

Technology Portfolio

HEALTHCARE SEGMENT

URO 05: ANTI-UROLITHIASIS HERBAL FORMULATION

- A synergistic herbal composition for the management of urolithiasis, nephrolithiasis and post lithotripsy conditions.
- 70% reduction in number of stones and 80% decrease in levels of stone crystals in renal cortex (rat model).
- Reduced dosage as compared to the existing remedies in the market and cost effective.
- Clinical Trial done at King George's Medical University, Lucknow
- Safety and toxicity parameters conformed as per OECD guidelines.
- IPR status: Indian Application No. 201811044361.



NBRMAP-DB: ANTI-DIABETIC HERBAL FORMULATION

- Polyherbal anti-diabetic composition jointly developed by CSIR-NBRI & CSIR-CIMAP, Lucknow.
- Hypoglycemic in nature confirmed through Glucose tolerance test.
- Scientifically validated by *in vitro* and *in vivo* streptozotocin-induced diabetes in rat model. Significant DPP-4 inhibitor activity.
- Clinical trial done at Banaras Hindu University, Varanasi.
- Safety and toxicity parameters conformed as per OECD guidelines.
- IPR Status: Patent no. 354536.



TOPICAL HERBAL ANTI CANDIDA GEL

- Herbal topical cream for effective treatment for *Candida albicans* in genital organs and eradicates *C. albicans* at 20 ppm.
- Anti-inflammatory in nature.
- No adverse effect on vaginal microbiome of genital organs and not develop resistance in *C. albicans*.



HERBAL ANTI-DANDRUFF HAIR CARE OIL

- Herbal oil-based formulation for effective management of dandruff.
- Inhibit the recurrence of dandruff and improve hair luster with pleasant aroma.
- Safeness of skin has confirmed through dermal toxicological studies.
- IPR Status: Indian Application No. 202311007302.



HERBAL COUGH SYRUP (NBICOF)

- A traditional knowledge based herbal formulation for the management of the dryness of mouth, cracking of voice and useful as anti-cough and anti-tussive.
- Comprises 5 indigenous plants which helps in treating bronchial catarrh and allergic reactions in throat.
- IPR Status: Patent No. 225350



JOSH: TRADITIONAL KADHA

- A traditional Kadha based on the Ayurvedic principles made up of indigenous plants having anti-inflammatory and anti-oxidant properties.
- Easy to use as miscible in water, tea and milk.
- Clinical trial conducted at DCGI regulated hospitals.



DENTOGEL: TOOTHACHE RELIEVING GEL

- A triple medicated herbal hydrogel for effective management to toothache.
- Provides instant relief from chronic tooth pain and having potent anti-inflammatory, analgesic and anti-microbial properties.
- Pharmacological and biosafety studies have been done as per OECD guidelines.



NITYA: HERBAL MASK STRESS REDUCER

- An herbal decongestant mask spray based on Ayurvedic principles made in three essential oil from plant sources.
- Helps in clearing the wind pipe and subside the inflammation in nasal mucosa leading to ease in breathing.



FOOD/NUTRACEUTICAL SEGMENT

CROMA-3: BIOAVAILABLE CURCUMIN

- An herbal nutraceutical formulation for combating chronic inflammation.
- Monoherbal product comprising anti-inflammatory polyphenols and polysaccharides.
- Strong anti-inflammatory and useful in managing oxidative stress.
- Gluten free and high bioavailability with no toxicity.
- IPR Status: Indian Application No. 202111045277.



NUTRI-JAM

- A nutrient rich fruit jam, fortified with proteins, amino acids and vitamins by adding processed medicinal plants having antioxidant, adaptogenic, anti-stress activities.
- Rich in vitamin A & C with protein, amino acids, specifically leucine and lysine with low fat content.
- IPR Status: Patent No. 415113.



HERBAL SOFT DRINK (NBIRA SOF)

- It is unique blend of modern nutraceutical concepts with traditional knowledge in soft drink category where the product is fortified with medicinal plants having colour and taste similar to the synthetic beverage products.
- Plants used in herbal health drinks have antioxidant, immuno-enhancing, hepato-protective, cardio-tonic, diuretic and digestive properties.
- Devoid of alcohol, cocoa or cola nut and other synthetic chemicals and provide instant energy.
- IPR Status: Patent No. 233541.



HERBAL FERMENTED HEALTH DRINK

- A healthy drink made from lotus rhizomes, rich in amino acids, polyphenols, and other minerals.
- Huge market potential in both the domestic and international market.



LOTUS PETAL BASED TEA (AMRITA)

- Lotus based tea, rich in antioxidants and minerals with a pleasant and soothing unique taste.
- A nutrient-rich healthy drink with huge potential to capture domestic and international markets in this health-conscious market trend.



AGRICULTURE SEGMENT

LOWS ARSENIC ACCUMULATING RICE CULTIVAR

- CN1794-2-CSIR-NBRI, a rice cultivar jointly developed by CSIR-NBRI and Rice Research Station, Chinsurah.
- It is suitable for cultivation in arsenic contaminated areas.
- Cultivar has exhibited low arsenic in grains ($181 \pm 20 \mu\text{g}/\text{kg}$) and high yield [$5.0(\text{kharif})-6.0(\text{boro})\text{t}/\text{ha}$].
- It has demonstrated a yield advantage of 10-15% over popularly grown rice varieties.
- The cultivar has been developed through conventional breeding method, no eco-hazard issues.



BT COTTON TECHNOLOGY

- It is a technology based on Cry1EC gene for the development of transgenic cotton.
- Transgenic BT cotton is resistant to *Spodoptera litura* and other bollworms.
- Economically competitive alternative to chemical pesticides.
- IPR Status: Patent No. 243632.



BT COTTON-COKER

BT COTTON - KHANDAWA

WHITEFLY RESISTANCE TECHNOLOGY

- An anti-whitefly protein isolated from a fern (*Tectaria macrodonta*) has been expressed in cotton that provides resistance against whitefly (*Bemisia tabaci*).
- Whitefly resistant GM cotton can be used by the seed companies for stacking with BT cotton.
- The anti-whitefly gene can also be useful to those seed companies' deals with vegetables, beans, pulses and other crops for defense against whitefly and viral diseases.
- IPR Status: Patent No. 415132.



ANACARDIC ACID BASED GROWTH PROMOTOR

- Herbal formulation based on Anacardic acid for promoting cotton fiber growth.
- It promises at least 10% increase in cotton yield.
- It leads to earliness in cotton production.
- Earliness will also have held in better pest and resource management.
- IPR Status: Indian Application No. 0231DEL2015.



Control

Treatment

Treatment

MICROBIAL BIOINOCULANTS

- Bioinoculants developed for agricultural and floriculture crops.
- Increases yield by approximately 20-30% and also enhances the nutritional value of crops.
- It is simple and low cost technique to treat seeds, seedlings, tubers and other planting materials.
- The results of field demonstrations have indicated the effectiveness and cost efficiency of inoculants.
- It enhances productivity, minimizes chemical fertilizers and pesticides usage and promotes organic farming.



AGRO-TECHNOLOGIES FOR LOTUS: NAMOH108

- Namoh108



TURMERIC VARIETY FOR NORTHERN INDIA

- Kesari is a high yielding (>35 t/ha fresh rhizome) turmeric variety for northern region of India due to its tolerance to low temperature, also free from foliar diseases.
- Leaf essential oil content ranges from 0.6-1.2% comprising bioactive compounds such as α -Phellandrenes (34.04%), p-cymene (17.31) and p-Mentha-1,4(8), diene (17.26%) & rhizome oil content is 1.9%.
- Mainly used for its insecticidal and pesticidal properties.
- It may be the source of extra income without additional cost.



Mandakini: HIGH YIELDING OPIUM VARIETY

- Mandakini is a high yielding, multiple disease tolerant, stable variety of Opium poppy.
- It has high opium (upto 68kg/ha.) and seed yield (12q/ha).



-
- It also has high morphine content (15%) and other alkaloids as compared to other existing varieties.
 - Seeds (breeder seeds) made available to Central Bureau of Narcotics for its multiplication and commercialization in UP, MP and Rajasthan.
 - IP Protected: US Application No. 11/009697 & Patent No. 7442854.
-

THEBAINE RICH OPIUM POPPY LINES FOR SUITABLE CULTIVATION (THROUGH NARCOTICS DEPARTMENT)

- CSIR-NBRI has developed an opium poppy line(s) having up to 10% thebaine in latex. a medically important opioid molecule used in pharmaceutical industries.
- Thebaine is medically important, non-narcotic alkaloid, extensively used in synthesis of pharmaceutical drugs.



ARUNIMA: AN IMPROVED VARIETY OF BIXA

- High bixin content (1.54%).
- Early ripening.
- Less prone to borer infestation.
- Potential alternative to replace tartrazine.



DEHYDRATION OF FLOWERS, FOLIAGE AND FLORAL CRAFT

- A technology developed for dehydration of flowers/ foliage's and marking floral crafts.
- It has been standardized for a wide range of cultivated/ wild flowers, grasses, ferns and ornamental foliage.
- Various artifacts can be prepared such as greeting cards, will hangers, paper weight, bookmarks and candles by embedding the flowers in resin beautiful ornaments has been prepared, which has excellent market.
- Unemployed youth & women may be benefitted by establishing cottage industry based on this technology.



PLANT BASED BIOFILMS

- It is polymeric material prepared from plant based gums and plastic in nature.
- It is stable and non-hygroscopic, transparent, water soluble, biodegradable, nontoxic and edible.
- Acute oral toxicity (OECD Guidelines) tested by Dabur Research Foundation, Ghaziabad & Physical, mechanical testing by (IS-2508)- CIPET, Lucknow.
- It is a cost-effective and eco-friendly technology used for packaging, filming, coating material in food, medicine, textiles, substitute of gelatin, and cosmetics industries.



PERSONAL CARE

HERBAL, FLOOR CLEANER AND DISINFECTANT

- It is water soluble plant based formulation.
- It comprises plant-derived antimicrobials which cleans the surface effectively and provides natural aroma.
- Free from Synthetic chemical and Allergen.
- Non-toxic, biodegradable and eco-friendly.



ALCOHOL BASED HERBAL HAND SANITIZER (LIQUID/GEL)

- An innovation herbal hand sanitizer along with isopropyl alcohol (IPA).
- Effective against all major bacteria and fungi.
- Keeps hands clean, moist, non-sticky and germs-free with pleasant aroma.
- Self-drying gel with soothing effects.



HERBAL DENTAL CREAM

- Fluoride free polyherbal toothpaste jointly developed by CSIR-NBRI and CSIR-CIMAP from medicinal plants.
- Useful in preventing tooth decay caused by *Streptococcus mutans*.
- Effective against cavity forming and gums related problems.
- It provides natural mouth wash effect, maintains oral hygiene and exhibits strong anti-oxidant activity.
- IP Protected: Indian Application No. 201711044952.



ZANTHODENT: HERBAL TOOTHPASTE

- Herbal toothpaste for healthy teeth.
- No synthetic chemical and preservative, including free from triclosan a carcinogenic agent and fluoride free.
- Prevents cavity forming and removes yellowing/staining of teeth.
- Provides mouth freshening effect.



HERBAL GULAL

- CSIR-NBRI developed herbal gulal from flowers and herbs.
- Products are non-toxic, without any heavy metals like red leads oxide or other chemicals.
- Gulal has good sticking capacity to skin and can also be easily removed with soft mop.
- It is also perfumed with essential oils.



HERBAL GULAL FROM TEMPLE USED FLOWERS

- Herbal gulal developed from temple used flowers and herbs.
- Products are non-toxic, without any heavy metals like red leads oxide or other chemicals.
- Gulal has good sticking capacity to skin and can also be easily removed with soft mop.
- It is also perfumed with essential oils.



COSMETICS SEGMENT

HERBAL COLOURS

- Herbal colours developed from medicinal herbs fortified with various aroma.
- Colours are lipophilic in nature having antimicrobial, antioxidant, non-allergic activity.
- Colours are non-toxic and without any heavy metals or other synthetic chemicals.
- Safety & toxicity studies done as per OECD guidelines.
- These natural colours are useful in making of different cosmetics like lipstick, sindoor and lipbalm.
- IP Protected. Patent No. 230948.



HERBAL LIQUID SINDOOR

- The colours used to prepare liquid sindoor extracted from temple used flowers.
- It has good sticking capacity to skin and can be easily removed with soft mop or water washing.
- The product is non-toxic, without any heavy metals like red lead oxide or chemicals.



HERBAL NANOSERUM

- A nano-emulsion based skin-care product containing active herbal ingredients.
- Having nano-droplets (50 -100nm), which have active ingredients of sandalwood oil.
- It enhances the lipid content (palmitic and stearic acids) of skin and provides nourishment to rough and burnt skin.
- It also rejuvenates and maintain essential factors for healthy and moisturized skin.
- IPR Status: Indian Application No. 202011049588.



LOTUS INSPIRED PERFUME (FROTUS)

- CSIR-NBRI developed a unisex perfume from lotus (Namoh-108) jointly in collaboration with FFDC, Kannauj.
- It has a unique, long-lasting, soothing fragrance.
- The product has the potential to attract the cosmetic and fragrance industries.

