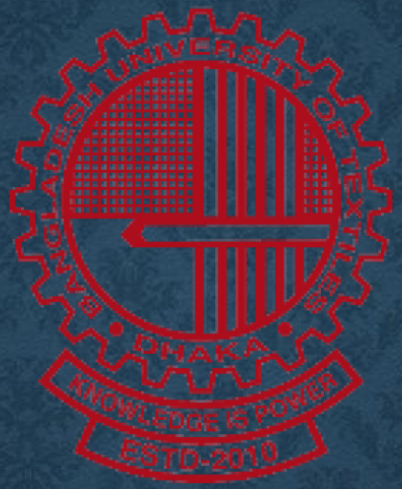
BANGLADESH UNIVERSITY OF TEXTILES



Project Title:

A Sustainable Approach: A Scope of Using the Solid Textile Cotton Wastage in Hygiene Product (Sanitary Pad) Manufacturing

This project is

Supervised By,

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2016-1-2-019

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2016-1-2-050

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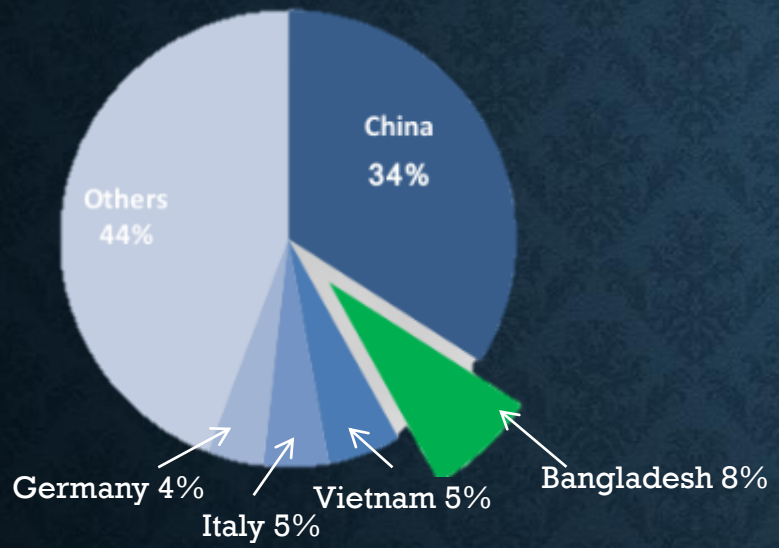
2016-1-2-051

TEXTILE CONTRIBUTION



Textile Industries	Unit in number
Spinning	425
weaving	400
Knitting	2500
Garment	4621

351,000 tons wastes annually

USES OF RECYCLED TEXTILE WASTAGES

PCW Yarn

Insulation Cloth

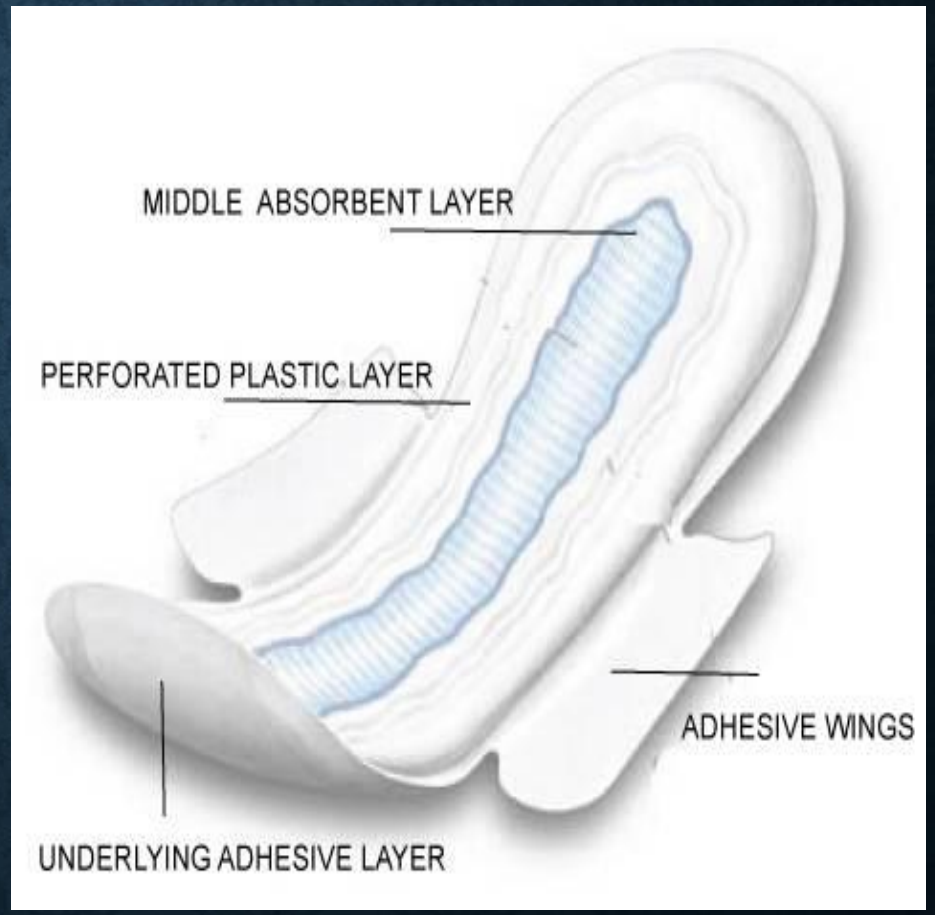
Wicking Cloth

Paper

Decorative Product

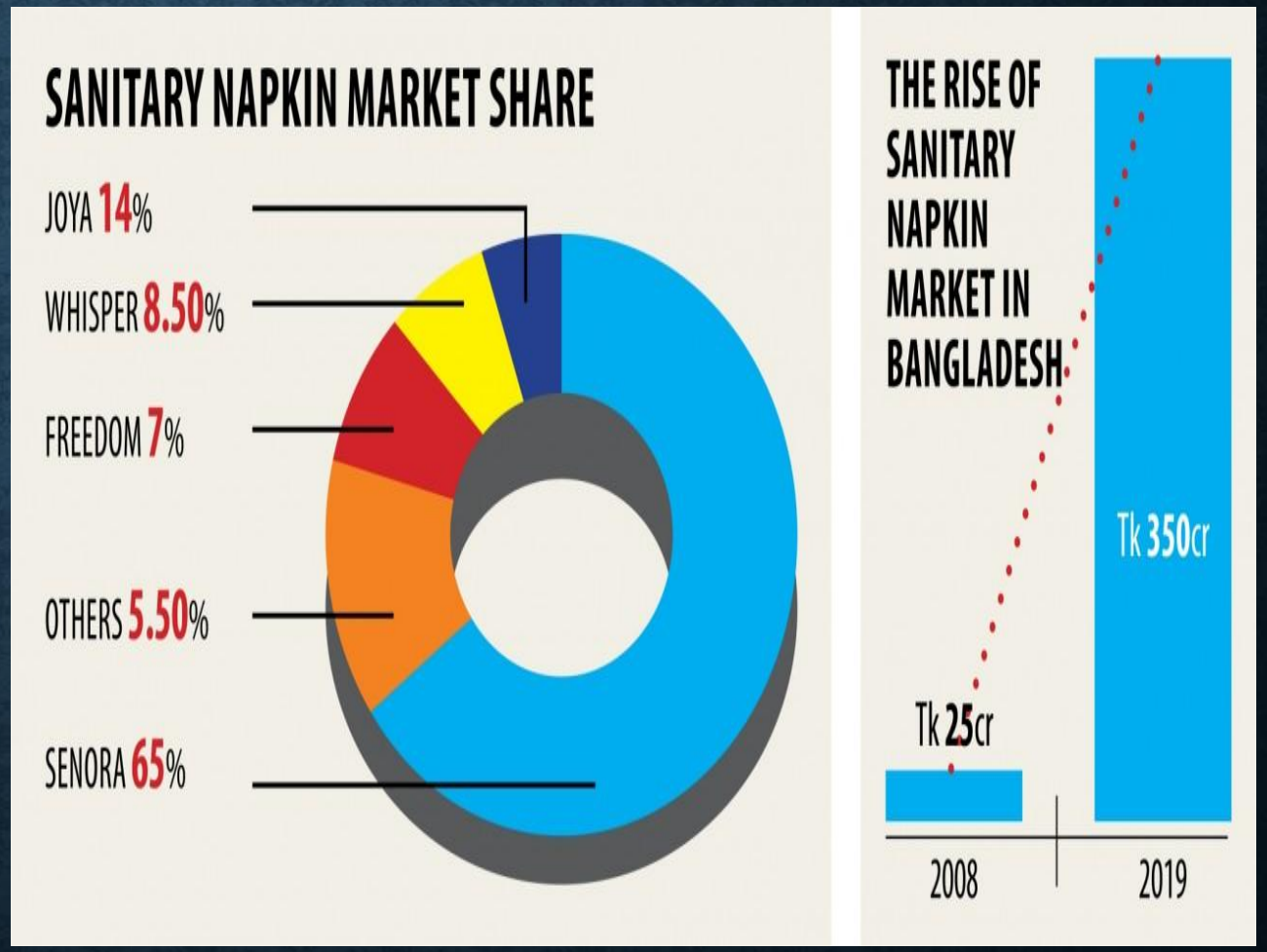
SCOPE

- All the materials used for manufacturing of sanitary are imported. If any of the material can be replaced by textile wastage, it will be a huge contribution for sanitary napkin industry and the price also can be minimized.
- Replacement of fluff Pulp of absorbent layer by cotton is the main focus of this project.



MARKET SCENARIO

Some available pads in market



Market share and growth

OBJECTIVES

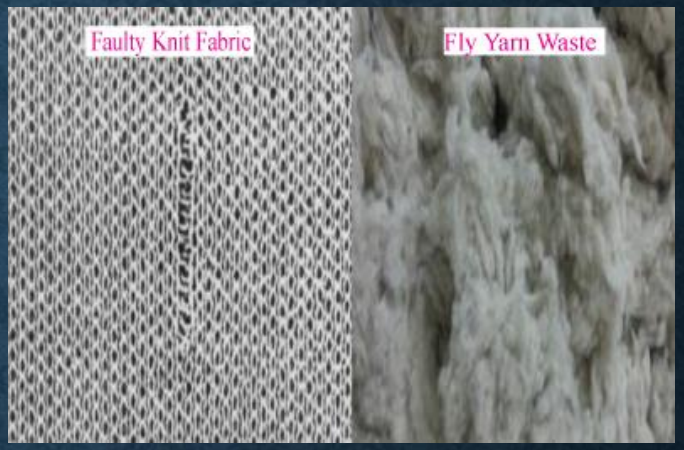
The objectives of our project are:

- To produce sanitary napkin from Textile cotton wastage
- To produce sanitary pad at a affordable price
- To reduce the environmental pollution

RAW MATERIALS

Wastages from different section are used as raw material:-

Spinning Industry Wastage



Knitting Industry Wastage

Weaving Industry Wastage

Garment Industry Wastage

RECYCLING PROCESS OF WASTAGE

Cutting

Tearing

Opening & Cleaning

PROCESSING OF RAW MATERIALS

Bleaching/Stripping

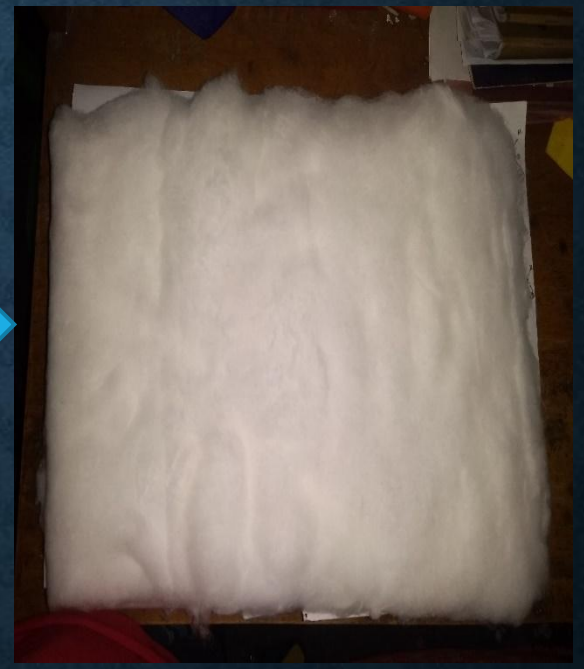
Trash analyzing

Carding

DIFFERENT FORMS OF RAW MATERIALS

Wastages

Fiber



Carded Lap

PRODUCTION PROCESS

❖There is 5 steps of sanitary napkin production;

1. Crashing
2. Compressing
3. Wrapping
4. Sterilizing
5. Packaging

PRODUCED SAMPLE

Dimension of produced sample:

Parameters	Value(average)
Length	198 mm
Width	68 mm
Thickness	14 mm
Weight	15 gm

DIFFERENT TYPES OF TESTS

The following Tests are carried out:

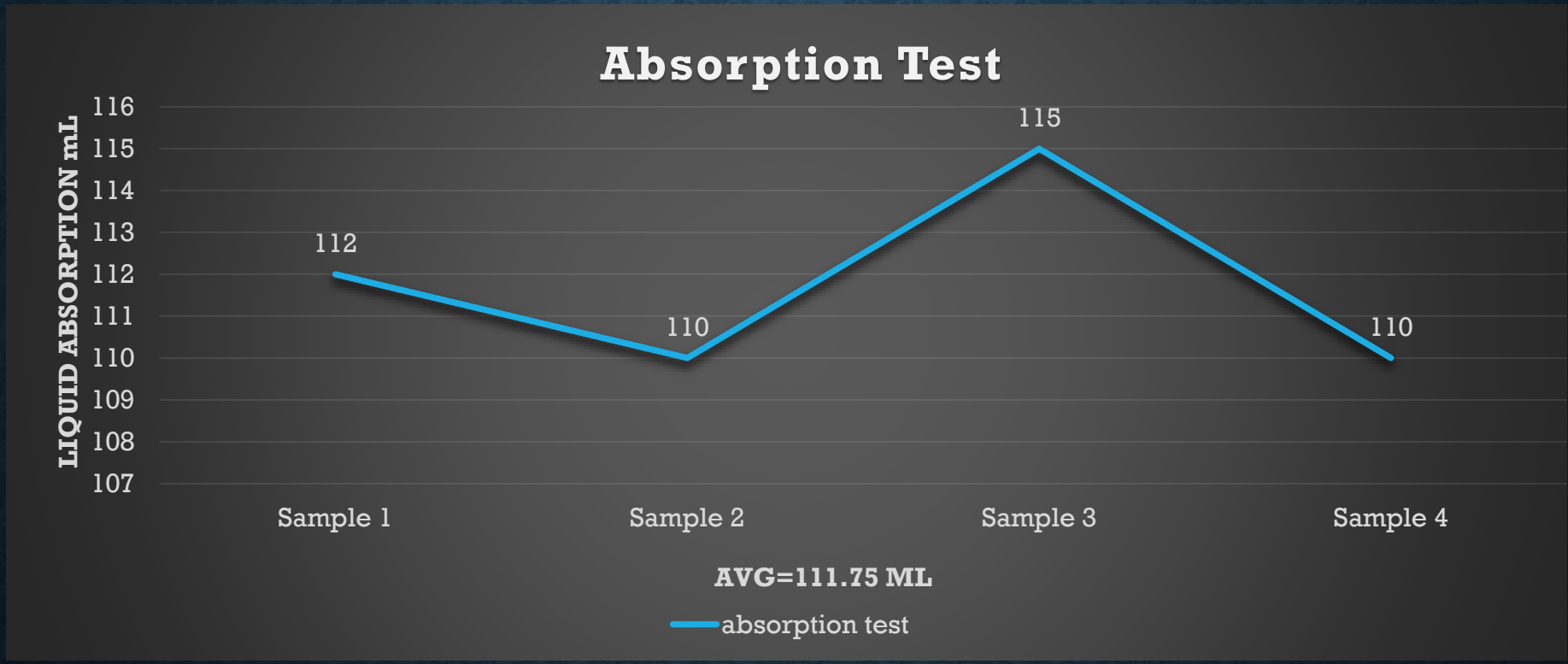
1. Absorption Capacity Test
2. P^H Test
3. Ability To withstand Pressure After Absorption
4. Penetration Test
5. Antimicrobial Test

ABSORPTION CAPACITY TEST

The Sample was immersed into demineralised water for 30 min.

The sample hang vertically in a stand for 30 min to release the extra water by gravity.

ABSORPTION TEST RESULT

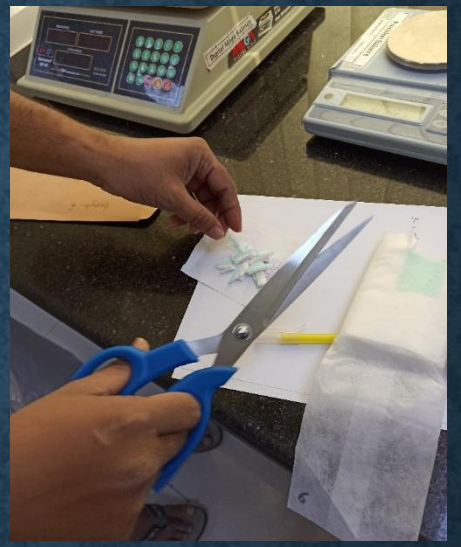


The standard range of absorption is 95-105 mL

P^H TEST

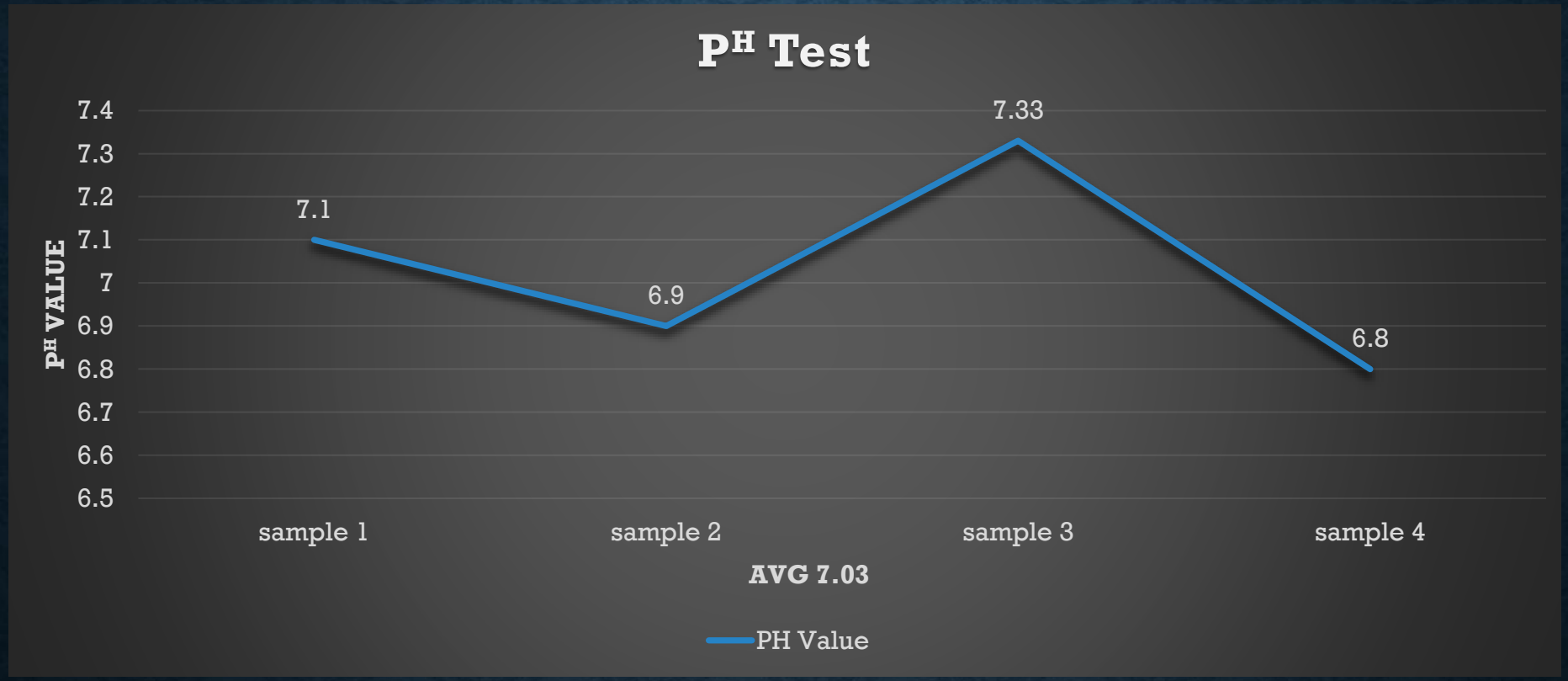
0.5 gm sample was cut from core of the pad

and mixed with 100 ml demineralised Water for 1 hour.



After 1 hour the P^H was measured by P^H meter.

PH TEST RESULT



The standard range of PH is 5.5-8.5

ABILITY TO WITHSTAND PRESSURE AFTER ABSORPTION

30 ml $K_2Cr_2O_7$ (1% solution) was poured on the sample.

Then 1 kg load was applied on the sample for 1 minute.

ABILITY TO WITHSTAND PRESSURE AFTER ABSORPTION RESULT

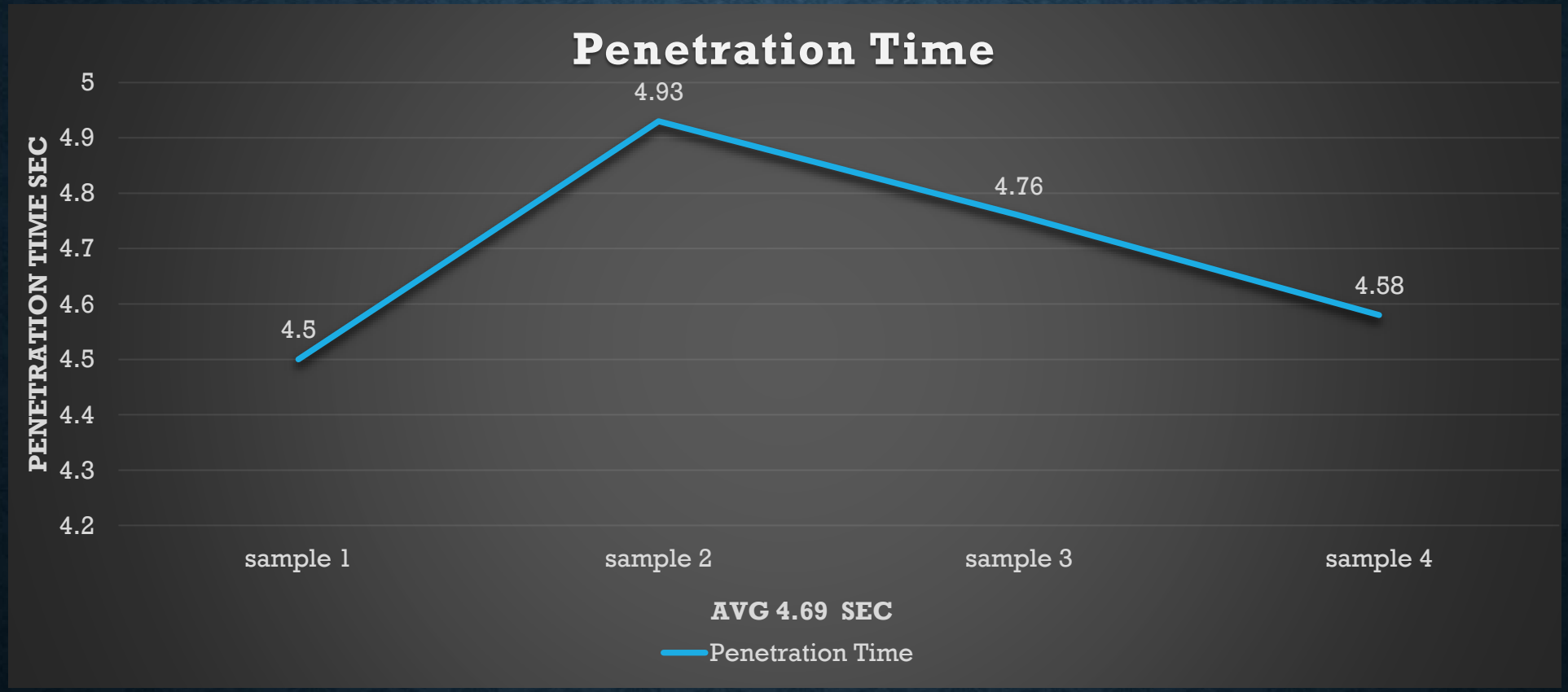
- Liquid retention was comparatively low which causes side leakage

PENETRATION TEST

20 ml of 1% saline solution poured on the sample with 3 ml/sec releasing speed.

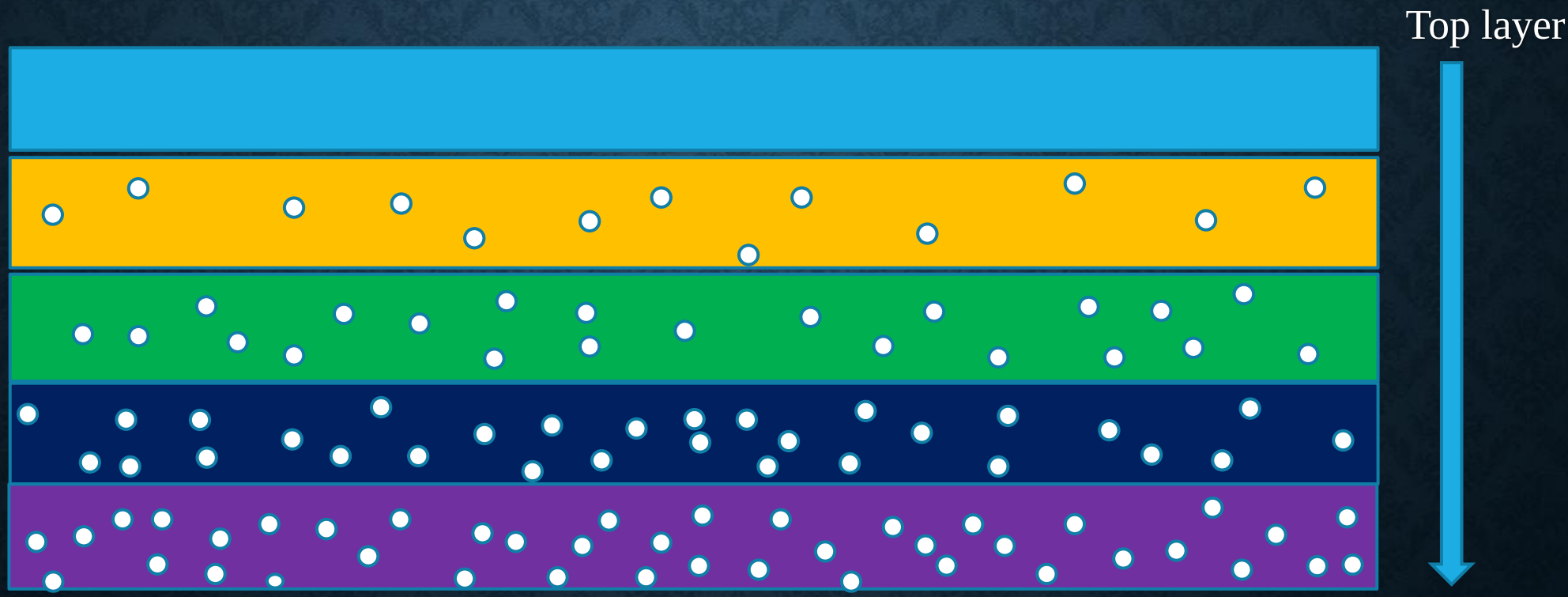
Liquid Strike through Time Tester

PENETRATION TEST RESULT



The standard range of Penetration Time is 2-2.5 sec

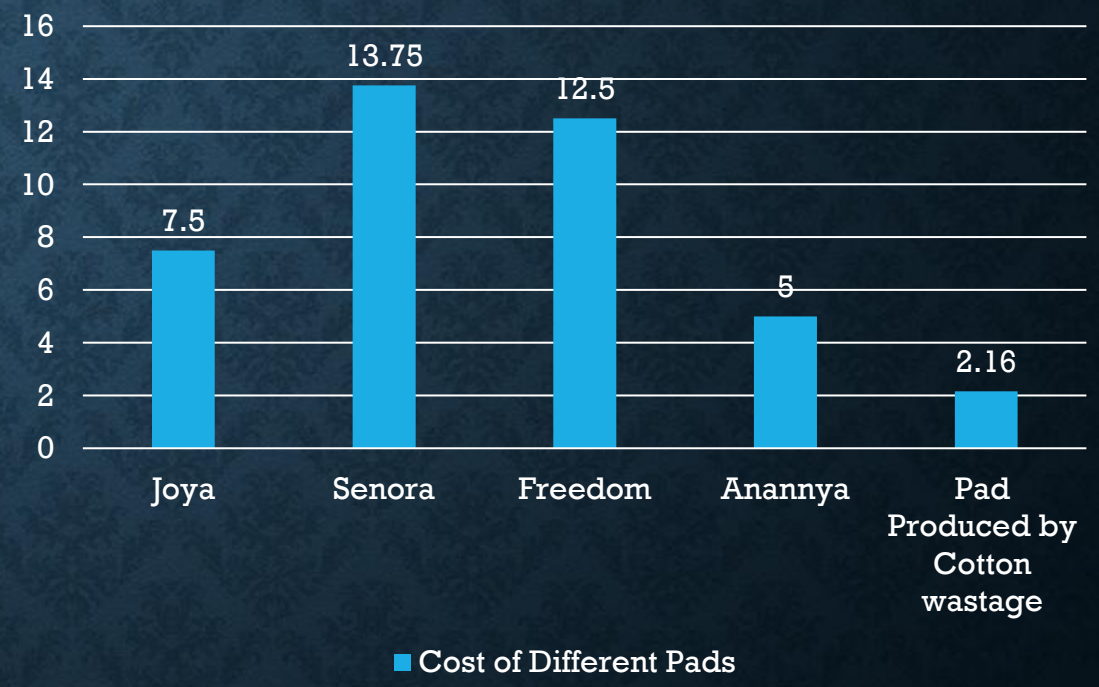
HYDRO GEL DISTRIBUTION



COST ANALYSIS

- Cost of producing sanitary pad from recycled cotton

Materials & Factory Overhead	Price	Cost of making one pad
Textile Cotton Wastage	BDT 46/kg	BDT 0.46
PE sheet (bottom layer)	USD 2.96/kg BDT 250/kg	USD 0.0041 BDT 0.35
Non-woven (top layer)	USD 3.13/kg BDT 265/kg	USD 0.0044 BDT 0.37
Factory Overhead		BDT 1
		Total = 2.16 BDT



FUTURE PROSPECTS

- To attain more liquid retention fluff pulp will be mixed at different proportion to optimized the quality.
- To get better performance and comfortability hydrogel arrangement will be improvised.
- The non-biodegradable nonwoven outer and inner layer and the polyethylene back sheet will be replaced by biodegradable materials.
- As diaper has the same requirement textile waste will also use in it.

THANKS

For Being With Us