

# How Research and Legacy leads to most Potent processing of Lawsonia less Henna & Cassia blends to Quick Henna™ as formular?

Presented by  
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Research paper presentation by creator and application expert leading to registration of patent. Developmental work on science and art of creation of safest hair care and hair colour accelerator. Potent pellucid compound, secret formulation using organically grown medicinal plants for best hair care for every hair types. Quick Henna™ absolute and med potent is currently manufactured under direct confidential supervision by company co-founded by scion of Henna family, famously known as Mehndi-Wale, a Henna as herb authority- Sojat Henna Man.

## GI Henna, Lawsonia and Sennosides Rich: A Generational Affair



Sojat & Faridabad has been a significant part of our story, being a leaf, where pluck and pick care is paramount for both quality and quantity. Traditional processor families from Faridabad have been involved in the cultivation, processing, and application promotion of the Lawsonia Inermis plant.

This traditional effort has been kept alive, for Five generations lead, Gupta-Goyal Family of our Co-Founder Mr. Vipin Goyal. Our mission of offering best was echoed by Mr. Vipin, who aimed to merge traditional plant attributes with modern scientific insights.

In 2016, next level exploration and innovation was initiated by him, where the secrets of Lawsonia Inermis, Cassia Angustifolia (Senna) and Cassia Obovata (Colourless Henna) were researched. His parental guidance and his zeal to contribute to his legacy kept him feeding it more.

Since Dec 2019, it was co boarding by Dr. Indu Taneja and Pure Naturals with French pharmacology and Art of Enflourage, efforts moved in prophylactics as health curatives too. Acquired and Learnt from our past collaborators.

Aug. '2023, Approval and issuance by Ayurveda Authorities of India has helped us going more deeper to achieve the best of derivatives and final compound in Powder and Absolute liquid form for creation of Safest Hair Care range under direct supervision and charge of Mr. Vipin Goyal, Co-Founder and Executive Director at Pure Natural Products Private

Limited.



## The Research Phase

Vipin and our dedicated team embarked on field and lab research, meticulously studying the properties of Lawsonia Inermis and related plants like Cassia Obovata and Cassia Angustifolia. Their focus was on understanding the plant's API and Photosynthesis attributes. The goal here was not only to understand these attributes but also to harness their inherent potency and create a product that would address a variety of hair-related concerns, both cosmetic and therapeutic. It's very important to highlight notion vs research leading to under patent to best in hair Care and hair Colour.

## Master Herbs for Quick Henna

Nature, as minerals and plants has been a rich source of therapeutic agents for thousands of years and an impressive number of modern drugs have been isolated from natural sources based on the uses of these plants in traditional medicine. Our efforts for development of proprietary formulae have been restricted to Henna, Senna Cousins, Indigo, Rosemary, Neem, Ashwagandha, Moringa, Bhringraj and Manjishtha. Heritage herbs and our legacy understandings: Henna (Lawsonia inermis), Senna (Cassia angustifolia), Avaram Senna (Cassia auriculata) and Colourless Henna (Cassia obovata).

## Quick Henna™ Active Compound: The Result of a Journey

The result of this intense research and passion for plant science led to the creation of Quick Henna™, a proprietary blend that is deeply rooted in Ayurveda and Medicinal Plant Science. Our blends based on legacy knowledge and use cases mapped specific studies of liposomes on oxidative stress leading to excessive greying in current AI times.

As is known to modern scientific researchers it's reactive oxygen species or free radicals, which are highly reactive molecules that directly damage cellular structural membranes, lipids, proteins, and DNA. Reactive oxygen species are generated by a multitude of endogenous and environmental

challenges. Human body possesses endogenous defence mechanisms, such as antioxidative enzymes and non-enzymatic antioxidative molecules, protecting it from free radicals by reducing and neutralizing them. With age, the production of free radicals increases, while the endogenous defence mechanisms decrease. This imbalance leads to the progressive damage of cellular structures, resulting in the ageing phenotype. Ageing of hair manifests as decrease of melanocyte function or greying and decrease in hair production or alopecia. In Ayurveda text, its well-known oxidative stress is pivotal mechanism contributing to hair greying and hair loss.

We developed a hair-follicle-selective macromolecule and small molecule targeting Quick Henna™ compound with topical application of phosphatidylcholine-based liposomes created by cassia plant enzymes. Liposome biosimilars created by our process -targets molecules to hair follicles, which can be double verified on human scalp in histoculture. Topical bio-similar delivery to hair follicles has best ability to provide faster safer colour hair with melanin. The delivery of the active Quick Henna™ blends to hair matrix cells and delivers proteins too.

Quick Henna™ has higher potential of providing large and small molecules, a selective hair follicle targeting. This molecular therapy with Quick Henna™ processed colourants and activators accelerates process to restore hair growth, physiologically restore and help in altering hair pigment, and to prevent hair loss.

The remarkable achievement of Quick Henna™ lies in two unique formulations, the first of its kind under Ayurveda, which have been under patent registration with Indian IPR authorities.

**Quick Henna™ Organic Gel™ Absolute Extract**

## Soil to Scalp Miracle



The first formulation is the Quick Henna Absolute Extract, a fluid derived from a lab-

controlled process. This fluid, blended into Organic Aloe Vera, serves as a functional food suitable for both oral and topical formulations.

Quick Henna™ Organic Gel™ Absolute Extract ensures rich colour rendition post-colouring, making it an ideal choice for home or professional hair colourists. It also enhances scalp health and safety, providing APIs and lipids useful for hair fall, growth, quality, and colour maintenance.

**Process of Henna and Multi Cassia liquid extract blend as Absolute Extract in Organic Aloe vera Gel- Patent Filed**



Step-

1- Liquid/Pellucid Extraction for APIs/ Potent of dried Colourless Henna/ Cassia obovata leaves with flowers containing Quinones with the help of extra heated steam distillation process using water as a menstruum solvent of extraction during Soxhlet extraction method and technique.

Step-2- Following the maceration process, Soaking Henna/ Lawsonia Inermis in Step-1, extracted Colourless Henna Extract Solution (i.e., Liquid/Pellucid Extraction for APIs/ Potent of Colourless Henna/ Cassia Obovata for three days. The micelle is then separated from menstruum with the help of water bath treatment. At the end of extraction, the micelle is separated from marc through filtration method.

Step-3- Liquid/Pellucid Extraction for APIs/ Potent separately and distinctly of Senna/ Cassia angustifolia leaves with stem, Aloe vera, Ashwagandha roots and Rosemaryleaves including stem with the help of extra heated steam distillation process using water as a menstruum solvent of extraction during Soxhlet extraction method and technique.

Step-4- Blending the extracted herbs solutions by following the sequential method of blending. Adding the senna liquid extract with Cassia Henna extract,

blending both the liquid extract solutions with the help of stirrer homogenizer.

Step-5- Further adding the Ashwagandha liquid extract and blend the extract solution with the help of stirrer homogenizer.

Step-6- Next adding the Aloe vera liquid extract and blending the extract solution with the help of stirrer homogenizer.

Step-7- Finally, adding Rosemary liquid extract and blending for final actives rich extract solution with the help of stirrer homogenizer, named absolute extract in aloe vera pellucid compound.

#### **Quick Henna™ Med Potent Powder Mix**

The second formulation is Quick Henna Med Potent, where powder meets potency. This special blend features Indian Cassia as a dominant ingredient alongside Senna, creating a powerful mixture infused with multiple oxidative and medicinal herbs.

Quick Henna™ Med Potent Mix acts as a natural adjuster and illuminizer for natural hair, amplifying colouring properties, and offering nourishment and care for hair locks.

#### **Process of Henna, Multi Cassia, and Medicinal herbs Potent Powder Mix- Patent Filed**

Step-1- Soaking Henna in Cassia Henna Extract Solution by following the maceration method and extraction process with the help of heat water bath treatment and filtration method.

Step-2- Collecting the marc of herbs left behind after the extraction process, further oven dried in Hot Air Oven separately and grinded with the help of dry slow grinding process.

Step-3- Collecting the marc of herbs separately namely Senna, Aloe vera, Ashwagandha and Rosemary during the extraction process, then dried in Hot Air Oven separately and grinded with the help of dry normal grinding process.

Step-4- Blending the collected herb extract powders by following the sequential method of blending. Adding the senna powder extract with Cassia Henna extract, blending both the extract with the help of cone blender.

-Next adding the Ashwagandha powder extract and blend the extract.

-Adding the Aloe vera powder extract and blend the extract.

-Next adding Rosemary powder extract and blend the extract.

-Next adding dry grinding processed Neem powder and blend the extract.

-Then adding dry grinding processed hibiscus powder extract and blend the extract.

-Adding dry grinding processed moringa powder extract and blend the extract.

-Then adding dry processed manjistha powder extract and blend by mixer.

-Finally adding dry grinding processed Gokshura powder extract and blend the entire powder in cone blender in slow movement to maintain inform heat generated.

Step-5- Slow mixing the above as final ingredient- homogenized potent powder mix.

#### **The AYUSH Approval**

All Quick Henna™ proprietary blends are AYUSH approved, ensuring quality and authenticity. These aqueous and powder organic compounds are crafted using specific ingredient ratios, under patent approvals, with the latest extraction methods. This process captures the essence of every ingredient while eliminating unwanted substances, ensuring purity and effectiveness.

#### **The Magical Blend**

What makes Quick Henna™ truly unique is its easy-to-blend water soluble compound, allowing for the final Hair Care & Colour products to be manufactured simply by mixing with readily available natural additives. This approach respects each region's medicinal herb produce and complies with local FDA regulations.

Our aim is to bring the safest hair care and hair colouring products to users worldwide, especially those suffering from allergies to harsh chemicals like PPD, Ammonia, and Peroxide. Over 30% of the global population with greying hair is affected by these chemicals, and we aim to provide a pure natural alternative through Quick Henna.

#### **Exploring the Rich Heritage of Sojat & GI Henna: The Birthplace of Quick Henna™**



Earliest use of henna and its dye applications can be traced back to ancient Babylon and Egypt as mentioned in religious commentaries dating to Talmud. In India It was in prevalent use by the 4th century, which is evidenced in Hindu Scriptures written during that time and by the cave arts of Deccan region. Its find was shown as colouring laxative plant from Sub Sahara and South Asian deserts.

Sojat, a Village hamlet, now a bustling small town, part of Marwar region (erstwhile Jodhpur empire), located at start of the Thar desert, is situated on the left bank of the Sukri River, in Pali district, Rajasthan State of

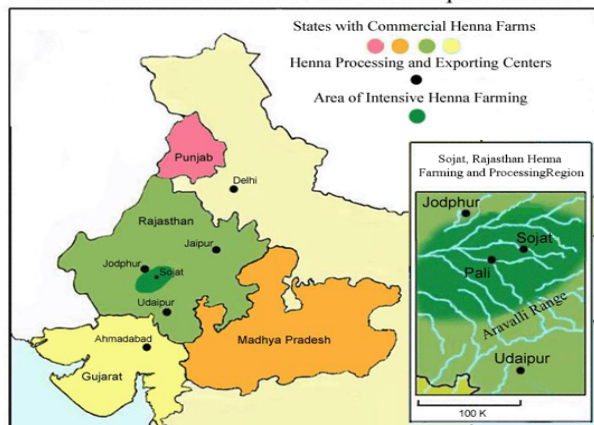


India. Ayurveda reference textbooks refer it as TamravatiNagri for colouring plants is blessed as an epicentre of tradition and innovation in Henna and Cumin.

Its geo location provides for best heat and rainwater to provide the best varieties of the **Lawsonia Inermis** plant, popularly known as Henna or Hina or Mehandi (famously know in Indian Languages). Mehndi grown at Sojat, is cultivated 100% naturally by rainwater, which naturally enhances the percentage of Colouring pigment "Lawsone". Sojat is the only region in India where more than 90% of Henna is grown and now exported worldwide.



### Commercial Henna Cultivation and Export in India



The soil properties of Sojat region further adds to the Quality, Purity & Natural Dyeing ability of its Henna/ Mehndi. Bureau of Indian Standards (BIS), Product Quality standards issued by Government of India for ordinary mehndi, lawsone content should be 1.0. Whereas Sojat Mehndi's lawsone content is far better than the BIS minimum standards as it is more than 2.5. The high lawsone content has made it special and unique, in comparison to other varieties.

Varieties currently cultivated with bio modifications and improvements by us have consistently yielded,

- Longer Colour Retention.
- Excellent Natural Hair Conditioner.
- An extraordinary Cooling Agent.
- Distinct aroma & long natural Shelf Life.
- Natural Deep Rich Reddish Colour.
- Process worthy in dry and fresh conditions.

Continuous efforts of Farmers and Processors (Sojat Mehndi Kishan Samiti, Mehndi Vyapar Sangh Samiti & more), community efforts have helped Sojat Henna with the Geographical Indication (GI) Tag\* Status No. 372 filed under application number 628 by Government of India in 2021.

\*GI tag is a form of intellectual property, a certification given to certain goods or products which are unique to a geographical region. It is an integral part of the development which advances economic interests. These tags are a tool to protect the ownership rights on natural resources and manufactured goods. Products having GI tags prevent unauthorised use, provision of original species and in turn provide financial gain for farmer, producers through traditional sales to global markets.

### Henna, *Lawsonia Inermis*

It has been used since ancient Egyptian period as a hair and body dye as beauty articles used by Queens and her consorts. Persian Henna or *Lawsonia Inermis*, a bushy, flowering tree, commonly found in Australia, Asia and along the Mediterranean coasts of Africa.

Most revered plant, as per Ethnopharmacological relevance, paste made from the leaves of Henna plant has been used since the Bronze Age to dye skin, hairs, and fingernails especially at the times of festivals. In recent times henna paste has been used for body art paintings and designs in western countries. Henna, Hina, Mehndi, Marudaani, Egyptian Privet, Inai, Hinai, notionally is known as a black dye prepared from the dried and powdered leaves of the henna tree. It is traditionally used in Islamic and Hindu cultures as a hair colouring and as a dye for decorating the nails or making temporary skin tattoos. Western world finds it more as the temporary body art of mehndi or "henna tattoo" resulting from the staining of the skin using dyes from the henna plant.

Despite such widespread use in dyeing and body art painting, Henna extracts and constituents possess numerous biological activities including antioxidant, anti-inflammatory, antibacterial and anticancer bioactivities. An important plant with significant in vitro and in vivo biological activities.

Active colouring and biologically active principle compound of Henna is Lawsone (2-hydroxy-1,4-naphthoquinone) which has served as a starting building block for synthesizing large number of therapeutically useful compounds including Atovaquone, Lapachol and Di-Chloroalkyl. Some of lawsones have shown to possess potent anticancer activities and is still largely unexplored.

Natural chemical constituents of *Lawsonia Inermis*; contains whole lot of complex and simple derivable phenolic, flavonoids, saponins, proteins, tri-terpenoids, polyphenols, quinones, tannins, resins, alkaloids, and others with exclusive ability of 2-hydroxy-1,4-naphthoquinone, i.e., lawsone. Our first work has been only and namely on taking amber colouring off structure and now majorly on extractions\* leading to derivatives using its saponins+ quinones+ tannins with alkaloids via SAR (Structure Activity Relationships) to try maximizing activity and minimize toxicity.

\*Extraction procedures used and under trial by our team on continual improvement basis include infusion, percolation, Soxhlet

extraction, superficial extraction, maceration, digestion, decoction, ultrasound-assisted, and microwave-assisted extractions.

We have examined use base and researched the chemistry and biological activities of Lawsone along with its analogues and metal complexes. Mainly ability of Lawsone to undergo the redox cycling and chelation of trace metal ions are partially responsible for most of its biological activities. The responsible pigment of Henna, amber, red colour is the 1,4-naphthoquinone Lawsone, constituting 1–2% of the leaves, which is achieved after application on Skin.

More than 70 phenolic compounds have been isolated from various parts of the plants under phytochemistry actions. It is naphthoquinones, which include the dyeing principle lawsone, have been linked to the pharmacological activities. The terpene,  $\beta$ -ionone is largely responsible for the pungent odour of the essential oil isolated from the flowers. In addition to other volatile terpenes, some non-volatile terpenoids, a single sterol, two alkaloids and two dioxin derivatives have also been isolated from the plant.

Our strength so far has been using alkaloids to meet with ph.7.0 to 8.0 as in Hair Colour needs than pure henna ph. Of 5.5 which creates cuticle shield needing high curing time of natural lawsone. Immense help of our Henna cousins of Cassia family offering biosimilar as polyphenols rich muddled in quinones as straight plant derivatives\*\*. The optimum pH level thus derived helps to reduce cuticle damage and hair fiber breakage.

\*\*Plant-derived compounds refer to ingredients that originate from plants or flowers botany. As in pharmaceutical domain, plant-derived chemicals, extracts, and their derivatives are bioactive compounds with medicinal activity. After a lead compound is identified, further closely related compounds are searched with Structure-Activity Relationship (SAR). Consequently, derivatives are developed without toxicity by retaining its regular activity.

It is these analogues of Lawsone rich in other beneficial biological properties such as antioxidant, anti-inflammatory, antitubercular and antimalarial, we have employed in our patents. Few incidents of adverse reactions following application to the skin have been reported, but these are mainly confined to cases involving individuals with glucose-6-phosphate dehydrogenase deficiency and reactions to adulterants added to henna products.

Henna as a medicinal plant other than hair dye use is illegal in the USA. It is not approved for direct application to the skin, as in the body-decorating process known as hand or body mehndi. It is the unapproved use of colour additive classified as unadulterated lead our research on why by USDA. We are still researching on roles of specific compounds and their synergies via comprehensively investigations and use cases. Our potent henna extracts formulated have been recently deployed regularly to function as antimicrobials for skin, hair care, hair colour, and other environmental biotechnological uses across the world.

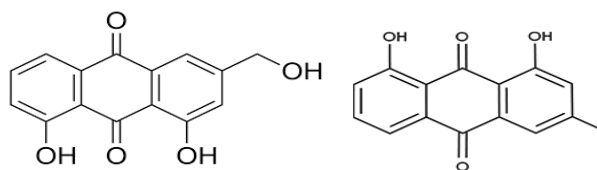
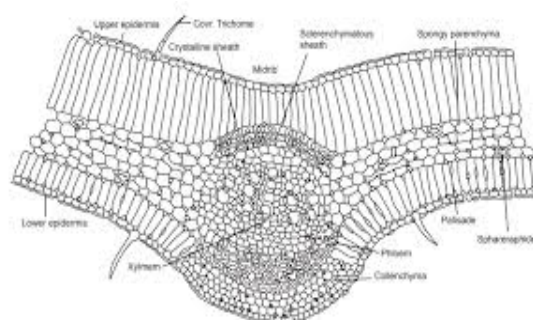
### Cassia Cousins

Integral part of our family journey and our founders to reap best out of cassia family of forgotten ancient medicinal plant referred in ayurvedic texts, which helped us developing patented Quick Henna™ Organic Gel Absolute & Quick Henna™ Med Potent Powder Mix.

### Cassia angustifolia: Senna



Ayurveda refers Senna as magical plant which helps to eliminate vitiated & putrefied Pitta through motion and gives relief in fever caused by excessive Pitta. Senna contains compounds which work as natural laxative by smoothing & relaxing the tissues of gastro-intestinal tract, as digested food moves through the intestines. Senna contains anthraquinones, including dianthrone glycosides (1.5% to 3%), sennosides A and B (rhein dianthrone), and sennosides C and D (rhein aloe-emodin heterodianthrone).



Senna remarkably also contains free anthraquinones including rhein, aloe-emodin, chrysophanol, and their glycosides. Senna pods contain the same rhein dianthrone glycosides as the leaves. Also, carbohydrates in the plant include 2% polysaccharides and approximately 10% mucilage, consisting of galactose, arabinose, rhamnose, and galacturonic acid. Other carbohydrates include mannose, fructose, glucose, pinitol, and sucrose. Senna's flavonols include isorhamnetin and kaempferol. Glycosides 6-hydroxymusizin and tinnevellin are also present.

Other constituents in senna specially for our use chrysophanic acid, salicylic acid, saponin, resin, mannitol, sodium potassium tartrate, and trace amounts of volatile oil. Specifically, cassia angustifolia, senna gives golden yellow highlight to grey a pale blonde tint, which is mainly due to sennosides



interacting with acidic properties as gastro controller referred in classic Ayurveda. Senna leaves and fruit are edible, but they are not regularly recommended by modern medicine as they could interact with diuretics, blood thinners, other heart, and diabetes care medications.

The presence of chrysophanic acid, also found in rhubarb root helps in providing protective layer on hair cuticles. Senna never colours dark hair blonde or pale yellow but makes bleached, damaged, and chaffed hair silky and restores with golden hue on dull greying hair. Senna when mixed with normal henna reduces the red vibrancy due to its lawsones, where our knowledge led to patents.

### Cassia auriculata: avaram Senna



Avaram, an ancient herb, with tiny yellow flowers native to the Asian and African subcontinents. Cassia auriculata is from the same family but has different properties than other cassia angustifolia though closer to lawsone henna. This Cassia does not stain your hair like henna. It also does not reduce shrinkage adds acidic or significantly colour grey. Many users confuse Cassia Auriculata with Cinnamomum Cassia (Cinnamon), though they are in the same family of plants, they are not the same and non-substitutes.

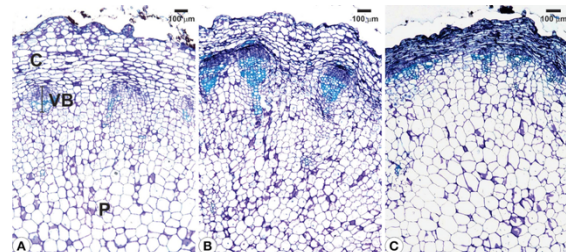
Sooner avaram plant reaches maturity and flowers, it is dried and powdered, turning into a lighter green powder than Henna. Leaves contain yellow resin pigment, which help with beautiful gold light, on most hair colours it just adds a glimmering shimmer, rather than outright colour. This cassia feels more like talc and is very fine, our users found it not only gives regular cassia benefits but improves itchy sore scalps, hair look better, brighter, shinier, and more manageable.

Avaram Senna flowers have anti-inflammatory and antibacterial properties thus they promote hair growth and protect the scalp and hair from various infections. Its compounds are naturally anti-fungal and antiseptic and quality is as good as Henna. In addition, the oil or gel mixed with the extract of senna auriculata flowers significantly reduces scalp heat and cools it. It's antiseptic so ideal for scalp allergies and dandruff which are often caused by an overgrowth of yeast on the scalp, fed by the natural oils in the scalp. Avaram helps reduce this overgrowth and reduce flaking and dryness.

### Cassia obovata: Colourless Henna



Neutral Henna, Conditioning Cassia, Colourless Henna, Cassia obovata, Senna italica or senna obovata contains a faint golden dye and is commonly referred to as "neutral henna" because it has similar benefits of henna but does not give the hair the amber colour that results with the use of henna. Oboids rich, its ability to moisturize the hair makes it natural conditioner. Same as other Cassia, it is anti-fungal and anti-bacterial and highly effective against microbes and fungi. It plays a very strong role in fighting against dandruff, eczema and psoriasis. Traditional use of Cassia obovata was also a laxative like Senna, Cassia angustifolia. The principal active components are same sennosides A and B. In Ayurveda texts, the blend of henna (Lawsonia inermis) and Colourless Henna (Cassia obovata) is called 'the two Hennas'. Dermatological uses of this cassia concern the lawsone henna components. Thin layer chromatographs show components are fixed to natural keratin turning golden light-brown or brown differing with over time of application, indicative of a diffusion process. In bleached hair diffusion is faster, absorption by hair pre-treated by hydrogen peroxide was greater than virgin grey hair, suggesting that the oboids of this cassia were chemically bound to the cysteine function of keratin.



It is biphasic as several components diffused. Henna (Lawsonia inermis) combined enhances the penetration of obovata components. Hair treated by Cassia obovata get less hydrophilic, strength of the treated hair is not changed, but the cuticle scales get opened to receive colourant. Its treatment crimps the hair, acts as a sunscreen, which is bound to keratin, and provides ultraviolet protection. Cassia obovata works with the hair's natural structure to smooth follicles without damage, making them light reflective and able to shine more. It is a natural conditioner, even when hair is very dry, highly processed or permed, it softens coarseness, smooth frizz and reduce hair breaking. As it doesn't have components like natural silicon, it washes out of the hair completely.

### The Innovators

The innovation of Quick Henna™ is a result of the relentless efforts of Mr. Vipin Goyal, a 5th Gen. Family Henna Processor, Farmer, and Formulator, and Dr. Indu Taneja, a leading Gynecologist and Menopause Expert.

“Our mission is to blend traditional plant attributes with modern scientific insights to create a product that addresses a range of hair-related concerns, from cosmetic to therapeutic.” - Mr. Vipin Goyal.

In conclusion, the journey of Quick Henna from the rich heritage of Sojat Village to the world is a testament to the power of innovation, tradition, and the potential of Lawsonia Inermis, Senna Cassia Cousins and Indigo our blue dye plant.

**Disclaimer:**

This article is for informational purpose only. Quick Henna™ Organic Gel™ Absolute Extract & Quick Henna™ Med Potent Powder Mix is not a treatment for any disease or condition. Regarding side effects of herbal or plant extracts, these are generally safe when used on the skin or hair, but to ensure safety, it is best to do an allergy test or sensitivity test. Few cases, not exceeding 2~3% of users till now as mild erythema and papules as well as positive chronotropic effects are reported. Best is to consult your doctor before using it if for specific medical purposes. All our herbs used are rarely allergenic, we recommend always, do a patch test to ensure it's not going to react. Apply a small amount mixed with your chosen liquid to either the wrist or a patch behind the ears. If there is any redness or irritation, do not use it. If you live in "hard water" area (water with an enormous amount of minerals), hair may turn green due to mineral buildup it's recommended by our founders to do a strand test and always deep clean before using our formulations for best results.