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Attitude And Practices of Kutch Dyers & Printers Towards The Precautionary Measures and Handling Techniques in Context to Azoic(Napthol) Dyes

KEYWORDS: Azoic (Napthol) Dyes, Batik Printing, Personal Protective Equipment (PPE).

Ms. Beena Georgekutty
Research Scholar, Home Science Deptt.
Saurashtra University, Rajkot (Gujarat) INDIA

Dr. Nilambari. R. Dave
Professor & Head, Home Science Deptt.
Saurashtra University, Rajkot (Gujarat) INDIA

ABSTRACT *Kutch has living tradition of handicrafts that thrives in its cities, towns and villages. Dyeing and printing craft is the chief occupation of khatri community of Kutch. But various occupational health hazards are associated with dyeing and printing units. It is true that the work place is not proper and working conditions are non-congenial in most of the cases and involve risk factors. There are research studies and reports dealing with occupational risk factor among dyeing industry workers but such studies for dyeing and printing units of Kutch is yet to be done. So study on, "Attitude and practices of Kutch dyers and printers towards the precautionary measures and handling techniques in context to Azoic(Napthol) dyes". Majority of the dyers and printers using Azoic (Napthol) dyes had knowledge and practice in safe handling of dyes and chemicals. Very few dyers and printers doing Azoic(Napthol) dyeing had a positive attitude and practice of wearing personal protective wear or equipment. Very less dyers and printers had an appropriate attitude and practice towards use of first aid during accidental hazards.*

Introduction:
Kutch is famous for its craft and culture all over the world and is the largest state of Gujarat. Kutch is known as hub of handicrafts. Kutchi handicrafts had been popular among people since years. Handicraft industry occupies a pivotal position in the economic dynamism of various countries. Handicraft is one of the important industries employing a large number of people on its workforce thus providing financial support and keeping the tradition and culture alive by medium of the craft produced.

Azoic dyes are also called Napthol dyes. Cotton, rayon, and other cellulosic fibers, as well as silk, can also be dyed with azoic or Napthol dyes. Napthol dyes are true cold water dyes. Napthol dyes are suitable for use in batik, since they do not require heat that would melt the wax to set the dye. Napthol dyes include more hazardous chemicals. The reaction that produces dyeing takes place when two components, a diazonium salt and a Napthol compound, join together to form a highly coloured, insoluble compound on the fabric. These dyes are also known as ice dyes because the reaction takes place at lowered temperatures. They have good colourfastness to laundering, bleaching, alkalis and light. However colours are mainly in the red range.

Batik is a resist dyeing technique. Wax is used as resist to protect the areas where we do not require the colour. Batik is an Indonesian word derived from the word "ambatik" meaning a cloth of little dots. This refers to the tiny drops of hot melted wax used on the design to resist the dye. Nowadays the motif is carved on the block and the block is dipped in wax and is pressed onto the fabric, and the molten wax is thus imprinted on the cloth. The fabric most suitable for batik is either silk (with acid dye) or mercerized cotton (Napthol dye) on which best results can be obtained. The basic two types of wax used are bee wax and paraffin. After dyeing is complete, a final rinse in hot water removes all traces of wax. During the dyeing minute cracks occur in wax, thus leaving in tiny specks of dye. This produce the fine veins of colour on a piece of batik. This crack effect is the unique characteristic of batik work.

Many of the components used in Napthol dyeing are known or suspected carcinogens so strict cleanliness, and strict use of protective clothing such as goggles, face masks, gloves, and lab coats should be followed. Dye powder must not be allowed to become airborne. Dye powders and solutions must never be allowed to contact the skin. Use of Napthol dyes should be done out-of-doors only. Therefore there is a great concern that dyers and printers should be aware of the adverse effects of azoic(Napthol) dyes as appropriate practice and attitude towards the precautionary measures is essential for safety and health of dyers and printers . Suitable personal protective equipment (PPE), including eye-protective equipment, should be provided to prevent contact with these hazards. So a study was conducted with the following objective:

To find out opinion on azoic dyes about the attitude and practices towards the precautionary measures and handling techniques among the dyers and printers.

Methodology:
The sample of the study comprised of 118 dyers and printers from Kutch region, selected by purposive sampling method. The samples belonged to New Anjar, Old Anjar, Ajarakpur, Damadka & Bhuj who are into regular dyeing and printing occupation of Kutch Region. A structured schedule was developed by the investigator to study the level of agreement of the dyers and printers regarding the attitude and practices towards the precautionary measures and the handling techniques while using azoic(Napthol) dyes. The tool was constructed in different sections with different response systems. The 5-point scale consisted of the items to measure the opinion on azoic dyes about the attitude and practices towards the precautionary measures and handling techniques among the dyers and printers. The statistical measure used for the analysis of the data was percentage method.

Findings:

Level of response	Score given
To very great extent	5
To great extent	4
To moderate extent	3

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To minimum extent 2
Not at all 1

Table showing the valid percentage of level of response on opinion on napthol dyes on attitude and practices towards the precautionary measures and the handling techniques.

Sr. No.	OPINIONS	AZOIC DYES (%)				
		1	2	3	4	5
1	USE OF HAND GLOVES	10.2	3.4	16.9	4.2	65.3
2	USE OF ONLY PROPERLY LABELLED DYE	-	9.3	7.6	43.2	39.8
3	SAFE DISPOSAL OF CONTAMINATED DYES	1.7	0.8	28.8	41.5	27.1
4	PROPER STORAGE OF DYES	-	-	11.9	9.3	78.8
5	USE OF RUBBER SHOES	40.7	9.3	14.4	3.4	32.2
6	USE OF MOUTH AND NOSE MASKS	82.2	9.3	1.7	0.8	5.9
7	USE OF EYE GLASSES	92.4	3.4	3.4	-	0.8
8	KNOWLEDGE TO HANDLE WHEN DYE SPILLS	16.9	5.9	22.0	27.1	28.0
9	KNOWLEDGE TO HANDLE CHEMICALS	4.2	7.6	17.8	29.7	40.7
10	USE OF APRON	69.5	11.0	12.7	-	6.8
11	USE OF FIRST AID	61.0	24.6	5.1	0.8	8.5

- 65.3% of dyers practiced the use of hand gloves to very great extent, 4.2% to great extent, 16.9% to moderate extent and 3.4% of dyers practiced the usage of hand gloves to minimum extent.
- 39.8% dyers practiced use of properly labelled dyes to maximum extent, 43.2% to great extent, 7.6% to moderate extent and 9.3% to minimum extent.
- 27.1% dyers practiced safe disposal of contaminated dyes to maximum extent, 41.5% to great extent, 28.8% to moderate extent, 0.8% to minimum extent.
- 78.8% dyers practiced proper storage of dyes to maximum extent, 9.3% to great extent and 11.9% to moderate extent.
- Use of rubber shoes as precautionary measure were practiced to maximum extent of 32.2%, to great extent of 3.4%, to moderate extent of 14.4% and to minimum extent of 9.3%.
- Mouth and nose mask as precautionary measure were practiced by 5.9% dyers at maximum extent, 0.8% to great extent,1.7% to moderate extent and 9.3% to minimum extent.
- 0.8% of dyers used eyeglasses as precautionary measure to maximum extent, 3.4% to moderate extent and 3.4% to minimum extent.
- 28% dyers had the knowledge to handle dyes on spilling to maximum extent, 27.1% to great extent, 22% to moderate extent and 5.9% to minimum extent.
- Dyers had the knowledge to handle chemicals to a very great extent of 40.7%, 29.7% to great extent, 17.8% to moderate extent and 7.6% to minimum extent.
- Attitude of dyers towards usage of apron were to maximum extent of 6.8%, moderate extent of 12.7% and minimum extent of 11.0%.
- The practice of use of first aid by dyers was to maximum extent of 8.5% , great extent of 0.8%, moderate extent of 5.1% and minimum extent of 24.6%
- Majority of the dyers and printers doing azoic(Napthol) dyeing had knowledge and practice in safe handling of dyes and chemicals.
- Only few dyers and printers doing azoic(Napthol) dyeing had an appropriate attitude and practice of wearing personal protective wear or personal protective equipment(PPE) like apron, eyeglasses, mouth and nose mask.
- Very few dyers and printers doing azoic(Napthol) dyeing had an appropriate attitude and practice towards use of first aid during accidental hazards.
- Almost half the number of the dyers and printers had an inappropriate attitude and practice of wearing rubber shoes while dyeing with azoic(Napthol) dyes.

Implication of the study:

- More appropriate safety regulations and/or guidelines to limit workers exposures to dyeing environment with special focus on handling of dyes and chemicals at worksite should be framed by occupation health authorities.
- Awareness about more safe practices, personal protective equipment (PPE) and personal protective wear should be brought to knowledge of dyers and printers.
- Sanitary facilities for washing, bathing and changing should be provided in dyeing units and the workers should be encouraged to use them as personal hygiene is particularly important for dye workers.

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