

Table 5: Effect of salt concentration on the color strength and the overall fastness properties of dyeing* cotton fabric using Solazol Red SP-3B.

Salt conc. g/l	K/S	Light fastness	Rubbing fastness		Washing fastness			Perspiration			
			dry	wet	St. on cotton	St. on wool	Alt.	Acidic		Alkaline	
								Alt	St.	Alt	St.
20	7.4	7	3-4	3	4	3	4	3-4	4	4	4
40	9.07	7	4	3-4	4	3	4	4-5	4-5	4-5	4-5
60	10.07	7	4-5	4	4-5	3-4	4-5	4-5	4-5	4-5	4-5
70	10.9	7	4-5	4	4-5	3-4	4-5	4-5	4-5	4-5	4-5

* Microwave power 150 W, treatment times 10 minute, 4% Shading, Na₂CO₃ 20 g/l

3.2.5. Effect of power of microwave used on the color strength

Figure 6 shows the effect of power of microwave used on the color strength of the dyed cotton fabrics upon using Solazol Red SP-3B. From Figure 6 we noticed that increase the power from 100 to 150 watt, this is lead to increase the K/S, after that the increase the power to 200 watt, this is lead to slightly increase in the K/S, this is may be due to increase the power of microwave used more than 150 watt, this is means that increase in the temperature i.e. increase the hydrolysis of the reactive dye i.e. slightly increase in the K/S. So we recommended that the power used in case of dyeing cotton fabric using padding method not exceed 150 watt.

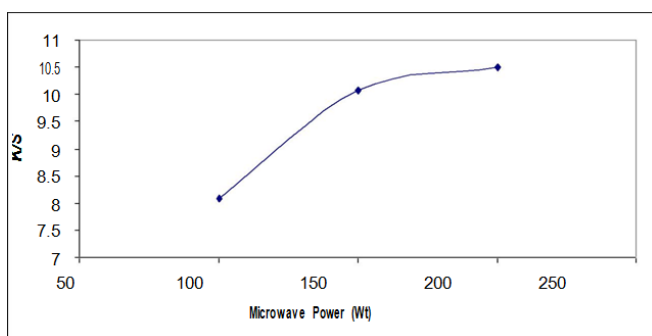


Figure 6: Effect of microwave power on the color strength of dyed cotton* fabrics using Solazol Red SP-3B.

* Treatment time 10 minute, 4% Shading, NaCl 60 g/l, Na₂CO₃ 20 g/l

From Table 6 we show that the overall fastness properties to rubbing, washing, light and perspiration for the dyed samples and their values ranging from very good to excellent.

Table6: Effect of microwave power on the color strength and the overall fastness properties of dyeing* cotton fabric using Solazol Red SP-3B

Power (Watt)	K/S	Light fastness	Rubbing fastness		Washing fastness			Perspiration			
			dry	wet	St. on cotton	St. on wool	Alt	Acidic		Alkaline	
								Alt	St.	Alt	St.
100	8.1	7	3-4	3	3-4	3	3-4	4	4	3-4	4
150	10.07	7	4-5	4	4-5	3-4	4-5	4-5	4-5	4-5	4-5
200	10.5	7	4-5	4	4-5	3-4	4-5	4-5	4-5	4-5	4-5

* Treatment time 10 minute, 4% Shading, NaCl 60 g/l, Na₂CO₃ 20 g/l

4. Conclusion

The power used in case of dyeing cotton fabric using padding method not exceed 150 watt. The salt concentration not increases than 70 g/l, and the alkali concentration not increases than 25 g/l. up on using 4% dye conc. Upon using microwave irradiation technique give higher in K/S about 14%. And also increase the time of fixation using microwave up to 10 min. give higher in K/S about 70% compared with dyed cotton fabrics, using cold pad –batch dyeing method, then dry at room temperature and fixation at 160 °C for 5 min.

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