

## Eco-Friendly Gulal: A Sustainable Approach towards Healthier Environment

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### SUMMARY

Eco-friendly gulal offers a sustainable and health-friendly alternative to the synthetic colors used during Holi and other festival celebrations. By using natural ingredients, biodegradable substances, and sustainable manufacturing processes, eco-friendly gulal reduces the environmental impact associated with conventional gulal. Additionally, it minimizes health risks and promotes the preservation of cultural traditions. Embracing eco-friendly gulal allows us to enjoy the vibrancy and joy of Holi while being responsible stewards of the environment and our well-being.

### INTRODUCTION

Gulal or traditionally called abeer kept an important place in Indian culture. In festivals like holi, deepawali etc gulal are being used on a large scale for different purposes. Holi that is called the the festival of colors, is widely celebrated in India and other parts of the world and hence gulal are widely used by people in this festival. And the sale of 'holi' powder, continues to grow every year with 10-15 per cent annual growth (Rawat, 2008). But the gulal that is available in market are consisting of heavy metals, sand and soil that causes harmful impact on human health and environment. Even after knowing the harmful impact that this synthetic gulal cause, people are buying these product due to its cheaper rate, cheaper raw materials, popular demand, easily availability and easy method of preparation. Also the bright colour of this gulal attract more people. But now the time has arrived when people are more conscience about their health and skin. People are ready to pay more for a product if it gives guarantee that it will not cause harmful impact to their health. And due to this reason there has been a growing demand for eco-friendly gulal, which offers a sustainable alternative.

A few work on safe 'holi powder' production on commercial scale has been reported. National Botanical Research Institute (NBRI), Lucknow, India has already developed herbal 'gulal' and has transferred its technology for commercial production ([www.nbri.res.in](http://www.nbri.res.in)). However, there still need more research so that herbal gulal can be made with the locally and seasonnaly available fruit and vegetables substrate. This article will explores the concept of eco-friendly gulal, its benefits, procedure for manufacturing, and its role in promoting a more environmentally conscious and health-friendly Gulal.

### Environmental Impact of Synthetic Color:

The synthetic dye-based 'holi' powder can cause dermatitis, respiratory problems and allergies. Prolonged application can even cause cancer. Those synthetic 'holi' powder which are based on sand and soil are mostly harmful for skin. Majority of coloring agents used in 'holi' are synthetic dyes of non-food commodities such as textile, paper and leather. Most of the synthetic dye-based 'holi' powder contain heavy metals. Scientific tests have verified that these can cause skin abrasions, skin and eye irritation, allergy and can even trigger asthma (Rawat, 2008, Sharma and Saxena, 2013 and Sharma, 2013). These colors have also adverse effects on the environment when they contaminate water bodies, soil, and vegetation. The release of toxic substances during the manufacturing, use, and disposal of synthetic colors poses a threat to ecosystems and biodiversity. Additionally, the production of synthetic colors involves petroleum-derived chemicals, contributing to carbon emissions and pollution. The need for eco-friendly alternatives becomes imperative to minimize environmental damage due to synthetic color.

### Characteristics of Eco-Friendly Gulal :

Eco-friendly gulal is made from natural and sustainable ingredients. These include plant-based dyes, organic materials, and biodegradable substances. Herbal ingredients like turmeric, henna, indigo, and beetroot powder are commonly used to create vibrant hues. These natural sources not only provide colors but also offer various benefits for the skin, such as moisturizing and antibacterial properties. Furthermore, eco-friendly gulal is often free from chemicals, heavy metals, and synthetic additives, reducing the risk of skin allergies and irritation.

## Advantages of Eco-Friendly Gulal :

### a. Environmental Benefits:

Eco-friendly gulal is biodegradable, meaning it can easily decompose without leaving harmful residues in the environment. It minimizes water pollution as it does not contain toxic substances that can contaminate rivers, lakes, or groundwater. The use of natural ingredients and sustainable manufacturing processes in eco-friendly gulal reduces carbon emissions, waste generation, and overall environmental impact. Moreover, the cultivation and sourcing of plant-based dyes promote sustainable agricultural practices and support local communities.

### b. Health Benefits:

Conventional gulal colors often contain chemicals that can cause skin allergies, rashes, and respiratory problems. In contrast, eco-friendly gulal made from herbal ingredients is considered safe for the skin and reduces the risk of adverse health effects. The use of natural ingredients like turmeric and henna can even have therapeutic properties, providing benefits for the skin and promoting a healthier celebration of Holi.

### c. Cultural Preservation:

Eco-friendly gulal not only promotes environmental and health consciousness but also preserves cultural traditions. The use of natural colors aligns with the historical practices of Holi, where plant-based pigments were traditionally used. By adopting eco-friendly gulal, individuals and communities can celebrate Holi in a more authentic and culturally respectful manner.

## Procedure for making Herbal Gulal:

Herbal Gulal is made by mixing the arrowroot powder with the easily and naturally available plant based juice and different colours are made. The procedure for making different colours are:

**Yellow colour:** For making yellow colour we use the raw turmeric and arrowroot powder in the ratio of 2:1 ie., 2 kg raw turmeric and 1 kg arrowroot powder. For this we first peel off all the turmeric and wash it properly so there is no dust. Then we grate the turmeric or can grind it in the grinder. Then we strain the juice with the help of a muslin cloth. After this we take the arrowroot powder in a utensil and then pour the juice gently into this. We should take care that we have not to put all the juice once but we have to pour it in small amount into the powder. After this we can mix the powder and juice with hand properly. After all the juice and arrowroot powder are mixed well we have to dry this powder in shade for 24 hr. Then we can grind the powder once and strain the powder with strainer and pack the in pouches of 100gm , 200gm etc according to our wish.



Peeling and Grating of Turmeric



Mixing and Drying the powder

**Pink colour:** For making pink colour we use the raw beetroot and arrowroot powder in the ratio of 2:1 ie., 2 kg raw turmeric and 1 kg arrowroot powder. For this we first peel off all the beetroot and wash it properly so there is no dust. Then we grate the beetroot or can grind it in the grinder. Then we strain the juice with the help of a muslin cloth. After this we take the arrowroot powder in a utensil and then pour the juice gently into this. We should take care that we have not to put all the juice once but we have to pour it in small amount into the powder. After this we can mix the powder and juice with hand properly. After all the juice and arrowroot powder are mixed well we have to dry this powder in shade for 24 hr. then we can grind the powder once and strain the powder with strainer and pack the in pouches of 100gm , 200gm etc according to our wish.



Peeling off and Grating  
Beetroot



Mixing juice with base  
powder



Drying of herbal powder

**Green colour:** For making green colour we use the raw coriander leaves or spinach leaves and arrowroot powder in the ratio of 1:1 ie., 1 kg raw coriander leaves or spinach leaves and 1 kg arrowroot powder. For this we first wash raw coriander leaves or spinach leaves properly so there is no dust. Then we can grind it in the grinder without mixing water. Then we strain the juice with the help of a muslin cloth. After this we take the arrowroot powder in a utensil and then pour the juice gently into this. We should take care that we have not to put all the juice once but we have to pour it in small amount into the powder. After this we can mix the powder and juice with hand properly. After all the juice and arrowroot powder are mixed well we have to dry this powder in shade for 24 hr. then we can grind the powder once and strain the powder with strainer and pack the in pouches of 100gm , 200gm etc according to our wish.



Mixing of juice with base powder



Packaging of gulal



Packaging of Herbal Gulal

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