

MAY 2026 | VOLUME 12

# NUTRILICIOUS

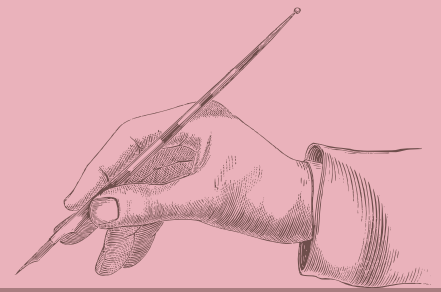
*"Fruits and vegetables are nature's gift for a healthy life. Eating them daily helps protect your body and improve overall well-being....."*

## SPOTLIGHT

- Focus on fresh, healthy eating
- Veggies for gut & overall health
- Latest nutrition insights
- Fruits for immunity & wellness
- Easy healthy recipes
- Balanced lifestyle

DEPT. OF PG STUDIES IN  
FOOD SCIENCE AND NUTRITION  
ALVA'S COLLEGE , MOODBIDIRI

# THE EDITORIAL DESK....



Dear all,

As we bring you yet another edition, it fills me with pride and purpose to share the dedication that goes on behind every page. Our team works tirelessly to gather the latest insights in nutrition, carefully separating evidence-based facts from fleeting fads. Our constant endeavor is to simplify complex information and present only what is accurate, relevant, and beneficial for the well-being of our community.

In this issue, we have chosen to highlight fruits and vegetables—often underestimated, yet incredibly powerful components of a healthy diet. Through thoughtfully curated articles and practical recipes, we aim to reintroduce their value in everyday life.

meaningful knowledge to our readers and contributing to their happiness and well-being.

**Happy reading!!!!**

**CHIEF EDITOR**

**Dr. Archana Prabhat**

**CO- EDITOR**

**Ms. Karthika Devi S.**

**Hello Everyone!**

we are delighted to present the 12th edition of our newsletter, focusing on the importance of fruits and vegetables. this edition includes informative articles, seminars, research papers and healthy recipes.

It aims to enhance knowledge and promote healthy eating habits. we hope you find it useful and enjoyable!!!

**Happy Reading!!!**

**STUDENT EDITOR**

**Ms. Ruheena Fathima**

**Ms. Malavika Chowdary**

# VEGGIE VERSE: THE POWER OF FRESH AND HEALTHY GREENS

## Role of Green Leafy Vegetables in Improving Nutrient Digestion-

Recent research has highlighted the importance of including green leafy vegetables (GLVs) in daily meals, not only for their nutrient content but also for their influence on digestion. A 2025 study published in *Scientific Reports* examined how incorporating green leafy vegetables with meals affects the digestion of starch and lipids under simulated gastrointestinal conditions. The findings revealed that the presence of GLV significantly reduced starch digestibility; high dietary fibre and polyphenol content would slow down enzymatic starch hydrolysis. As a result, glucose release during digestion was delayed, indicating potential benefits in controlling post-meal blood glucose levels.

The vegetables interfered with lipid emulsification and lipase activity, which may contribute to reduced fat absorption. Their ability to modulate starch and fat digestion may help in managing metabolic health, particularly in reducing the risk of obesity, diabetes, and cardiovascular diseases. Including GLV's as part of balanced meals can therefore offer both nutritional and functional health benefits.

PAVITHRA

## Nature's Blossoms for Better Health-

A study on pumpkin flowers (*Cucurbita* species) reported that these flowers are a valuable source of essential nutrients (proteins, minerals, vitamins, and bioactive compounds) highlighting their potential as underutilized ingredients for food product development and nutritional enhancement, which contribute to its therapeutic properties and potential role in reducing oxidative stress-related disorders. In addition, hibiscus flower (*Hibiscus sabdariffa*) has been widely studied for its high phytochemical content, particularly anthocyanins and polyphenols, which exhibit powerful antioxidant properties (and support its application in functional foods and nutraceutical products). Collectively, these studies have health-promoting benefits, making them promising natural ingredients for the development of value-added functional food products.

POOJASHREE

## Water Spinach (*Ipomoea aquatica*)-

Water spinach (*Ipomoea aquatica*), commonly known as kangkong, is a semi-aquatic leafy vegetable widely grown in tropical regions and valued for its high nutritional and functional properties. It is rich in vitamins A and C, iron, dietary fiber, and bioactive compounds such as polyphenols and carotenoids, making it beneficial for immunity, vision, and overall health. Research studies report that it possesses strong antioxidant activity and potential anti-diabetic effects due to its ability to inhibit carbohydrate-digesting enzymes. Agriculturally, water spinach is highly adaptable to waterlogged conditions, grows rapidly, and provides high yield with low input, making it a cost-effective crop for farmers (Guo et al., 2020). Additionally, it plays an environmental role as a phytoremediator by absorbing pollutants from water, although this raises food safety concerns if grown in contaminated environments. It is commonly consumed in stir-fries, soups, and traditional dishes across Asia and is also used as animal feed. Overall, water spinach is a nutritious, economical, and versatile vegetable with significant potential in improving food security and sustainable agriculture.

SHIVANI ACHARYA

# NOVEL RESEARCH INSIGHTS...



## AI DIET PLAN

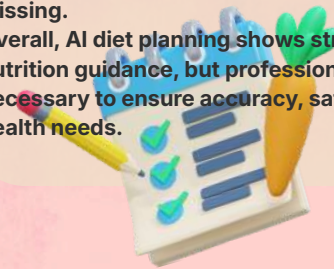


An AI (Artificial intelligence) diet plan uses artificial intelligence to create personalized meal plans based on factors such as age, gender, BMI, health conditions, lifestyle, dietary preferences, and activity levels. The system works through data collection, analysis, meal plan generation, and continuous feedback to improve recommendations over time.

Research studies show that AI tools like ChatGPT can generate recipes and diet plans that are generally close to the intended calorie targets, especially in lower-calorie diet plans. Experts evaluating AI-generated weight-loss diets found their quality similar to human-designed plans, but they sometimes lacked clear portion sizes, affordability considerations, and the ability to fully manage complex medical conditions.

Another study assessing AI diet plans for hypertension and dyslipidemia found that while recommendations were generally appropriate, adherence to established dietary patterns such as the DASH and Mediterranean diets was low and some lifestyle factors were missing.

Overall, AI diet planning shows strong potential as a supportive tool for nutrition guidance, but professional supervision from dietitians is still necessary to ensure accuracy, safety, and suitability for individual health needs.



MALAVIKA



## CHRONO NUTRITION

Chrono nutrition is the study of how the timing, frequency, and regularity of food intake influence metabolism, health, and disease. It focuses on aligning eating patterns with the body's circadian rhythm, a 24-hour internal clock regulating sleep, hormone release, digestion, and energy metabolism.

Consuming meals during the daytime active phase improves glucose and lipid metabolism, while proper feeding-fasting cycles help synchronize organs like the gut and liver.

Chrono nutrition supports optimal digestion, nutrient utilization, and metabolic balance. It plays a key role in weight management and reduces the risk of obesity, type 2 diabetes, and cardiovascular diseases.

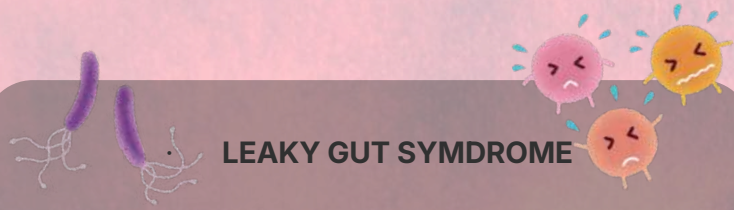
Irregular eating habits, particularly late-night meals, can disrupt circadian rhythms (chrono disruption) and increase the risk of metabolic disorders. Research shows that limiting food intake to daytime, even during night work conditions, helps reduce cardiovascular risk factors compared to eating throughout the day and night.

Thus, chrono nutrition provides a practical strategy for improving health outcomes and preventing lifestyle-related diseases.

PAVITHRA



## LEAKY GUT SYNDROME



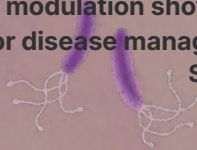
Leaky gut syndrome (LGS) refers to increased intestinal permeability caused by disruption of the intestinal epithelial barrier, particularly tight junctions. Normally, this barrier prevents harmful substances such as pathogens, toxins, and antigens from entering the bloodstream. Common symptoms include acne, sinus issues, joint pain, GERD, fatty liver, and bad breath.

One study shows that metformin improves gut integrity in aging by enhancing mucin production, increasing goblet cell function, modulating gut microbiota, and reducing inflammation, ultimately improving metabolic and cognitive health.

Another study identifies endotoxin (LPS) and other microbial markers like bacterial DNA and  $\beta$ -glucan as indicators of gut permeability, which activate immune receptors (TLRs) and contribute to diseases such as diabetes, liver disease, and chronic kidney disease.

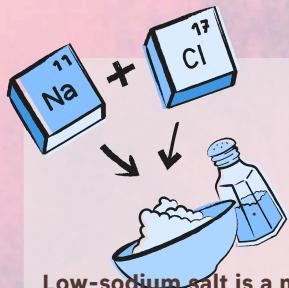
Factors like gut dysbiosis, SIBO, and bile acid imbalance worsen the condition. Therapeutic approaches including probiotics, antibiotics, and bile acid modulation show promise, making LGS a key target for disease management.

SIRI VASAVI



FRUITS & VEGETABLES ARE THE SILENT GUARDIANS OF WELL-BEING

# NOVEL RESEARCH INSIGHTS...



## LOW SODIUM SALT

Low-sodium salt is a modified form of table salt in which part of the sodium chloride is replaced with minerals such as potassium, magnesium, or calcium to reduce overall sodium intake while maintaining a similar salty taste. These salts, often referred to as potassium-enriched or mineral-enriched salt substitutes, are recommended as a dietary strategy to help control sodium consumption and support cardiovascular health.

They are particularly beneficial for adults with hypertension or individuals at risk of heart disease, as reduced sodium intake can contribute to improved blood pressure regulation and a lower risk of cardiovascular events such as stroke and heart attack.

Low-sodium salts are available in different forms including potassium-enriched, magnesium-enriched, calcium-enriched, and blended mineral salts, each designed to balance taste, nutritional value, and functional properties.

Scientific investigations and clinical trials conducted across different populations have assessed their effects on health indicators such as blood pressure, serum potassium levels, bone mineral density, and overall safety. In cardiovascular outcomes, they may support bone health by reducing calcium loss in older adults, and can also be applied in food processing, such as in cured meat products, where mineral-enriched salts improve moisture retention, flavour development, and sensory quality while lowering sodium content.

However, these substitutes are not recommended for individuals with kidney disease due to the potential risk of increased potassium levels.

Overall, low-sodium salt substitutes represent an effective and practical approach to reducing dietary sodium intake while maintaining food quality and promoting better long-term health outcomes.



ANUSHREE

## HIGH ARSENIC LEVELS FOUND IN BREAST MILK IN BIHAR: A Serious Risk to Infants

A recent study published in Environmental Health highlights a serious public health concern in the Gangetic Plains of Bihar, India—high levels of arsenic contamination in the breast milk of mothers. Arsenic is a toxic element commonly found in groundwater in many regions of South Asia. Since groundwater is widely used for drinking and cooking, long-term exposure can lead to accumulation of arsenic in the human body.

The research examined breast milk samples from mothers living in arsenic-affected areas and found detectable levels of arsenic, indicating that infants may be exposed to the contaminant during breastfeeding. Infants are particularly vulnerable because their bodies are still developing, and even small amounts of toxic substances can affect growth, immune function, and neurological development. The study suggests that the primary source of exposure is contaminated drinking water consumed by mothers. Continuous intake of such water leads to the transfer of arsenic into breast milk. Although breastfeeding remains the best source of nutrition for infants, the presence of environmental contaminants raises concerns about long-term health effects.

Researchers emphasize the urgent need for safe drinking water interventions, regular monitoring of arsenic levels, and increased public awareness in affected regions. Ensuring access to clean water is essential to protect both maternal health and infant development in arsenic-prone areas.

RACHEL D SOUZA



## MARINE NUTRACEUTICALS

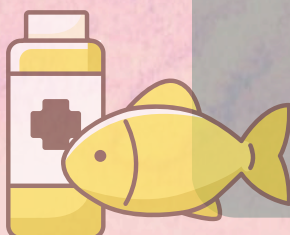
Marine nutraceuticals are bioactive compounds obtained from marine sources such as fish, seaweeds, shellfish, algae, and marine microorganisms. These marine-derived substances are rich in important functional components including omega-3 fatty acids, peptides, polysaccharides, and polyphenols, which are known to provide several health benefits.

Scientific research has shown that these compounds contribute to improved cardiovascular health, enhanced immune function, better cognitive performance, and reduced inflammation. In addition, marine bioactive compounds have demonstrated significant potential in the management of metabolic disorders such as diabetes by improving insulin sensitivity, regulating blood glucose levels, and protecting pancreatic cells through antioxidant and anti-inflammatory actions.

Marine-derived proteins and peptides also play an important role in supporting physical performance by regulating blood pressure, reducing oxidative stress, improving glucose and lipid metabolism, and promoting muscle recovery and endurance. Furthermore, several marine compounds exhibit strong immunomodulatory properties that help regulate immune responses, control inflammatory reactions, and reduce the risk of food allergies.

Overall, marine nutraceuticals represent a promising area in the development of functional foods and natural therapeutic agents aimed at improving metabolic health, enhancing physical performance, and strengthening immune function. However, further clinical research is necessary to establish standardized dosages, ensure safety, and confirm their long-term effectiveness in human health applications.

NAVAMI



# FRUIT VERSE: THE POWER OF NATURE'S SWEET TREASURES

## EXOTIC FRUITS

### Sea Buckthorn

- Nutricious berry
- Rich in vitamin C, vitamin E, Carotenoids, Flavonoids
- Rich in Omega-3 & omega-6 fatty acids
- It has antioxidant & anti-inflammatory properties (improves immunity, skin health, liver function)
- Reduce cholesterol levels
- Support wound healing

### Dragon Fruit

- It is a Tropical fruit
- Rich in vitamin C, Fibre, iron, & magnesium.
- It improves digestion
- Prevents Constipation, boosts immunity, support heart health
- Reduces oxidative stress
- It lowers the risk of chronic diseases

### Persimmon

- It is high in Vitamin A, Vitamin C, fiber and antioxidants
- It supports eye health
- Improves digestion, lowers cholesterol
- reduce the risk of heart diseases
- It is also having anti-inflammatory properties.

### Durian

- Rich in carbohydrates, fiber, potassium, vitamin C, and B vitamins.
- Provides energy
- It supports digestion
- regulated blood pressure
- It improves sleep (it has Tryptophan Content)
- It has antioxidants that supports skin health

ZEHRA SIDDIQUE

## DRY FRUIT FUNGAL

Fungal contamination in dry fruits is a complex and multifactorial issue influenced by environmental conditions, food composition, and processing practices. Contamination varies among dry fruits, with tree nuts like walnuts having higher fungal loads compared to pecans, while dried fruits generally have lower levels except for raisins. The predominant fungi identified include *Aspergillus* and *Penicillium*, with *Aspergillus Niger* being the most common, and *Aspergillus flavus* posing significant health risks due to aflatoxin production, further reveal that contamination occurs at multiple stages, including pre-harvest, harvesting, drying, storage, and transportation. Warm and humid conditions, insect activity, and improper handling contribute significantly to fungal growth. The drying stage is critical, as inadequate moisture removal promotes growth of xerophilic fungi. Storage conditions, like fluctuations in temperature and humidity, enhance contamination risks. Nuts, rich in lipids, are more prone to aflatoxin contamination, while sugar-rich dried fruits like raisins Favor ochratoxin-producing fungi. Advanced detection methods show that even low fungal presence can produce harmful toxins. Strict quality control, proper drying, hygienic handling, and controlled storage are essential to ensure safety.

AMITHA

## GUAVA VS BLUEBERRIES: THE NUTRITIONAL SHOWDOWN

### GUAVA

- Rich in vitamin C
- Boosting immunity effectively
- It contains Vitamin A, potassium, folate, & copper
- It has a low glycemic index
- helps in blood sugar control
- It also has more protein, and double of fiber
- low in fat
- Nutrient rich & contributes to overall health

### BLUEBERRY

- Rich in antioxidants like anthocyanins
- This supports the brain and heart health in the individuals
- Low in fat
- Low in calories, and known for their unique polyphenol content
- Highly expensive and less accessible
- Contains specific antioxidant benefits

NAVAMI

# RECIPIES

## BITTERGOURD CHUTNEY POWDER

### Nutritive Value

Energy - 420-450 kcal

Carbohydrates (CHO) - 35-40 g

Protein - 12-15 g

Fat - 25-30 g

### Ingredients:

- Bitter gourd - 1-2 medium-sized
- Urad dal - 1/8 cup
- Chana dal - 1/8 cup
- White sesame seeds - 1/8 cup
- Dried red chillies - 7-8 numbers
- Salt - to taste
- Oil - 1-2 tbsp



### PREPARATION:

- Wash, slice bitter melon, remove seeds, apply salt, rest, and squeeze out bitterness.
- Optionally blanch or soak in buttermilk/tamarind water, then dry (sun-dry or roast) until crisp.
- Heat oil and roast urad dal and chana dal until golden brown.
- Add and roast sesame seeds, red chillies, garlic, coconut, and cumin until aromatic.

## BANANA MALPUA

### INGREDIENTS:

- 2 ripe bananas
- $\frac{1}{2}$  cup whole wheat flour
- Jaggery (instead of sugar)
- Fennel seeds

### NUTRITIVE VALUE:

Energy - 220-250 kcal

Carbohydrates (CHO) - 40-45 g

Protein - 3-5 g

Fat - 5-8 g



### PREPARATION:

- Mash the bananas thoroughly.
- Mix them with flour and jaggery until well combined.
- Add fennel seeds and mix properly.
- Cook the mixture like pancakes using a little ghee until golden brown

## MEXICAN WATERMELON SALAD (WATERMELON WITH TAJIN):

### INGREDIENTS:

- Watermelon -  $\frac{1}{2}$  small
- Olive oil - 1 tbsp
- Lime juice - 2 tsp
- Tajin seasoning - 1 tbsp
- Cotija cheese - 2 oz ( $\approx \frac{1}{4}$  cup)
- Cilantro - 2 tsp (chopped)
- Lime -  $\frac{1}{2}$  (for serving)
- Jalapeño (optional) -  $\frac{1}{4}$  (sliced)

### NUTRITIVE VALUE:

Energy 1831.5kcal

CHO 117.6g

Protein 38.6g

Fat 6.63g



### PREPARATION:

- Remove the rind from the watermelon and cut it into 1-inch-thick slices, then shape into triangles.
- Arrange the slices neatly on a plate or serving tray.
- Drizzle olive oil and fresh lime juice over the watermelon pieces.
- Sprinkle Tajin seasoning, Cotija cheese, cilantro, and optional jalapeños on top.
- Serve immediately with lime wedges for added flavors.

# DEPARTMENTAL ACHIEVEMENTS AND ACTIVITIES



## EXTENTION ACTIVITIES

## UNIVERSITY TOPPERS



## IAPEN India Mangaluru chapter CNE



## GUEST TALK



## CONFERENCE



## DIET CAMP

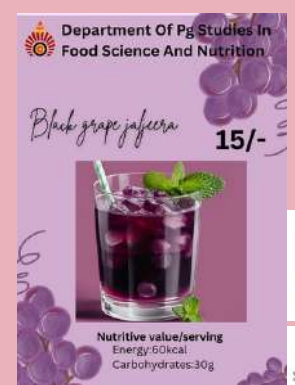
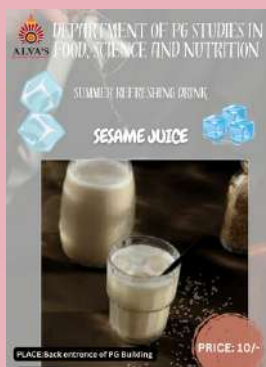
Dr. Archana Prabhat, Ms. Karthika, and Ms. Tejaswi Shetty presented their research paper at the International Conference, Periyar University, Salem. Dr. Archana Prabhat secured 3rd prize in Oral presentation. Ms. Tejaswi bagged 3rd prize in Poster presentation.

Adding to this milestone, Dr. Archana Prabhat was invited as a speaker at ICNC2026, Nagpur

## PUBLISHED RESEARCH PAPER



## DRINKATHON



## DEPARTMENT WEEKLY STALL NUTRI-PRODUCTS