**RESEARCH HIGHLIGHTS**

* The study introduced semi-synthetic embelin ninhydrin as a dye for the first time and its application as a dye to cotton fiber for the first time.
* The study investigated use of different mordants with embelin ninhydrin dye which gave different shades with cotton fabric and had good fastness properties (4-5) on the Grey scale for the first time
* The study came up with an optimized model of dyeing cotton fabrics with embelin ninhydrin dye at optimum values of pH 9, temperature of 80 and time of 60 mins for the first time.