three and six almost (Zahran, 2005 AD).

Characteristics of early childhood

1 - The child's parties grow at this stage rapidly, while the trunk is growing moderately and the length is about 90 cm at the end of the third year and then increase slowly at a rate (6,7,8,9) cm through the third

years, fourth, fifth and sixth, and the weight increases at rate one kilogram approximately in the year.

2 - The capacity of the child improves where his feet become constant and he can run and jump easily, and his movement increases.

3 - The child graded in relying on himself when he eats and dressing, and at the end of the fifth year is able to wear his clothes and undress them without the help except knitting the tapes as a result of the gradual growth of the small muscles at this stage.

4 - The child is trying to identify the environment surrounding him and his questions abound.

5 - The child can distinguish between colors and call it. The more exciting colors for him red color, blue and yellow.

6 - The child can distinguish between the front and back in case of absence of similarity between them, as he can distinguish between male and female clothes.

7 - The child prefers the bright clothes with soft texture and comfortable loose clothes for him during sitting, sleeping and playing. (Elshafi'i, 2007 AD).

Considerations that must be available when selection of clothes for the early childhood stage.

1 - Selection of casual clothes that is easy for the child to wear and takes them off without the help of others.

2 - Selection of clothes that its lines and models are attractive, and keep up with fashion lines.

3 - Selection of suitable clothes for the prevailing climate in the environment which child lives in it.

4 - Selection of clothes that allows freedom of movement for the child, and comfort during standing, walking, sitting and playing.

5 - Selection of clothes that retain its good appearance for as long as possible.

6 - Selection of clothes that resist to staining and easy to care with it.

7 - Selection of clothes those are durable, well-made and well-implemented.

8 - Selection of clothes that suit the child's size and can be used for as long as possible.

9 - Use of coats with bright colors in cloudy and rainy weather, and this to make it easier for the driver to see the child in order to avoid exposing him to accidents.

10 - Selection of quart size larger than the child's size, so the child does not feel it is narrow when used it over his basic clothes.

11 - Selection of clothes that have pockets, so a child can put his things in it. (Elshafi'i, 2007 AD).

12 - Selection of clothes that have the ability to absorb moisture and sweat

13 - Selection of clothes that have the ability to maintain body temperature

14 - Selection of clothes that do not cause damage to the child's skin from where the chemical materials that used in its processing and dyeing (Abdel Razeq, 1999 AD).

Figures (2), (3) and (4) explain some of the pieces that are suitable for male and female children in early childhood stage.

Thirdly, the use of cotton in children's clothes fabrics

Cotton

1 - Cotton fibers are considered the broadest fibers used and the best and most important in the textile industry in the whole world. It can be used to make types of textiles innumerable unlike any other fibers. It is varied fibers with high durability and can be woven in various ways and colors.

It is said that the origin of his native, India. As the Pharaohs had known it, and the Egyptian priests were wearing woven fabrics of pure cotton or blended cotton with linen, as mentioned in the notes of the Greek historian "Herodotus". The cotton fabric was known in India for nearly five thousand years ago, as indicated it by the excavations of "Mohenjo-Daro" in Sind province, and was also known in "Peru" in South America and in many other countries from time immemorial. (Elmahdi, 973 AD).

And commercially, cotton is produced in many countries in the world, and the most important countries which produce cotton are the United States, Soviet Union, China, India, Egypt and Mexico, and these six countries produce 80 %, nearly of the total of global crop, and the United States produce 30 % of the total of global crop alone. (Qashqari, 2005 AD).

2- Cotton considered one of the most widely used textile materials, as it is considered among the cheapest materials used for clothes, it is used almost in all the purposes of the spinning and weaving of ropes to the finest clothes.

Cotton is not used only for clothes, but is also used for many other purposes, including upholstery fabrics, padding, sewing threads, tires, bookbinding fabrics, unwoven fabrics, gauze that used for medical shifts, and medical cotton.

Also cotton is used for purposes that require durability and elongation and consumption, resistance and shredding, and considered the use of cotton in this case better economically than any other type of materials, so is used for industrial purposes beside other purposes, and in some cases prefer cotton to use, regardless of the issue of price (Sultan, 1990AD).

3 - cotton mainly consists of cellulose (which its percentage ranges from 80% to more than 90%) beside some other materials such as fatty acids, the protein substances and colorful substances which is seen as impurities have to be removed so that we can dye and print textiles easily, and the process of ridding the

cotton of these impurities called the primary preparation. (Alnagawi, 1981AD). The table (1) illustrates the percentage of the basic components for each of the raw cotton and cotton after purifying in a manner Kier Boil.

4- Filament of cotton, composed of a single cell in the form of oblate tape twists on itself several times, and its exterior surface appears as if was winding.

Table (1) the basic components of Cotton

Components	Raw cotton	Percentage of cotton after purifying in a manner Kier Boil
Cellulose	80 : 85	99.1 : 99.5
Wax Fatty acids	0.4 : 1	0.01 : 0.15
Ash	0.8 : 1.8	0.05 :0.75
Pectin	0.4 : 1.1	No
Protein	1.2 : 2.5	0.5 : 0.5
Pigment Resin	3 : 5	No
Moisture	6 : 8	No

Components of cotton (Nasr and Elzoghbi, 2005 AD)

Filament of cotton consist of initial wall very thin of cellulose that protected by cortex, or by outer cover known as (Cuticle) and that means the ketone cover and in the middle of the filament there is an internal zigzag channel known as (Lumen) contains the sap that feed the filament, while the main body of the filament consists of the minor cellulosic wall that gather inside the initial wall in form of sequential layers of cellulose, represents about 90% of the size of the filament. (Alnagawi, 1981AD). And Figure (1) shows the accurate structure of the filament of cotton.

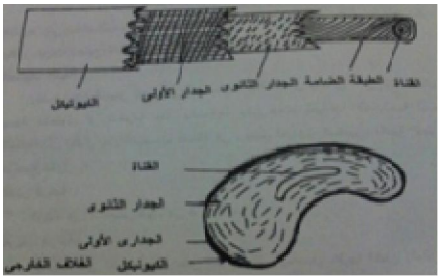

Figure (1) shows the accurate structure of the filament of cotton.

Fourthly: Dyeing and its aesthetic impact on fabrics

Dyeing is considered one of the oldest arts known to the human since ancient times, and it has been used in China and India since long time, and moved from India to Egypt, where they found colorful clothes in the graves of ancient Egyptians (Alnagawi, 1981 AD).

In spite of the discovery of textile dyeing long time ago, but progress in this field dates back to the last one hundred year. Where the human in prehistoric was passionate by using dyes in dyeing his body for the purpose of adornment and beauty, then later moved to the use the dyes in the dyeing of leather in bright colors and use it as clothes (Nasr and Al Zoghbi, 1993AD).

It is known that the dye plays an important role in spinning and weaving industry, because the dyeing process and usage the dyes as craft or art is takes special attention. The dyer has a different role in this field, where he gives the final shape of the product to make it attracts the attention of the customer, either by using attractive colors or his choice of harmonious and homogeneous colors, which soothe the eye and send comfort in the soul, and these all are psychological factors have a great importance in the selection of colors to fit the final product (Alnagawi, 1986 AD).

Most importantly, for the consumer is to get a product with constant color resists influences that are exposed when used in different purposes, so the dyer located upon the task of choosing the stability of color, the Foundation of American Higher Institute For the Dyeing Industry, is known about it, the selection of software which control quality of colors used through laboratory optional ways for the stability of colors, and print it in the technical guide with the product (Lyle, 1976).

1 - Dyes

The writings had been referred to that, the art of dyeing was known and common by the Romans, and Venice was in the Middle Ages the main center, which spreads from it information and facts about the art of dyeing in the European Union and helped the exchange of trade at that time between Europe and India to know the Europeans to Indigo and usage of it. (Alnagawi, 1981AD). In 1856, the English scientist "William Henry Perkins" found that, if exposure aniline to the oxidation process under special circumstances, it generates a violet material can be used in dyeing, and this discovery opened a new period in the history of dyeing, where it clarified possibility of getting dyes with industrial ways, without the use of natural limited resources. Thus, the dyes which became currently known lot and varied, while not increased in number from before 1856 to one hundred. In the middle of the ninth century, a great change happened in the industry and had been discovered the first synthetic dyes derived from coal tar, and this discovery opened new horizons for researchers to discover hundreds of dyes (Nasr & Elzoghbe, 1993AD).

The dyes can be divided according to its source as follows:

1 - Natural Dyes

Paints characterized by its ability to impart color to the varied materials, and the human known the natural paints long time ago. (Allamakee, 1999AD).

Printing and dyeing of fabrics was depends on natural dyes, where the beast and stabilized colors in ancient civilizations and in Middle ages had been produced by it, and is still used to now in some countries (West, without). And history of civilization tells us that the human has perfected the coloring art of with natural dyes since ancient Egyptian civilization, and the Samaritan, Greek, Romanian (Johun, Margart, 1994).

The history of natural dyes back to the Modern Stone Age period, which was presented in the first attempts to get the colors from various plants and some insects. And the oldest colored piece founded until now, back to the Stone Age, where (Yunker) found in ancient graves which located on the edge of the Western Delta some pieces of linen fabric, and graphics on the walls of Egyptian temples shows that the ancient Egyptians had made colored mats and hung them on the walls 3000 years ago (BC).

Indigo is first dyes used in textiles coloring by human, which its cultivation originated in India a long time ago, and then moved to the Egyptians. The use of eco-friendly natural dyes continued too long periods until 1856 which considered historic year for dyes, where "William Henry Perkins" discovered coincidentally the first synthetic dye from coal tar (Hermina, 1999 AD).

Since that time, began to discover many of synthetic dyes and evolved into a broad range, where he began a huge number of chemists in the study of how creating the colored materials (Brian, 1998).

Now, after the preparation of dyes had reached to the summit with its different kinds and its bright colors, the problem of pollution of the environment emerged, and there has been a growing interest in natural dyes for the protection of the environment, and which considered eco-friendly than synthetic dyes. (Roy, 1998) (Bhattacharya, 1999).

The natural dyes are divided into:

1-1 - dyes of plant origin:

Where the plants are the most important sources of extraction them, and are found in many parts such as roots, leaves, bark, stems of plants and their fruit (Shukri, 2001AD). These dyes were extracted in various ways, and the most important type of them is the indigo and has been used by the Egyptians since 4000 BC.

1-2 - dyes of animal origin:

It extracts of animal secretions and saps, and the most important sources of them are the scarlet worm, which an insect that lives on Oak trees, and oysters some marine organisms (Azab, d - t).

1-3 - dyes of mineral origin:

Prepare from metal materials most important of them is the salts of copper and chromium and metal oxides, which are called Pigments and give a yellow color, the color of iron rust and brown manganese (Ramakrishna, 1999) (Azab, d - t).

1.2 - Advantages and disadvantages of natural dyes

1.2.1 – Advantages:

1 - Isn't causing pollution to a certain extent, (low toxicity - low allergies).

2 - With a self- congruent colors and rare.

3 - More exciting to be subject to the factor of chance.

4 - Characterized by creativity if used wisely.

5 - Isn't causing losses.

6 - It has renewable sources.

7 - Compatible with nature, in the sense that its molecules similar the molecules found in nature.

8 - rebuilding the old and traditional dyeing technology.

9 – More safe until it was used in the food industry rather than synthetic dyes.

10 - There are no problems for the disposal of wastes.

11 - The possibility that the Textile Product is made from natural products entirely.

1.2.2 - Disadvantages:

1 - Lack of stability when exposed to light, washing, and the little ones stabilized to light and washing.

2 - High cost with limited range.

3 - The scarcity of technical knowledge of their use, as well as dyeing technology and its extraction.

4 - Some mordants damaging some fibers.

5 - Replace synthetic dyes with natural dyes leads to the destruction of the plant kingdom and with time we will realize that, many of the natural dye plants with medicinal value.

To overcome this problem we must choose raw materials as a dye supplier to achieve a balance between the environment and trade, and this is possible by applying the following procedures:

1 - Usage the raw materials only used for dyeing, and which is with few commercial uses.

2 - Avoid using raw materials that have pharmaceutical value.

3 - Avoid using the roots because this destroy the plants.

4 - Usage synthetic dyes that have a chemical composition identical to natural dyes.

(http://uqu.edu.sa/leabdalfatah/ar/158084).

2-2 - Synthetic Dyes

Demand for natural dyes had been decreased as a result of scientific research which implemented by the chemical (Perkin). In 1856 during his attempts to prepare (Quinine) of (Analine), he discovered by coincidence the method of preparing the dyes

chemically in the lab, and was the first dye, which produced is the dye known (Mauve), and that was the beginning of the scientific revolution in the manufacture of dyes.

This discovery was followed by a number of bright dyes of aniline, also a chemical scientist succeeded in preparing a number of new dyes that do not already exist in nature. And coal tar found considerable demand and attention as the raw material for the preparation of a large number of new dyes.

And dyeing methods vary according to the type of fiber which need dyeing, and according to the type of used dye, and when selected the suitable type of dye, the material can dyeing in one of the following ways:

A) Stock Dyeing or Raw Dyeing:

This is the most appropriate processes which can be used in the case of dyeing the materials that are in the state of bristles, where the dye penetrates easily inside the bristles. And fabrics which woven of these bristles, be stabilized against friction also bear the effect of light, and this method is used in dyeing wool.

B) Yarn Dyeing:

Yarn dyeing is done after their spinning, where they are in the form of skeins or rollers, and this makes the dye penetrates into yarn easily, as in the case of the bristles dyeing. And fabrics which woven of dyed yarns are called, Dyed yarn or Skin dyed according to their shape during dyeing (Alngaawi, 1986 AD).

And dyeing in this case is stabilized for the various factors of light, washing and be creative if compared with dyed fabrics after weaving, and can get multiple forms of textiles using combinations of colors, and can also use more than one color in both warp and weft directions, also to get different types of fabrics Gingham Checked and Striped Percale, and cloth boxes in different colors (Lyle, 1976).

C) Dyeing of various fabrics after weaving process done:

Is done either by the flat method or in the form of a rope. There is also a dual- method through the use two baths for dyeing.

3 – stabilization of color on the fabric

Dyeing is considered a center of interest of scientists, and the color stabilization on the fabric depends on several factors, including.

3-1 - Chemical properties of the dye:

This requires that the dye must has a specific chemical composition, so that it is easy to put it on the fabric, thus reflects light to give the desired color.

3-2 - Chemical properties of the fabric:

Susceptibility of fibers differs in accepting the dye, for example, the protein fibers such as wool, silk accept some types of dyes efficiently, while cellulosic fibers accept its lesser, and their impact weak on synthetic fibers.

3-3 - Difference and the multiplicity of methods and techniques to put the color:

There are many methods and techniques used to stabilize the color, where they pass through different processes and each process has a technical name, this name followed during processing (Lyle, 1976).

4 - The dyeing by tie dyeing method

Dyeing by tie dyeing method considered one of the most common methods, and this method produces small or large regular circles or irregular circles,and the circles are made through direct tie to the fabric or tying on large or small rounded things according to the required knots, as well as producing other forms such as rectangles, stars, ovals, and a variety of free forms, and tying any form in the fabric before dyeing process achieves endless variations (Stuart and Patricia, 1982).

Therefore, it is considered merely, decorative style achieves a modest or simple designs,and achieves through its artistic effects resulted from the tying processes and leakage of dyes solutions between tied fabric. Therefore, known about it interference chance factor in its designs. The basic idea in the style of the tie dyeing is to prevent the dye from reaching to certain parts of the fabric. Where it is to isolate certain parts of the fabric in certain ways to prevent it from absorbing dye.

These methods are determined in a number of techniques, including folding and tying, knitting, twisting, etc..... (Mohammed, 2000 AD).

There are three basic ways to tying, are as following:

4.1 - Direct tying to fabric.
4-2 - tying on things.
4-3 - tying on things.

4.1 - Methods of direct tying to fabric:

Is picking up the center of the fabric or any other part and drop rest fabric to the bottom,and then tie on any distance to get the forms of circular, and tying constantly around the center produces a series of concentric circles as a model solar radiation, and the shape is determined according to the tie process, if being tied separately, the circular lines will be sharp and more accurate and not connected,and in the case of connected tying will produce overlapping circles with one center. Through a direct tying, can also make other forms of fabric such as oval and rectangle shapes and dented circles. This is achieved by controlling the way of annexation of fabric and collect it as required and tying on it, also can get a circle inside the form, and this is made by picking up the fabric from determining point and constipation it, and leaves the rest of the fabric to fall on top of the hand, and then combines the fabric and tie. (Abdl Azim,1998AD), and thus the tying be on the point and the piece that

was the point wrapped inside it, this way of tying produces overlapping forms. (Dona, 1973). Figure (2) Methods of direct tying to fabric and its results.

Figure (2) Methods of direct tying to fabric and its results
http://alfrasha.maktoob.com/forumdisplay.php?f=46

4-2 - tying on things.

Tying can be done on forms with a variety of sizes and materials before dyeing process to achieve spaces with a variety of free forms such as circles, rectangles, stars and ovals. (Lynda, 1986).

4-3 - tying on things.

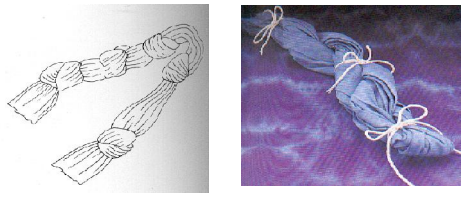

Figure (3) illustrates tying the fabric on itself and its results.

http://alfrasha.maktoob.com/forumdisplay.php?f=4)

This type of tying is divided into two types: fabric and then tying on it. Where combine the length of fabric and stuck one end tightly and wrap the other end until the length become wrapped on itself, and then tying be done, and can use the result in this case as a background to the traditional tying designs. The fabric can also be tied on itself, and that by wrapping the fabric around the hand and tie it on itself, and the diverse effects of this method stop on the form of node and its place on the fabric, and the convergence or divergence of the nodes. Figure (3) illustrates this method and its results.

5 - Natural Dyes used in research

5-1 - Indigo: the source of the word "Indigo" is derived from the Greek "indicon" which meaning India "India www.bytocom.com., it is a natural blue dye and is one of the most important types of dyes over the ages, where know with the Queen of dyes (Nawar, 2001AD). Extract from its leaf type of blue dye. This dye has been used since about four thousand years. Reap (indigo) leaves and then soaked in water until it ferments, after that accumulate blue clay material, dry and use as the best blue dye.

The indigo plant is from plant species, called " Indegofera" and branch of this species, many of the types which is not useful to extract material for the color blue, except one type is called "Indigofera Tinctoria " (Mohamme,1984AD).

India was until the end of the eighteenth century, the only country which exports this dye all over the world. In the early of the twentieth century,German factories of "Bayern Leverkusen" had reached to extraction this dye "indigo" from coal tar. And India's production of natural indigo decreased gradually. Bayern company began to conduct experiments, chemical "Werner" had been initiated these experiments in the year 1840. Where he analyzed the " Indian indigo", and he found that when analyzed it, it's given compound "aniline." And scientists had perplexed in this matter and it was a problem in front of the Department of Chemistry with its scientists for a long time to get to the method of other analyzing to get to the reverse of this result, and their hope was to begin with aniline which is the basis of the original compound for color, and convert it to a blue dye, but they did not succeed in that. Until " Adolf von Baeyer " prepared blue indigo of the" aniline "extracted from gasoline by himself after 17 years of research. In scientific meaning from " toluene ", but the costs were excessively high and does not compete natural production of indigo plant. In 1897, Department of Chemistry in the company enables to extract blue dye from a cheap compound, is naphthalene, which is extracted from coal tar.

5-2- Pomegranate (PunieaGranatum):-

Table (2) the scientific classification of pomegranate (ar.wikipedia.org)

Scientific classification	
Kingdom	Plant
Section	Magnoliophyta
Grade	Magnoliopsida
Array	Rosidae
Rank	Myrtales
Platoon	Lythraceae
Gender	*Punica*
Type	*P. Granatum*

Snippet about pomegranate

Pomegranate is mentioned in the holy Quran three times in each of Surah Elanam twice and Surah Elrahman once.

1- قال تعالى : (فيهما فاكهة ونخل ورمان) (68: Elrahman)

2- قال تعالى : (وهوالذي أنزل من السماء ماء فأخرجنا به نبات كل شيء فأخرجنا منه خضرا نخرج منه حبا متراكبا ومن النخل من طلعها قنوان دانية وجنات من أعناب والزيتون والرمان متشبها وغير متشبه انظروا إلى ثمره إذا أثمر وينعه إن في ذلك لآيت لقوم يؤمنون) (99: Alanaam)

3- قال تعالى : (وهو الذي أنشأ جنات معروشات وغير معروشات والنخل والزرع مختلفا أكله والزيتون والرمان متشابها وغير متشابه كلوا من ثمره إذا أثمر وآتوا حقه يوم حصاده ولاتسرفوا إنه لا يحب المسرفين) (141: Alanaam).

Verse from Surah Elrahman talking about pomegranate in the paradise, and two verses of Alanaam talking about pomegranate in the world, and the palm with pomegranate was mentioned in the verses that mentioned pomegranate because they also types of fruit in the world and the Hereafter.

Pomegranate is of the fruits of paradise, and is called in English (Pomegranate) and its native origin is southwest Asia and is grown in the Arab countries and the Mediterranean countries and the Syria. (Abd Elhakim,2008AD).

Pomegranate is one of perennial trees, and its native origin is Iran and was planted in the Hanging Gardens of Babylon (Elhadee and Baraka, 1997 AD). Its agriculture had spread in many Arab countries for its warmth. (Mohammed,1997 AD). Pomegranate tree with beautiful white and red blossoms, and turn into delicious fruits with skin in crimson color or reddish yellow, the cover of this fruit contains on hundreds of bright water grains with red color or white, and In every grain there are hard or soft seed, according to the quality and type.

Pomegranate had known since antiquity, where inscriptions in graves indicated on the presence of it in Egypt since about 1500 BC. It is a deciduous sapling, gives many of the branches from the trunk at the surface of the earth,and the percentage of scales and barriers in pomegranates from 25-50% of the weight of the fruit, and the cover of pomegranate is smooth and solid with red and dark crimson color (Elhadee and Barak, 1997 AD). Pomegranate peel has been used since ancient times in dyeing. Also, it represents a common popular selection in some countries, as well as used in leather tanning, and stabilizes dyeing colors (Shams Eldin,1993AD).

Habitat

Agriculture of pomegranate had spread commercially in all of Spain, Cyprus, Saudi Arabia, Iraq, Syria, Lebanon and Egypt, as well as some of the southern states of America.

The uses and the medical benefits of pomegranate:

1- The bark of the tree is used in leather tanning and stabilizes colors.

2- Pomegranate prevents accelerated heartbeats and the palpitation resulted from diseases of the heart muscle.

3-Treats diseases of the throat if used as mouthwash.

4-Dried pomegranate peel an effective processment for diarrhea and expulsion of only one from the intestine.

5- Soothing to the skin, cooler for some fevers.

6- Battling diseases of the stomach and its irritation.

7- Pomegranate, tonic for the stomach.

8- Pomegranate juice works for the prevention of gout, because of the high proportion of organic acids in it.

9- Activates the functions of the liver, prevents jaundice and hepatitis C infections.

10-Processs cases of anemia because it contains iron element which necessary to form red blood cells.

11- Sweet pomegranate treats chronic cough.

12-Improves sound and vocal cords.

13-Treats sores and wounds.

14- Pomegranate peel mixed with henna, used for tanning hair with black.

The fruit of the pomegranate is all valid: grains to eat, fat to cure, peel for a cure, tanning and coloring, flower for coloring and cure, branches to expel vermin and for fuel and woodworks (Elremany, 2007AD).

5-3 - Roselle (*Hibiscus sobdariffa*).

Roselle is bush plant, its height of up to more than two meters, and a fast-growing, and its native origin is the West Africa and the tropical and subtropical areas, and bears high temperatures during the growing season (Fahmi et al., 1993). The Kordofan region of western Sudan, the main center for the cultivation of Roselle.

And Roselle is with purple leaves to dark red, its cultivation spread in Upper Egypt like Aswan and

Nuba due to high heat. A sepals extract used as natural dyes for some food and sweet, among others. Also used in the manufacture of cosmetics, which require the presence of color, such as Lipstick and cocoa butter and cosmetics industry (Mahmoud, 1999 AD).

Roselle is known by several names such as Jawkrat, Alqerqdib, Alkirkdab and red acidosis. Since the end of the nineteenth century, the Roselle plant is considered a major source of natural resources for the production of plant fibers which necessary for the manufacture of ropes and paper and pure cellulose, and the Roselle's sepals contain glucose, in addition to the colored materials and salts of calcium oxalate أكســالات and vitamin (c), and Roselle colored by dark red in an acid environment, because of the presence of Betesyaninia يتاســـــــــيانينيهب compounds, also it contains fluid materials.

Therapeutic benefits of the Roselle plant:

Roselle is a magical recipe for a lot of ills, scientific research has proven that Roselle drink lowers high blood pressure and increases the speed of blood circulation and kills microbes, and that making it useful in the treatment of fevers, microbes infections and cholera epidemics, because it is naturally acidic, and also it is tonic for digestion. factories of medicines, cosmetics, candy and soap have begun in the use of colored substances extracted from Roselle flower in their products after the chemical colors excluded,because of their harmful side effects, also the Roselle drink strengthens the heartbeats and works to alleviate cases of rapid palpitations,also contributes in the processment of cold because it contains a high percentage of vitamin (C), also petals and seeds used in the processment of a number of diseases including asthma, chest pain, weakness of the stomach, arthritis, rheumatism, gout, renal colic, hardening, abdominal and uterus cramps, and scurvy. And it is repellent to Toxics (www.sh3bwah.maktoob.com).

6- Mordants:

Mordant word came from the French word Mordre, and the Latin word Mordere, which means to stabilize and work effectively. The Mordants can be described as metal salts working to attract all of the fabric and the dye to each other and work to improve the degrees of color stability. (Robertson, 1994).

And a lot of natural dyes in any case need to chemicals processing, additional to improve the absorption of color and prevent color's tarnish and prevent a drain of color in the dyeing bath as well as change and improve colors, this chemical process is known stabilization process. (Glover, 1993).

In addition, some people may use the mordant with the stabilized dye naturally,and in this case the mordant is not used to make the dye stabilized but to modify and change the color to a certain extent. (Wickens, 1983).

6-1 - History of Mordants:

It's difficult to know how the first dyers discovered that the mordants work to stabilize colors. The Chinese have had workshops in dyeing since about 3000 BC, and Westerners dyers were the first who knew Lac dye, and they who now know Swiss people who have lived since about 2000 BC. But it is certain that the first use of mordants was in the Middle Ages and was the first used by the ancient Egyptians between (1500 - 2200) BC, and that had been known through the fabric that was found on mummies preserved by the dry air in Egyptian tombs. (Loiyd, 1971).

It is not known exactly the source of these mordants, in Brazil and Peru found that they were using wood ash, the first Americans usage, for salt, vinegar, soda, Tartar cream, has registered as mordants materials. Although, the addition of mordants materials to the bath, utensils that were used in the dyeing process was itself helps in the stabilization process. (Nawar 0., 2001 m)

In many parts of the world, there have been reports of dyers who used pots of copper or tin, that these pots have an effect in the process of getting bright colors, also the use of iron boilers helps to darken the colors, and the use of aluminum pots or add a slice of aluminum in dyeing pot with a little of soda is an alternative to aluminum mordant, and that has supported and defended by the dyers New Zealanders. (Robertson, 1994).

Professional dyers who have used natural dyes have relied on many of the craft books that were available at that time to get recipes, and in some cases were there are references to the environmental problems resulted from the dyeing process and it had no solutions to the problems of metal waste remained in the dyeing bath. However, it has been found in some references,recommendation in digging a hole in the ground to bury the remains of the missing material from the liquid, and in this way is get rid of waste by either bury it or cast it into water sources (Dally, 1993).

However, the best way is to limit or reduce the amount of the remaining metals of the stabilization process. Since 1983, continued research and investigation of the degrees of natural dyes stability for both of washing and light, and research and investigation has reached to that: the improvement in stabilization technology works to improve the degree of stability for natural dyes. (Lewis & Yen, 1995).

6.2 -Types of Mordants: -

In general, there are three types of Mordants: -

6.2.1 - Metal salts or Metallic Mordants.

6.2.2 - Tannin and Tannic Acid.

6.2.3 - Oil Mordants.

6.2.1 - Metallic Mordants

6-2-1-1 - Alum (KAL (So4) 2, 12H2o)

Is a double composite of aluminum sulfate and potassium (Nawar, 2001 AD), and is found in the form of white crystal crystals, which is common and safe to use as it is cheap and easy to obtain, in addition to being non-toxic and increases of colors shine. (Milner, 1992).

6-2-1-2 - Chrome (K2Cr2 O7)

It is called the potassium dechrome ديكرومـات or potassium bichrome بيكرومـــات (Robertson, 1973) and is found in the form of orange crystals, and be very sensitive to light. (Wickens, 1983).

6-2-1-3 - Tin ($Sn CL_2. 2H_2O$)

Is found in the form of white crystals and should be kept in a dry place and use it as a mordant material could have an exciting effect on the colors Bloom or Brighten Color, especially red and orange and yellow colors (Dalby, 1993).

6-2-1-4 - Copper ($CuSO_4.5H_2O$)

Copper sulfate is known with Blue Vitriol and is found in the form of a beautiful blue crystal, and it is an important mordant for green dyes. (Robertson, 1973)

6-2-1-5 - Iron (ferrous sulfate) ($FeSO_4.5H_2O$)

Is found in the form of green crystals, and also known Green Vitriol, is used primarily to make dark colors, when add it colors become dark, what is known as Sadden the Color (Wickens, 1983).

6-2-2 - Tannin and tannic acid

Tannin is one of the natural mordants materials, which is one of the most important components in the dyeing process with natural dyes, specially that produce colors of yellow and brown, gray and black (Jani, 1999).

Tannin is a constrictive plant material with large molecular weight and is found in small amounts in plant tissues such as leaves and fruits, but it is concentrated in the bark, especially oak bark (Brown, 1983)

The tannic acid is easy to use and easy to get it, and be in the form of powder. Does not destroy tissue, although it's after tannic acid bath, the fabric color tends a little to brown (Milner, 1992).

6.2.3 - Oil Mordants

The main objective of the use of the oil mordants, is to form associations with Alum mordant, where Alum is soluble in water. And the resulted Oil be content of fatty acids and group (COOH). Fatty acids interact with mineral salts and turn into (COOM) where M refers to the metal. (Gulraiani & Gupta, 1993)

The procedural study of research

Firstly: Methodology of research

Firstly: the methodology of research

It is the way used by the researcher to access to the facts or information that he seeks it out through his research (Saab, 2007 AD).

*** The Descriptive approach and experimental.**

The research, based on the descriptive approach and experimental where the descriptive method depends on describing the phenomenon as it is in fact, and collecting accurate information and data to express the phenomenon in qualitatively expression or quantitatively, by classifying this information, and organizing and express it, to reach to the conclusions and generalizations which help us in the development of the fact which we study.

The experimental approach, it includes practical experiments for the extraction of natural dyes from the environment and processing it until they become fit for use, and mixing colors by certain percentages and then dyeing it on the used fabric in the search, and it is the cotton (Abeedat et al., 2002 AD).

Secondly: Fields of research

1 - Time domain

Researcher relied on the use of dyes that have been used in the past in the traditional way, and it is "Tie Dyeing", and was the most important of these dyes, indigo dyes and pomegranate peel dyes, also she added hibiscus as recent dye, the processing of these dyes and carry out practically experiments took full term.

Thirdly: Tools of research

1 - Observation

Tools are means used by the ordinary man in his acquisition for his experiences and information, where we collect our expertise through what we see it or hear about it, on the basis that this observation be deliberate, precise and organized, and meaningful and deep, and connect between phenomena with the use of the accurate scientific tools (Elaidaroos,. 2006 AD)

The researcher used the direct observation by dying pieces of cotton fabric in the traditional manner and at different concentrations and then washed it several times to make sure the color stability after washing, also she visited some popular markets, fairs and festivals of national which exhibit some clothes which dyed with natural dyes and traditional methods.

2 - Tests

The researcher had conducted collection of tests on dyed fabrics at the National Center for Research at the University of Cairo, Egypt, and the test procedure on fabrics, are:

- Test to measure the intensity of the color.
- Test for color stability for all of light, friction, washing and perspiration.
- Test for tensile strength and elongation.

3 - Procedures of research.

3-1 - Digital photography

Is one of the important means of saving, and has been used in the samples photography which dyed several times and in different situations. The photos have helped researchers in clothes designs where she has chosen the best of them and used them by the Adobe Photoshop program.

3-2 - scanner

Is one of the high -precision technical means, where it gives images be similar to the reality and truth of different materials, in addition to sure that the image clarity and its accuracy in timely. (Sabagh, 2007AD).

3.3 - Adobe Photoshop program.

Is a program that works on image processing. Photoshop deals with each image as a set of dots (pixels) and all processing operations on the images are to benefit from the principle of the layers. (vb.dardarkom.com).

Fourthly, procedures of research:

1 - Practical experiences:

The researcher conducted two experiments, first: she used the traditional method in dyeing by "Tie Dyeing" at home. Second: was by using the experimental method and it has been in the National Center for Research in Cairo, Arab Republic of Egypt.

1-2 - Experimental work

1.2.1 - Materials

Natural Dyes

Three types of natural dyes with vegan origin was used, as well, mixing them as follows

1 - The extracted dye from the leaves of the indigo plant and called (Indigofera)

2 - The extracted dye from pomegranate peel (puica Granatum)

3 - The extracted dye from Roselle flower (*Hibiseus sabdariffa*)

4 - The dye which resulted from mixing (Pomegranate + Roselle). The mixing ratio of 1: 1

Fabric:

Cotton

Were obtained from (Misr Company for Spinning and Weaving in Mahalla - Egypt)

And its specifications were as follows:

- Number of thread 45/2
- Textile structure file Twill 2/2
- The number of warp threads in 1 cm 20
- The number of weft threads in 1 cm 22

Used chemicals

1 - Mordants

1 - Alum (KAL (SO_4) $_2$–12H_2O).

(Potassium and Aluminum sulfate).

2 - Chrome (K_2 Cr_2 O_7).

Has been obtained from: (Elgomhorya company for medicines in Cairo)

2- used solvent

The use of water as solvent in both processes of extracting the dye and the dyeing.

1-2-2 - The Followed procedures

Fabric Bleaching

The materials used for bleaching:

The use of eco-friendly bleaching materials, such (hydrogen peroxide H2O2)

Method:

1 - Boil the fabrics at a temperature of 100 ° for 15 minutes and then rinse it with warm water to help fabric to accept the added materials for it.

2 - Prepare the bleaching bath and added to it: hydrogen peroxide H2o2 in a concentration of 50% and Tri ammonium phosphate at a concentration of 10%.

3 - Adjust the degree of concentration of hydrogen power at (8.5: 9) pH

4 - Continue processment for 4 hours at temperature of 55 °: 60 °.

5 - Lift the cloth and rinse several times and then dry.

Procedures of Dyeing

The used plant organs

1 - Pomegranate - the dye was extracted from pomegranate peel.

2 - Roselle - the dye was extracted from Roselle flower.

3 - Indigo - the dye was extracted from the leaves of the plant (ready).

Preparation of plant materials as follows:

1 - Preparation of the dry parts of the plant which will extract from them the dye either it was peels (pomegranate peel) or leaves (Roselle flower - indigo).

2 - Purification of peels and leaves, where getting rid of the diseased leaves and peels and rotten.

3 - Milling peels and leaves as much as possible to turn into powder as in (pomegranate peel) or to very small pieces, as in (indigo, Roselle).

4 - Keeping them in dry containers until the usable time.

Dye Extraction procedures

1 - Preparation of the amount of required water according to the weight of the material which will be dyed and with a ratio (1 gm of material: 40 ml of water) (L.R 1: 40), for obtaining homogeneous dyeing, where the increase in the amount of water is wasteful, while the amount is not enough of water may lead to the irregular and non-homogeneous penetration.

2 - Preparation of the required weight of dry dye which crushed previously.

3 - The dry dye is put in glass containers and add amount from previous water to it and prepare it gradually with continuous stirring to ensure mixing.

4 - Cover the glass containers with tight lid or with aluminum paper so as not to evaporate any amount of water

5 - Raise the temperature of the solution gradually until it reaches to a temperature of 100 ° and then leaves the solution at this temperature for an hour to extract the appropriate amount of dye.

6 - After the extraction time end. The glass containers are moving away from the flame and leave it to cool.

7 - The dyeing solution is filtered by using filtering funnel and fabric from polyester material to get rid of the dyeing material wastes.

8 - re- calibrate the solution again and in case if the level of the solution rate was decreased. Return it to the same original rate by adding water.

9 - re-filtering the dyeing solution again to get rid of any existing impurities, and in this case the solution become ready for use.

10 - When using mixture of more than one dye, follows the following:

* Prepare the dye solution for each plant separately as mentioned previously even stage of filtration

* Mixing dye solutions to be merged with each other, taking into account stirring well, and then filter them again and in this case the solution becomes ready for the dyeing process.

1-2-3 - Dyeing Method

1 - Bring the fabric and cut it and use the "Tie Dyeing" in preparing it for dyeing as it shown in the following images.

2- Measure weight and preparation of the samples, which will be dyed.

3 - Preparation of dyeing bath which contains on the dye solution according to required quantity in ratio 1 gm of material: 40 ml water.

4 - Add to the dye bath, 2 ml Ammonium sulfate to help on depletion the dye from the bath, taking into account stirring well.

5 - The process of dyeing completes in a container with a capacity of 5 liters and puts in an aquatic bath.

6 - Adjust the temperature of the bath at the required degree, as well as identify and adjust the time that will take in the dyeing process.

7 - Turn the samples continuously.

8 - The samples transport from the container and then rinse well and leave to dry in the open air. And figure (34) shows samples of experimentally dyed fabrics.

Figure (4) fabric preparation by using the "Tie Dyeing" for dyeing

Figure (5), Device weight of the samples.

Figure (7), samples of experimentally dyed fabrics

Stabilizing Method

Stabilizing method was used during the dyeing process in this search. In concentration as follows:

1 - Alum (0.62 gm / 100 ml water)

Method:

1 - Weight the used mordant accurately.

2 - Dissolve the mordant in a little of water.

3 - Then add the mordant to the dye bath which prepared previously and stir it well.

4 - Put the samples in the dye bath which contained on the mordant and stir it well.

5 - Raising the temperature of the bath slowly until its temperature reach (100 °) and this process continue for an hour.

6 - Stirring the samples in the solution continuously.

7 - Transport the samples from the container and then rinse well and leave to dry in the air.

Tests that were performed on fabrics under search:

- Some laboratory tests were performed on fabrics under research to determine its different properties.

These tests were performed according to the standard specifications of the color stability tests in laboratories of Textile Division at the National Center for Research – Egypt.

The tests were as follows:

Color Strength (K / S) Measurement

Taken as an expression about the degree of concentration of color on textiles and is evaluated through the accounts which was taken from the reflection of light on the dyed samples through the following equation: K / S = (1-R) 2/2R.

Where:

R = the reflection value emitted from the dark thick sample

K = the absorption coefficient

S = the coefficient of stabilizing or deployment

* The intensity of the color has been measured (K / S) for the dyed samples by device: Speetrophotometer, Data ColourlnternationaI Model SF 600.

Color stability tests

When colored material is exposed to special conditions, such as light, washing and friction and bleaching, this may lead to change the color in terms of gloss, depth and color tone, and in some cases all qualities may change. And the resistance of colored material to any change in color is called **color stability** (63). Tests were performed according to the standard specifications of the color stability tests

Methods For The Determination of The Color Stability Tests Of Textile.

Tests were performed to the dyed fabrics without the use of mordants and by using mordants.

Color stability to washing

* The stability test was performed according to the standard method: -

AATCC Test Method 61-1975

* By using the device (Launder-Ometer)

* And the extent of the change in the color of samples was evaluated by using the gray scale (Grey Scale)

Color stability to Rubbing

* The stability test was performed according to the standard method: -

AATCC Test Method 8-1977

By using the device (Crok Meter) and in two ways:

* Dry Rubbing Test

* wet Rubbing Test

* Samples were evaluated by using the gray scale (Grey Scale)

Color stability to Perspiration

* The stability test was performed according to the standard method: -

AATCC Test Method 15-1973

By using the device (AATCC Perspiration) and in two ways:

1 - Acidic Perspiration Test

2 - Alkaline Perspiration Test

* Samples were evaluated by using the gray scale (Grey Scale).

Tensile Strength and Extension Test

* Type F-1IIenry Baer - Model 701115 was used.

Was made in 1965 and run in 1970, it is Swiss-made

* In order to measure the resistance of dyed fabrics that are under study for tensile strength and registration of the elongation rate, according to the specifications of the Egyptian standard 235/1962.

• The effect has been studying of the following factors: -

1 - Effect of difference of dye type on the natural properties and stability of the fabrics under study.

2 - Effect of mixing dyes on the natural properties and stability of the fabrics under study.

* Stability tests for dyed fabrics were performed without the use of mordants and using mordants.

1 - Selection of Mannequin

The mannequin preparation phase is important and essential for the completion of the design process. The mannequin is a sketch of a human body in proportions more exaggerated than the proportions of drawing the body. Fashion designers use it to present their ideas by drawing sketches on it.

The researcher has been used Mannequin from the magazine (Simplicity)

3 - Preparation of designs

The researcher used her culture and imaginative capabilities and skills in the preparation of designs according to the following steps:

1 - Preparation of 25 essential design, with taken into account the functional and aesthetic effect for the drawn designs.

2 - Inclusion of these designs through the (Scanner) to the Computer.

3 - Use Photoshop software for planning and coloring it.

4 - Photography the dyed samples and inserted it into the computer.

5 - Use the samples which dyed in Photoshop in part that were prepared for it in the drawing.

3 - Implementation of designs:

The researcher has designed 25 proposed designs and implemented 15 designs, she has used in the implementation of designs the cotton fabrics, dyed by using natural vegetable dyeing by the "Tie Dyeing" method.

Description of design: sleeveless dress for baby girl, with triangular neck and inclined cut, and has two longitudinal cuts from the neck in the front and these cuts end with small pleat. The fabric which used in the implementation of this dress is dyed cotton which has been dyed in pomegranate peel by the "Tie Dyeing" method. **Description of Design**: the design consists of a short-sleeves dress and triangular neck, and the dress has pleats sewn from the shoulder until the waist line and open from the bottom. Length of the dress reaches to mid-calf. The fabric which used in the implementation of this dress is dyed cotton which has been dyed in Roselle by the "Tie Dyeing" method, and tail of the dress ends with tape. **The functional effect of the design**: The design is simple, helps the child to move easily. Fits baby girl in early childhood and can wear it in the morning and simple occasions and when go out of the house. **The aesthetic effect of the design**: the design highlights the aesthetics of dyeing by "Tie Dyeing", and gives disparate effect for the decoration existed at the top of dress than the bottom by using the pleats sewn from the top and open from the bottom. The choice of the bright color and its gradation and use of the dark tape from the bottom helps to attract the attention of the girl and make her like to use it and makes the dress attractive.	

Figure (8), the proposed design (1)

Description of design: sleeveless dress for baby girl, withtriangular neck and inclined cut, and has two longitudinal cuts from the neck in the front and these cuts end with small pleat. The fabric which used in the implementation ofthis dress is dyed cotton which has been dyed in pomegranate peel by the "Tie Dyeing" method. **The functional effect of the design**: The design is simple and baggy. Fits baby girl in early childhood, and helps her in movement easily and dress and undress it easily, and can wear it in the morning and simple occasions. **The aesthetic effect of the design**: were chosen quiet colors which suitable for warm climates. Decoration of dress has been linked with the inclined cut and longitudinal cuts to make asymmetric balance for design.	

Figure (9), the proposed design (2)

Description of design: consists of two pieces, The first: plain blouse with short-sleeves. The second: short- overalls.The "Tie Dyeing" method was used at the bottom part and suspenders and pocket.. **The functional effect of the design**: the design is simple and helps the child to move and play easily. Suitable for children who have three and four years and resists soiling and easy care. Suitable for the size of the child and can be used for as long as possible at all times and occasions. **The aesthetic effect of the design**: highlights the aesthetics of dyeing that appear in the form of decorated circles with more than one color, in addition to the use of decoration on different parts of the design, which raise the aesthetic value of the design. The design with colors suitable for the warm weather. There is also a harmony between the traditional design of the pants and the new in the form of decoration and its colors.	

Figure (10), the proposed design (3)

Description of design: the design consists of a sleeveless short dress of dyed fabric dyed in indigo by using the "Tie Dyeing" method, and ends with plain tip from another fabric and has flower from the plain fabric on the left shoulder of the dress. **The functional effect of the design**: The design is simple, comfortable and attractive. Suitable for a baby girl who has three years to help her wear and undress it easily, can wear it in the morning and simple occasions and when go out of the house. **The aesthetic effect of design**: the design highlights the aesthetics of dyeing clearly in front and back. Where decoration innovative which used in the design showed a gradation in color. And raise the aesthetic value of the dress. Emphasis on the degree of the specific color in each of the tail of dress and the flower on the left shoulder. Could change into the outfit where the child can wear pants and a blouse underneath. Using some accessories to draw the child' attention and to differentiate between the front and back.	

Figure (11), the proposed design (4)

Description of design: the design consists of two pieces, the first: sleeveless- long blouse, has a waist cut and then expands The fabric which used in the implementation of this dress is dyed cotton which has been dyed in pomegranate peel by the "Tie Dyeing" method, and the second piece is plain Bermuda pants with dark green color and has tape on the lower edge. **The functional effect of the design**: the design allows freedom of movement for the child, and comfort while standing, walking, sitting and playing, and can wear it in the morning and simple occasions and when go out of the house. **The aesthetic effect of the design**: the design decorated with star decorations, and its colors quiet and suitable for warmer weather and resistant to staining. Use gradient color to highlight the beauty of the design emphasis on dark color through the pants. The design collected between the traditional method of dyeing and recent trends in the design lines of the use of large expansion in the bottom part of the blouse and which ending in the form of triangles. The pants ends with tape to give aesthetic pleats pants at the end of the pants.	

Figure (12), the proposed design (5)

Description of the design: Short dress with a rounded neck and sleeveless, it has a bit of plain fabric. The lower part of the dress consists of two layers the first of fabric dyed by "Tie Dyeing" and opened from the sides, and the second layer of plain fabric, and little longer than the upper layer. **Description of design**: dress with straps wrap around the neck and reach to waistline, the bottom has four layers used in the implementation of it three pieces dyed with different colors and decorations.	

Figure (13), the proposed design (6)

Description of the design: Short dress with a rounded neck and sleeveless, it has a bit of plain fabric. The lower part of the dress consists of two layers the first of fabric dyed by "Tie Dyeing" and opened from the sides, and the second layer of plain fabric, and little longer than the upper layer. **The functional effect of the design**: The design is one of the beautiful designs, it helps the child to move and play and sit easily. Suitable for a child has six years, can wear it in the morning and simple occasions and when go out of the house. Its colors bear dirt. **The aesthetic effect of the design**: attractive design highlights the aesthetics of dyeing through the use of the undulating lines and harmonious and coordinated colors with each, and this helped to increase the aesthetic value of the design. Use the focus style through repeating the plain color in the belt and the bottom layer of the dress. Design lines keep up with fashion lines.	

Figure (14), the proposed design (7)

Description of design: dress with waist, made of dyed cotton by "Tie Dyeing" and sleeveless and with collar of plain white fabric and with ruffles from the top of the shoulder to the waist line,and lower part of the dress very wide and has plain white edge, the dress length reachs to the mid-calf. **The functional effect of the design**: the design is suitable for a child of early childhood and allows freedom of movement and comfort while standing, sitting and playing, and can wear it in the morning and simple occasions and when go out of the house and easy care and bear dirt and its fabric suitable for the warm weather. **The aesthetic effect of the design**: the design lines keep up with fashion lines. The aesthetic value of the design appears from its quiet colors. There is a harmonious and coordinated between the traditional design of the ornamentation resulting from dyeing and the new of trim the dress by collar and cut with white color and ruffles tie it in the form of a flower with blue color, and they are the same colors resulting from dyeing which has led to the achievement of control factor and focus factor on the design lines.	

Figure (15), the proposed design (8)

Description of the design: the design consists of a short dress with a rounded neck and sleeveless. It is collection of piece of dyed fabrics (remains of fabrics). **The functional effect of the design**: The design is simple and loose, helps the baby girl to move and play easily. Suitable for the baby girl of early childhood and can wear it at any time and can change as a wear internal blouse. **The aesthetic effect of the design**: the design highlights the aesthetics of dyeing clearly through the use of colors and decorations, takes into account a contrasting colors with similarity of color degrees. The design attractive and keep up with modern trends of fashion in colors contrasting.	

Figure (16), the proposed design (9)

The results of laboratory tests that have been implemented on Table (3), Effect of dye type on color depth of dyed cotton fabrics in Alum presence and non-presence of alum as a mordant.

Table No. (4) Shown that the color depth increases by using alum as mordant, also the increases in indigo degree (7,1) followed by color depth in pomegranate peel degree (6,5) then Roselle degree (4.2).

The dye type	**The color depth in non-presence of Alum** (K/S)	**The color depth in presence of Alum** (K/S)
Pomegranate peel	5.2	6.5
Roselle	3.1	4.2
Indigo	5.3	7.1

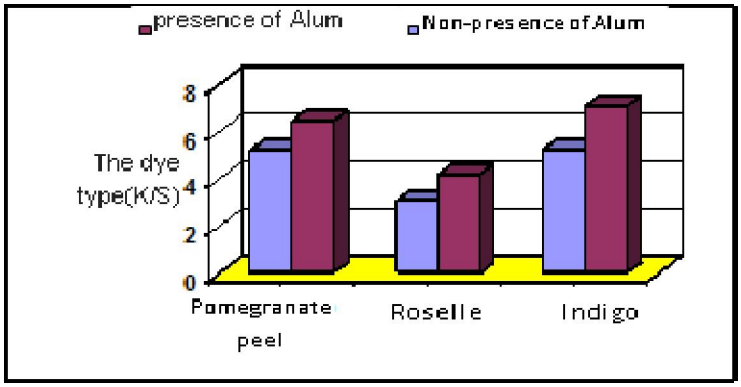

Table (5): analysis the exposition of effect of both dye type and presence of alum in color depth.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	22.93	2	11.465	156.341	0.000	3.885
Presence of mordant	8.82	1	8.82	120.273	0.000	4.747
Dye type * Mordant	0.39	2	0.195	2.659	0.111	3.885
Error	0.88	12	0.073333			
Total	33.02	17				

Table (4) Confirms that color depth varies depending on the dye type at the significance level (0,1), in addition to the presence, significant differences in color depth, shows the use of alum as mordant and non- use of it for the benefit of their use as a mordant.

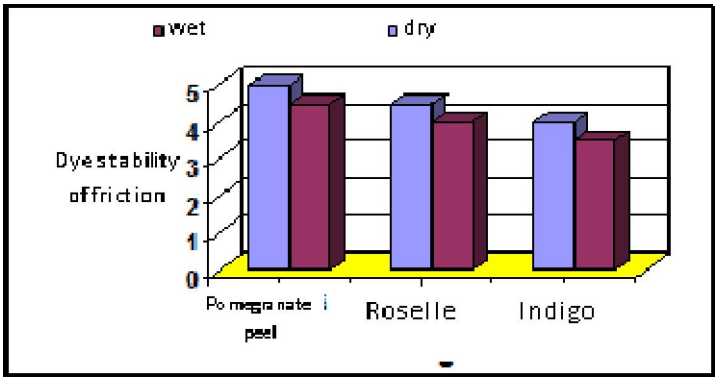

Figure (17), Effect of dye type on color stability of friction in the case of presence of alum as mordant.

Table (6): analysis the exposition of the impact of both dye type and a wet or dry case on dye color stability of friction in the case of the presence of alum

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	3	2	1.5	6	0.015625	3.88529
wet	1.125	1	1.125	4.5	0.055405	4.747221
Dye type * wet	0	2	0	0	1	3.88529
Error	3	12	0.25			
Total	7.125	17				

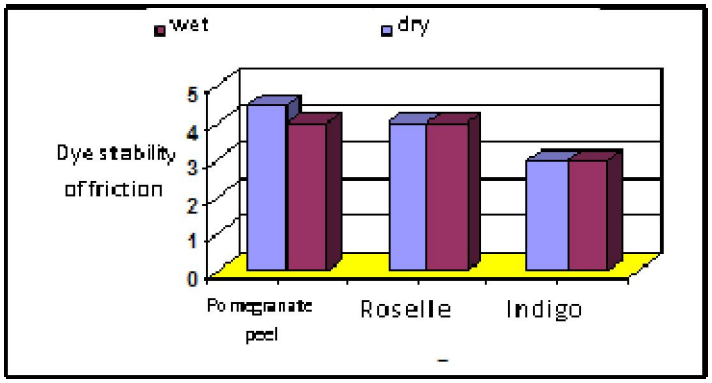

Figure (18) the impact of dye type on dye color stability of friction in the case of non-presence of alum as mordant.

Table (7): analysis the exposition of the impact of both dye type and a wet or dry case on dye color stability of friction in the case of non- presence of alum

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	5.25	2	2.625	10.5	0.002312	3.88529
wet	0.125	1	0.125	0.5	0.493004	4.747221
Dye type * wet	0.25	2	0125	0.5	0.618625	3.88529
Error	3	12	0.25			
Total	8.625	17				

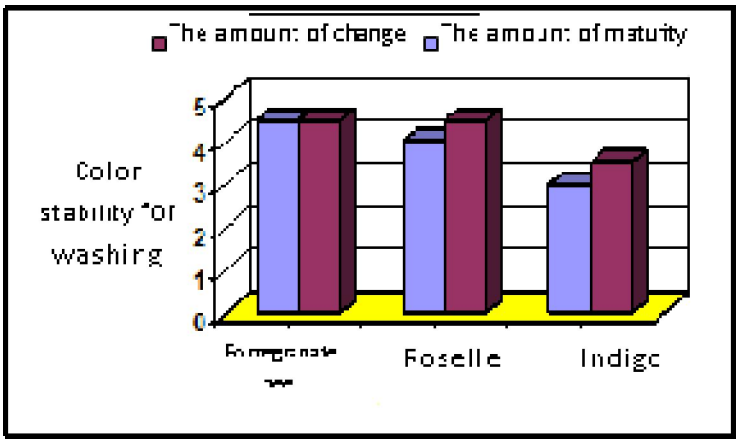

Figure (19) the impact of the dye type on the dye color stability for washing in the case of presence of Alum.

Table (8): analysis the exposition of the impact of both dye type and a wet or dry case on dye color stability to washing in the case of the presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	5.25	2	2.625	10.5	0.002312	3.88529
The amount of change	0.5	1	0.5	2	0.182717	4.747221
Dye type * amount of change	0.25	2	0.125	0.5	0.618625	3.88529
Error	3	12	0.25			
Total	9	17				

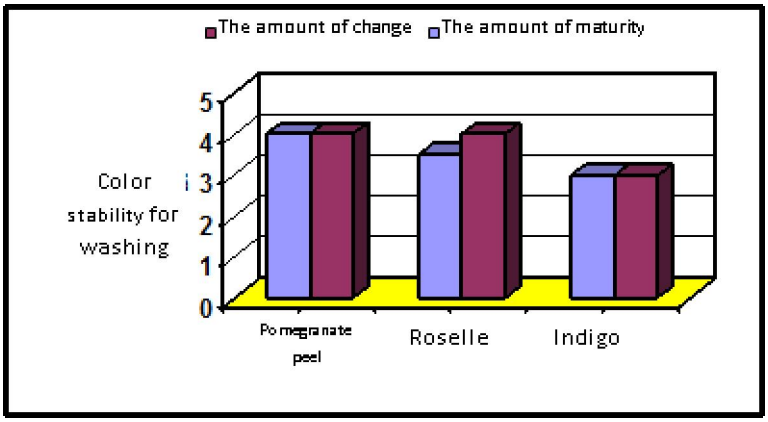

Figure (20) the impact of the dye type on the dye color stability for washing in the case of non-presence of Alum.

Table (9): analysis the exposition of the impact of both dye type and the amount of change and maturity on the dye color stability for washing in the case of non-presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	3.694444	2	1.847222	4.75	0.030231	3.88529
The amount of change	0.347222	1	0.347222	0.892857	0.363342	4.747221
Dye type * amount of change	0.694444	2	0.347222	0.892857	0.435023	3.88529
Error	4.666667	12	0.388889			
Total	9.402778	17				

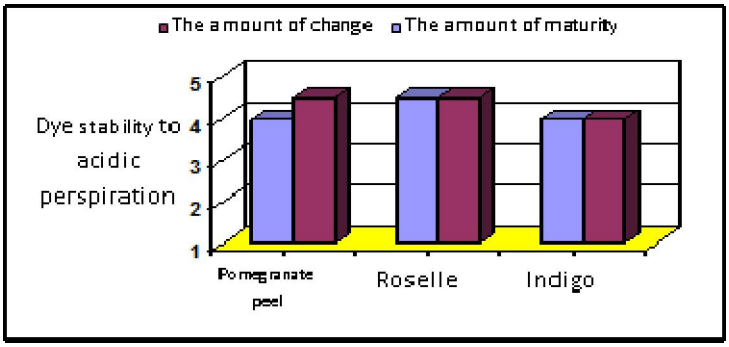

Figure (21) the impact of the dye type on dye color stability to acidic perspiration in the case of presence of Alum as mordant.

Table (10): analysis the exposition of the impact of both dye type and the amount of color change and maturity on the dye color stability to acidic perspiration in the case of presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	0.75	2	0.375	1.5	0.262144	3.88529
The amount of change	0.125	1	0.125	0.5	0.493004	4.747221
Dye type * amount of change	0.25	2	0.125	0.5	0.618625	3.88529
Error	3	12	0.25			
Total	4.125	17				

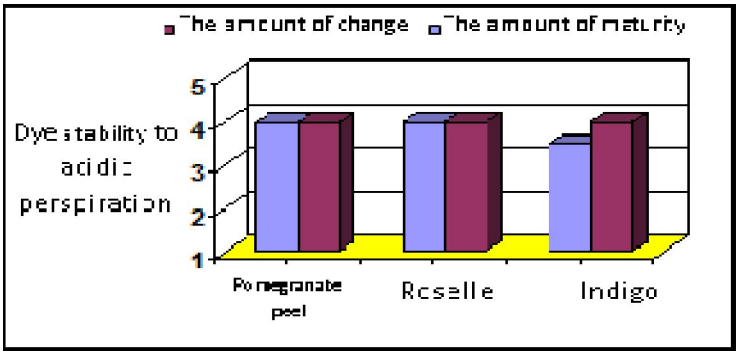

Figure (22) the impact of the dye type on dye color stability to acidic perspiration in the case of non-presence of Alum as mordant.

Table (11): analysis the exposition of the impact of both dye type and the amount of color change and maturity on the dye color stability to acidic perspiration in the case of non-presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	0.25	2	0.125	0.581395	0.574116	3.88529
The amount of change	0.125	1	0.125	0.581395	0.460492	4.747221
Dye type * amount of change	0.25	2	0.125	0.581395	0.574116	3.88529
Error	2.58	12	0.215			
Total	3.205	17				

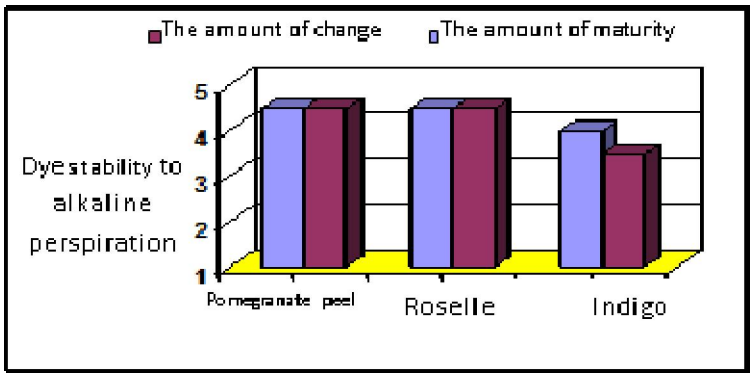

Figure (23) the impact of the dye type on dye color stability to alkaline perspiration in the case of presence of Alum as mordant.

Table (12): analysis the exposition of the impact of both dye type and the amount of color change and maturity on the dye color stability to alkaline perspiration in the case of presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	2.25	2	1.125	4.5	0.034815	3.88529
wet	0.125	1	0.125	0.5	0.493004	4.747221
Dye type * wet	0.25	2	0.125	0.5	0.618625	3.88529
Error	3	12	0.25			
Total	5.625	17				

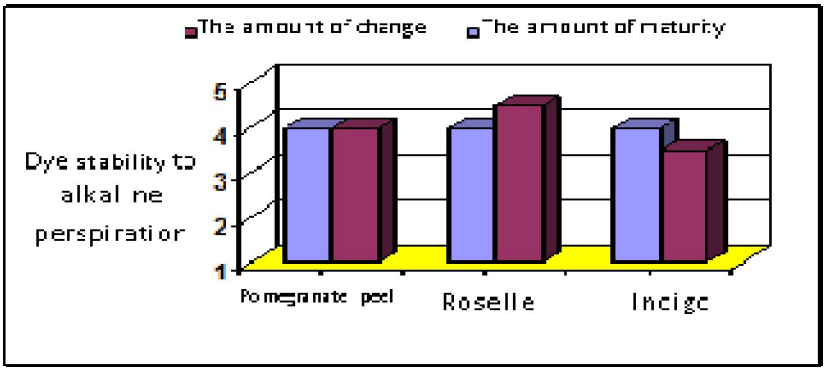

Figure (24) the impact of the dye type on dye color stability to alkaline perspiration in the case of non-presence of Alum as mordant.

Table (13): analysis the exposition of the impact of both dye type and the amount of color change and maturity on the dye color stability to alkaline perspiration in the case of non-presence of Alum.

Source of change	Squares sum	Freedom degrees	Squares average	Calculated value of F	Level of significance	Value of tabular F
Dye type	0.75	2	0.375	1.744186	0.216298	0.75
The amount of change	0	1	0	0	1	0
Dye type * amount of change	0.75	2	0.375	1.744186	0.216298	0.75
Error	2.58	12	0.215			2.58
Total	4.08	17				4.08

Significance guide

Significant at significance level 0.01, or significant at statistically safety 1%	
Significant at significance level 0.05, or significant at statistically safety 5%	
Non-significant	

Presentation and Discussion of Results

1 - researcher adds to dyeing processes a clarification of functional, aesthetic aspects of dyeing, is knowing that the dyeing of fabrics gives various colors, from whom is light and what is dark and this significantly affect in clothes and extent of color fitness for the skin and for the occasion. The homogeneity of color gives joy and brightness to clothes, also light colors reflect light and thus they give a picture largest in size, but dark colors absorb light and therefore give a picture less in size. This sense clarifies that colors of clothes affect on the personal appearance in terms of the manipulation with visual deception, the color has great importance in giving the appropriate picture which fits the personal appearance and that what women want and that by choose the best colors.

researcher has noted by the results of the laboratory and applied study that it can integrate color groups of the natural dyes such as Roselle dye with pomegranate peel dye in the laboratory method, and merging indigo with pomegranate peel and Roselle in the traditional home method with a difference of color graduation and a difference in the "Tie Dyeing" method between the two methods, and this manner gave different results with overlaps and decorative effects very beautiful.Through the tests which applied on the dyed fabrics in laboratory method, researcher found that the stability degree of colors was high in the presence of mordant or non-presence of mordant, figure (31) and (35). The laboratory method has given stronger colors than that implemented in practice at home.

Thereby, the first hypothesis has been achieved, which states: the possibility of merging groups of color from natural dyes to get the new color effects.

2 - Use different methods for "Tie Dyeing" when implement of the dyeing process with Indigo, Roselle and pomegranate peel. Whether using the home method or the laboratory method, knitting has been by using the house method randomly while connectivity has been by using the laboratory method perfect and that resulted a difference in the aesthetic effects which resulted on the fabric. Study of each of (Hussein, 1993 AD) has been confirmed that and provided a history brief about the decoration of textiles by "Tie Dyeing". And (Sharif,1985 AD) and (Haggag, 1978 AD), which showed a method of "Tie Dyeing" in terms of its origins and its evolution as a method of dyeing method and presented some technical solutions and possibilities of the "Tie Dyeing" to get the trappings of variety in its shape, figure (31)and (35). Thereby, the second hypothesis has been achieved, which states that there is a relationship between the methods used in the dyeing and resulted aesthetic effects on the fabric.

3- results of the proposed and implemented designs showed the possibility of designing varied clothes and innovative for children of the early childhood stage, perform the functions and aesthetic aspects, and consistent with the findings and recommendations of the study of each of (Mohammed, 2003 AD) and (Elshafi'i, 1994 AD) in the need to know the characteristics of the children's growth and the bases of the design of children's clothing to fill their needs of clothes. The study (Mustafa, 2003 AD) about the possibility of using the remains of dyed fabrics and use them in implementation of clothes suitable for the early childhood stage where the issue which resulted from the accumulation of fabrics remains has been resolved. Thereby, the third hypothesis has been achieved, which states: the possibility of innovation varied designs for children's clothes in early childhood stage through the use of aesthetics of traditional dyeing, where:

3-1 - the study has provided (25) proposed design, was used in its presentation "Photoshop program" to show the possibility of implementing it.

3-2 was performed (15) design by using fabrics which dyed either by the traditional applied method or laboratory method to show the aesthetics of dyeing through design lines and material appropriate for each of the design and decoration which consisted of dyeing and different methods has been used in the implementation. The first method is implemented designs where full design implemented of dyed fabric. The second method is the implementation of the design by using part of the dyed fabric as an addendum to the costume even allow for the implementation of the maximum amount of children's clothes, and the third method by adding part of the dyed fabric to garments to take advantage of the remains of fabrics in the decoration of ready-made children's clothes and to renew it innovatively. Thereby, the third hypothesis has been achieved, which states: the possibility of innovation varied designs for children's clothes in early childhood stage through the use of aesthetics of traditional dyeing.

Recommendations

The researcher recommends with the following:

1 - The use of cotton fabrics for children's clothes because its properties ensures the children's health. With preference to choose cotton fabric in its implementing.

2 - Taking into account the aesthetic and functional aspect when implementing children's clothes with no negligence of achievement of the safety element for the child.

3 - The use of natural dyes and attempt to discover a new technology for the production of these dyes commercially.

4 - Procedure further research on natural dyes and its various kinds, and procedure experimentations on new types of plants in order get more colors and its degrees, in addition to achieving the maximum amount of color stability.

5 - awareness the community with the importance of the use of natural dyes and do not use the chemical dyes which contain toxic substances harmful to the human and environment through various media and training courses.

6 - Preparation of the sophisticated programs in the field of hand-dyeing is characterized by creative thinking in terms of dealing with specific techniques and reveal for the new in it and especially the traditional ones.

7 - Attention with all which is a friend to the environment in line with the international organizations and pro-environment healthy.

8 - issue Saudi's standard specifications for children's clothes fabrics and dyes used, where ascertain in it the conditions of "ECHO" label, and the traders have to adhere to it when importing children's clothes.

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