Unit 7
INTRODUCTION TO LAUNDRY

Remember a little

- *Why it is necessary to wash the clothes?*
- *How does the clothes worn by you get soiled?*
- *What requisites are required to wash the clothes?*

7.1 INTRODUCTION

The fabric soils when the loose dust particles rest on the surface of the fabric or are held by means of greasy substance. Clothes require laundry after they are used so that they can be worn again, clean, fresh, hygienic and spotless clothes are the outcome of successful laundering.

- Laundry is both science and art. It is based on the application of scientific techniques which require certain skills. Laundering involves different processes Example. washing drying, ironing, pretreatments stain removal, starching dry-cleaning etc. To take good care of the fabrics is the main aim of laundry. Knowledge of laundry is very essential to achieve this aim.

- **OBJECTIVES OF LAUNDRY :**

  1. **To clean the clothes:** Laundering process removes the dirt from the garments and makes it clean. It involves two processes a) immersion of fabric in a solvent b) agitation to remove the dirt.

  2. **To improve serviceability of the clothes:** Fabrics can give good serviceability if proper care is taken during laundering.

  3. **To retain attractiveness of clothes:** Finishing process like blueing, stuffing and ironing can help in retaining good attractive look of the material.

  4. **To study various principles and methods of laundering:** different fibers react differently to various processes and reagents. Thus based on the nature of fabrics various principles and methods are used to get best results.

  5. **To develop skills regarding the use of various laundryequipment's:** Various Types of tools and equipment's are used in laundry today. Most of the modern appliances are time and labour saving. The skillful use of these equipment's is the need of the modern laundry.

7.2 SCOPE OF LAUNDRY

- The textile industry is scaling new heights and entering new horizons, so do the field of laundry. Majority of people in Indian families launder their clothes at home. The urban families use electric washing machines and new laundry reagents in household laundry.
- Today Big Cities and town have commercial laundries. These laundries have customers and tie-ups with hotels, hospitals, hostels and various firms. They use bigger equipment's and have various sections to perform the task.
- Many institutes like hotels and hospitals have their own laundry. Thus knowledge of Laundry science is important to get maximum performance and satisfaction from to use.

7.3 VARIOUS METHODS OF WASHING

When we use/wear clothes, they get soiled and creased and need laundering before they can be worn again. It involves two main processes :

i) Cleaning clothes to remove dirt.

ii) Finishing them to regain their new, neat appearance.

The method of laundering depends upon the type of fabric and the type of dirt. Choosing the most appropriate method of laundering is important in order to make the clothes last longer and serve us better.

- **The dirt on the fabrics can be of two types :**

1. Loose dirt
2. Fixed dirt

The loose dirt can be removed easily by just brushing the fabric but the fixed dirt has some portion of grease in it which makes it stick to the fibres of the clothes.

Can you tell ?

- What preliminary arrangement are required before washing clothes?
- Which washing methods are adopted for washing clothes at home.

- **Preparation of clothes for laundering :**

1. Empty the pockets and examine the garments for tears, holes and stains.
2. Repair the garments before washing them.
3. Remove those stains which are not likely to be removed by laundering.
4. Sort out clothes according to size, colour, type of fabric and amount of dirt.
5. Shake well before steeping to remove loose dirt.
6. Steep white and coloured clothes separately.

Different types of clothes require different treatment while washing. This is because of a variety of factors like fibre content, surface of the fabric, amount of soil present in the fabric and so on. There are few scientific methods of washing or laundering clothes which are as follows-

1. Friction washing, 2. Application of light pressure, 3. Suction washing and 4. Washing by machine.

1. **Friction Washing :** Here the fabric is rubbed to remove the fixed dirt. This method can be applied only for strong and durable fabrics which can withstand friction without damage like cotton and linen fabrics. Friction can be applied in different manners :

   A. **Hand Friction** – This method is useful when small clothes like handkerchiefs or baby clothes are to be washed. Clothes are steeped in soap solution and then rubbed by hand to clean them (see picture. No.7.1). This method does not put much strain on the clothes but it is not suitable in case of bigger clothes or heavily soiled clothes.

Fig 7.1 Hand Friction

   B. ***Scrubbing Brush*** –Scrubbing brush is a small appliance made of plastic and available in different sizes and colours. Washing with scrubbing brush is the most popular method used at household level (see picture. No.7.2). It is suitable for most of the clothes. The bristles of brush get in between the yarns and pull them and so there is more possibility of damage to the fabric by this method. It is definitely not suitable for washing Turkish towels as the bristles may get into the loops on the surface and ruin them. If the cloth to be washed is of big size, this method will take a lot of time and effort.

Picture. No. 7.2 Scrubbing Brush

   C. **Scrubbing Board** – This is a specific instrument used for laundry. It is not a household item but it can be found in commercial laundries and laundry laboratories. Large, very soiled clothes like pants, shirts, uniforms, overalls etc.canbe washed easily by this method in less time and with less effort. It is made of wood. A number of horizontal wooden strips are fixed on two bigger vertically placed wooden strips (see picture. No. 7.3). Sometimes corrugated cement, zinc or fibreglass sheets are used. It is small enough to fit in a laundry tub. The cloth is steeped in soap solution and then put on the board and is

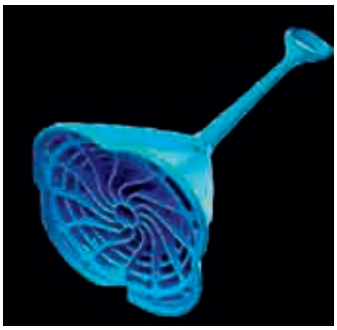
rubbed against the wooden strips. The clothes get cleaned quickly with less effort and the damage to the clothes is also less.

Picture. No. 7.3 Scrubbing Board

2. **Application of Light Pressure :** This method is also known as **Kneading & Squeezing method**. This method is suitable for delicate fabrics whichcan not withstand friction washing. The clothes are steeped in soap solution and then kneaded lightly taking care that too much pressure is not put on the fabrics (see picture. No. 7.4). The soap solution is removed by gently squeezing the clothes, hence the name Kneading & squeezing method. This method is especially suitable for silk, wool, lace, net and such delicate fabrics.

Picture. No. 7.4 Kneading and Squeezing Method

3. **Suction Washing :** Large and heavy clothes like blankets, bed sheets, curtains etc. can not be satisfactorily washed by scrubbing brush or scrubbing board. To save the time and energy in washing such clothes, a specific instrument called Suction Washer is used and so the method is called suction washing. At the lower part of suction washer, a shower like hollow part of copper or zinc with holes or openings in it. A wooden rod is fitted



Picture. No. 7.5 Suction Washer

to the upper part of this (see picture. 7.5). The clothes are put in a tub filled with soap solution and the suction washer is pressed upon them in an up and down movement again and again. Every time the suction washer is pressed down on the clothes, a vaccum force is created and so water comes out with force through the holes taking away some dirt from the clothes with it. When the pressure of the suction washer is removed, the clothes are filled with soap solution again. A suction washer is usually worked for 10-15 min. In this manner to clean a fabric. Very large and heavy clothes also get cleaned very easily. It is also useful in washing clothes which are evenly soiled.

4. **Washing by Machine :** This is the latest and most convenient method of washing clothes at home. An electric machine called Washing Machine is used for this purpose. It saves energy. A lot of clothes of different varieties can be washed in this machine with ease. There are various brands available in market. All washing machines are based on the general principle of Pedesis.

Always Remember:

Even in still water, the water particles keep on moving slightly to and from. This slight movement of water particles is called **Pedesis**. This phenomenon is important in laundry because when the fabric is in water, the water particles go in and out of the fabric. Every time they go inside the fabric they dissolve some dirt and every time they come out, they take the dirt out with them.

The washing machine has one or two tubs made of steel or plastic in which dirty clothes are put. The tub is filled with water either automatically or manually and soap is added. When the machine is switched on, the tub rotates alternately in clockwise and anti-clockwise direction putting clothes and soapy water in motion thus enhancing the pedesis. The clothes are cleaned by the combined effect of soap and the movement of water and clothes. The various factors involved in washing of clothes like filling and draining out water, movement of clothes, direction and speed of revolutions of tub, rinsing, spinning, temperature of water and time required for these functions are controlled by specifically programmed electronic device fitted inside the machine. Different modes are given for washing different types of clothes like cottons & linens, delicate, wool, silk, synthetics. The modes can be selected by moving the knobs and pressing the buttons situated on the front side of the machine.

Washing machines are mainly of two types – Semi automatic and Fully automatic depending upon how they carry out the three major operations of washing i.e.

1. **Washing** - with soap solution
2. **Rinsing** - with clear water
3. **Spinning** - draining as much water as possible from clothes

- **Semi Automatic Washing Machine**

In this machine, there are twin tubs (see picture. No. 7.6). The operations of washing and rinsing are carried out in one tub while the operation of spinning is carried out in another tub. The person operating the machine has to be around to fill up the first tub with soiled clothes, add soap powder in the space provided and start

the machine. The water can come into the tub by a direct connection or can be poured into the tub manually. Once the operations of washing is over, the machine requires fresh water for rinsing which again might have to be supplied from outside. Once the rinsing operation is over, the machine gives a beep sound and then the washed clothes have to be picked from the first tub and put in the second tub for spinning operation.

The special facts about this type of machine are :

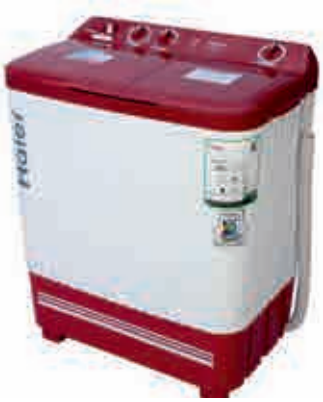
a. The three operations are carried out in two tubs separately.

b. Person operating the machine has to be around all the time.

c. Regular continuous supply of water is not required. Water can be added with the help of bucket.

d. These machines are cheaper.

e. These are top loading machines i.e. the tubs have lids on the top and clothes are put and taken out from top.



Picture. No. 7.6 Semi-automatic Washing Machine

PREPARE A LIST AND DISCUSS

- Name the companies manufacturing washing machines.
- What are the facilities given to the consumer by the washing machine manufacturers.

- **Fully Automatic Washing Machine :**

In this machine, there is only one tub and all the three operations i.e. washing, rinsing and spinning are carried out in it. It is called fully automatic because once the clothes are put and the soap powder is added, we just have to press the on button and the machine does the entire process of washing clothes by itself (picture. No. 7.7).

The special facts about this machine are :

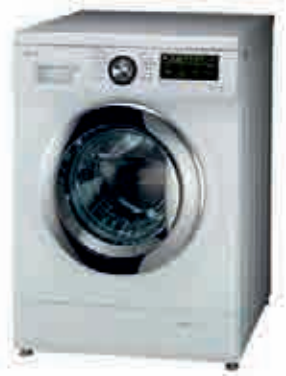
a. The three operations are carried out in a single tub.

b. The person operating the machine can load and switch on the machine and his/her continuous presence is not required.

c. Continuous water supply is required.

d. This machine is costlier.

e. The machine can be top loading or front loading i.e. the lid of the tub is either on the top or in front of the machine.



Picture. No. 7.7 Fully-automatic Washing Machine

7.4 WASHING DIFFERENT TYPES OF CLOTHES

Washing and cleaning of clothes is a daily chore in every household. The person carrying out laundry must have the knowledge of washing different kinds of clothes in a correct manner.

1. **Washing of White Cottons :** Cotton is a strong fibre. It has good moisture absorption and is not affected by high temperature and alkali. Because of these properties, it is easy to clean cotton fabrics.

- **Preparation :**
  a. Separate the white cottons from the coloured and synthetic ones.
  b. Check the clothes and repair any holes or tears if present.
  c. Remove all those stains separately which are not likely to be removed by regular washing.
  d. Open the clothes fully and steep them in hot soapy water. As cotton is not affected by alkali any soap or detergent can be used.
  e. Add washing soda if the clothes are too soiled.

- **Washing :**
  a. White cottons can be soaked for as long as 30-40 minutes.
  b. Use scrubbing method to clean white cottons. For small articles like handkerchiefs and baby clothes, use hand scrubbing and for bigger clothes use scrubbing brush or scrubbing board.
  c. Special attention should be given to collars and cuffs as they are usually more dirty.
  d. White cottons can also be boiled for 15 minutes in soap solution.
  e. Clothes should be rinsed 2-3 times with clear water till all the trace of soap is removed.

Do you know this?

Sunlight is a natural oxidizing bleach which helps in whitening white cottons without damaging them.

- **After treatment :**
  a. A little amount of blue used in the last rinse gives a blue tinge to the white clothes and make them look more white.
  b. If starching is required, it should be done at this stage. Starching and blueing should be combined to make it one process.
  c. Wring the clothes tightly to remove as much water as possible.
  d. Dry them in direct sunlight.

2. **Washing of Coloured Cottons :** The main thing to consider while washing coloured cottons is to maintain the colour fastness of the cloth. Because of this reason, the washing of coloured cottons differ from that of white cottons in certain aspects. The colour fastness is affected by following factors :
   a. Long steeping time
   b. High temperature of water

c. Acidic and alkaline laundry reagent.

d. Friction

- **Preparation :**

a. Separate the coloured cottons from other clothes.

b. Check the clothes and repair any holes or tears if present.

c. Remove all those stains separately which are not likely to be removed by regular washing.

d. Open the clothes fully and put them in soapy water at room temperature.

- **Washing :**

a. Soak the clothes for 5-10 min only.

b. Suction washing or kneading and squeezing method should be used instead of friction by scrubbing brush.

c. Clothes should be quickly rinsed 2-3 times inclear water.

Let's try this?

If the colour is Bleeding, addition of salt or vinegar in the rinsing water helps in stopping or reducing that.

- **After Treatment :**

a. A little vinegar or acetic acid in the last rinse helps in fixing the colour and make it look brighter.

b. If needed, starching should be done.

c. Wring the clothes as tightly as possible and dry them in shade.

Do you know this?

The ultra violet rays of sunlight break the bond between the colour and the cloth thus making the colour fade. This is why coloured cottons should not be dried in direct sunlight.

3. **Washing of Woollens :** Wool needs to be washed carefully because of a number of reasons-

a. Wool is a weak fibre and in wet condition its strength decreases further.

b. It is affected by temperature.

c. It is affected by alkali.

d. It is affected by friction.

- **Preparation :**

a. Shake the woollen garment to remove loose dirt.

b. If there are any holes repair them before washing.

c. Mark out the outline of the garment on paper before washing as woollens have a tendency to shrink after wash.

d. Remove all those stains separately which are not likely to be removed by regular washing.

- **Washing :**

a. Put the woollens in lukewarm water in which a neutral soap is added.

b. Do not steep as the woollens get weaker the longer they remain in water.

c. Apply the light pressure method to wash woollens and be quick so the woollens are in contact with water for minimum time.

d. Rinse quickly but thoroughly 2-3 times in clear water.

Do you know this?

A neutral soap is a soap which does not have any free alkali in it. As you know wool is damaged by alkali.

Ritanut is a natural neutral detergent and gives very good results in case of woollens.

- **After Treatment -**

a. A little amount of citric acid or lime juice is added in the last rinse for white woollens while vinegar is used for coloured woollens to counteract any traces of alkali and make them look fresh.

b. Wringing woollens will damage them, so they should be wrapped in a dry towel and pressed by hands to squeeze out as much water as possible.

c. After removing the moisture, place the garment on the paper on which its shape was drawn and if shrunk, pull it to bring it to its original size.

d. Spread the woollen garment flat on towel or mat or a piece of cloth for drying in shade.

OBSERVE THE FACT:

Woollens can be stretched and brought back to their original shape and size easily when they are wet. Once they dry up in the shrunken state, it is impossible to bring them to their original shape and size.

If woollens are hung when wet, they stretch and go out of shape, so they have to be dried flat.

4. **Washing of Silks :** Silk has a delicate texture and a natural luster which must not get

damaged due to laundry so extra care is required while washing silk garments.

Following factors should be considered while washing silks-

a. It is an animal fibre and gets damaged by alkali.

b. It can get damaged by high temperature of water.

c. It gets weakened when wet.

d. Any kind of force cannot be applied while washing as it will damage the fine texture.

Always Remember

Silks have to be ironed when still slightly damp as they cannot be damped for ironing like other fabrics. The water does not spread through the fabric and then water spots are seen on the fabric after ironing.

- **Preparation :**

a. Separate white and coloured garments.

b. Check the clothes and repair any holes or tears if present.

c. If there are any stains, remove them carefully using milder reagents like borax, sodium per borate, hydrogen peroxide etc.

- **Washing :**

a. Steeping is not done in silk as it gets weakened in water.

b. Use lukewarm water and neutral soap like woollen washing.

c. Use Light pressure method to wash silk fabrics.

d. Rinse thoroughly but quickly 2-3 times in clear water.

- **After Treatment :**

a. Add lemon juice or vinegar in the last rinse with cold water to improve the sheen of the fabric.

b. If extra crispness is required, a little amount of Arabic gum water can be added in the last rinse.

c. Squeeze the silks lightly to remove water from them.

d. Dry in shade.

e. Iron it when still little damp for best results.

5. Washing of Synthetics : Garments made from synthetic fibres like nylon, polyester etc. are easy to clean. They do not attract dust and dirt due to their smooth surface and they dry faster because their moisture absorption is less. They are strong and do not require any special precaution for washing.

- **Preparation :**

a. Separate white and coloured garments.

b. Check the clothes and repair any holes or tears if present.

c. Remove all those stains separately which are not likely to be removed by regular washing.

- **Washing :**

a. Lukewarm water and mild soaps or detergents are used for washing synthetics.

b. Steeping does not help because the water anyway remains on the surface and does not penetrate the fabric.

c. Any method of washing can be used but heavy friction with a scrubbing brush should be avoided as it may damage the smooth surface.

d. Rinse thoroughly to remove soap from the fabric.

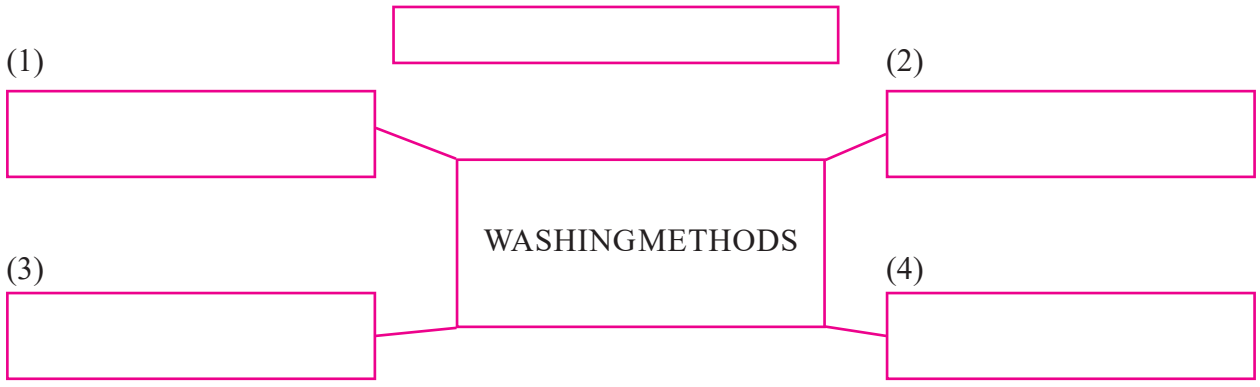
- **After Treatment :**

a. Synthetics are drip dried as wringing does not help

Do you konw this?

Synthetic fibres absorb less water and the water does not penetrate the fabric so wringing these garments is not helpful. The water is on the surface only and when they are hung dripping wet (drip dried), they dry better and require little or no ironing at all.

COMPLETE THE WEB



EXERCISE

Objective Type Questions

I. Math the following pairs :

A		B	
1.	Semi- automatic machine	a)	White Cottons
2.	Fully automatic machine	b)	Coloured Cottons
3.	Gum Arabic	c)	Continuous water supply
4.	Neutral soap	d)	Twin tubs
5.	Drying in shade	e)	Washing of woollens
		e)	Washing of synthetics
		f)	Stiffening of silk

II. Write whether the given sentences are True or False :

1. Suction washer is used for heavy fabrics.
2. A person has to be around while operating a fully automatic washing machine.
3. Woollens should not be steeped in water for long.
4. Silks should be dried flat.
5. Synthetic garments may loose their shape while washing.

MULTIPLE CHOICE QUESTIONS

III. Select and write the most appropriate answer from the given alternatives for each question :

1. Clothes which should be dried in direct sunlight
   a) Coloured cottons
   b) Woollen
   c) White cottons
2. Washing method most suitable for delicate clothes
   a) Hand friction
   b) Suction washing
   c) Kneading& squeezing
3. Washing machines operate on the basic principle of
   a) Rinsing
   b) Pedesis
   c) Cleaning
4. The soap used for washing woollens
   a) Alkaline
   b) Neutral
   c) Acidic
5. Drying method for synthetic garments
   a) Flat drying
   b) Drip drying
   c) Line drying

6. Stiffening agent for silk
   a) Gum Arabic
   b) Maida
   c) Rice
7. Washing machine with the lid in front.
   a) Semi-automatic
   b) Top loading
   c) Front loading

Short Answer Type Questions

I. Give reasons :

1. Coloured cottons are dried in shade.
2. White cottons are dried in sunlight.
3. An outline of the woollen garment should be made on a paper before washing it.
4. Ritanut is used for washing woollens.
5. Vinegar is added in the last rinse for silk clothes.
6. Vinegar is added in the last rinse for coloured cottons.

II. Draw diagram and label them :

1. Suction washer
2. Scrubbing board

III. Differentiate between :

Washing of white cottons
and
Washing of coloured cottons

Fully automatic washing machine
and
Semi automatic washing machine

Kneading & squeezing method
and
Suction washing

IV. Write short notes on the following :

1. Washing of woollens - After Tratment
2. Washing of coloured cottons - Preparation
3. Washing of synthetics
4. Types of washing machines
5. Give the objectives of laundry

Field Visit

1) Collect the information about various types and models of washing machines by visiting the shops of home appliances in the market or websites of various manufacturers on internet.

Self Study / Project

1) Visit a commercial laundry and prepare a chart of the cost of laundering different garments.
2) Go to commercial laundries near your house and observe the way they sort out clothes, the pre treatments and the after treatments.