

# 2012-13

## WINNER

Raj nibhai V. Patel

**PharmInnova  
Award**

Best M. Pharm Thesis

**Winner**



**Ms. Pradnya Y. Chaudhari**

**Research Guide**



**Dr. Chhaya H. Gadgoli**

**Subject:**

Pharmacognosy

**Thesis Title :**

Studies on Naphthaquinone Derivatives as  
Phytopharmaceuticals

**College:**

Saraswathi Vidyabhavan's College of Pharmacy, Dombivli, MH

### **Successful synthesis of natural colours as safer option in drug formulation**

#### **Outcome of Research:**

Colour pigments are essential for pharmaceutical industries for identification and imparting aesthetic value to various drug formulations. Natural lakes (insoluble colouring agent for pharmaceuticals) were prepared using standardised red colour pigments, obtained from the root bark of *O.echiodes* (Boraginaceae). This natural colour was found to be stable and can be used in both aqueous and non-aqueous vehicles. The dye can also be converted to various shades ranging from red-pink-violet-blue. Use of this natural colour in tablet-coating would be a potential field of application, as well as, increase the safety and acceptability of the formulation.

## **ABSTRACT**

The red colour dye was extracted from the authenticated root bark of *Onosma echioides* using petroleum ether (60-80°C) as solvent. A naphthoquinone dimer (C<sub>40</sub>H<sub>45</sub>O<sub>10</sub>) was isolated from the extract by column chromatography method using silica gel and Toluene Formic acid (99:1) as mobile phase. The component was utilized as marker component to standardized the extract and the content of naphthoquinone dimer was found to be 24.45% w/w. This dye was then quantitatively treated with abhrakh bhasma and shankh bhasma to get lakes of the dye and different shades of colour from red to blue.

The lakes thus obtained were formulated into the film coating formulation and films prepared thereof were evaluated for their stability at 25-30°C for one month. The films were found to be stable as colour difference value was found to be within the limits that below 3 units.

Representative tablets of acidic, basic, neutral category were coated with film coating solution containing the lakes and interaction of the dye with the drugs was evaluated through the dissolution study.

The study indicated that the problem of inconsistency, batch to batch variation and stability of natural colour.