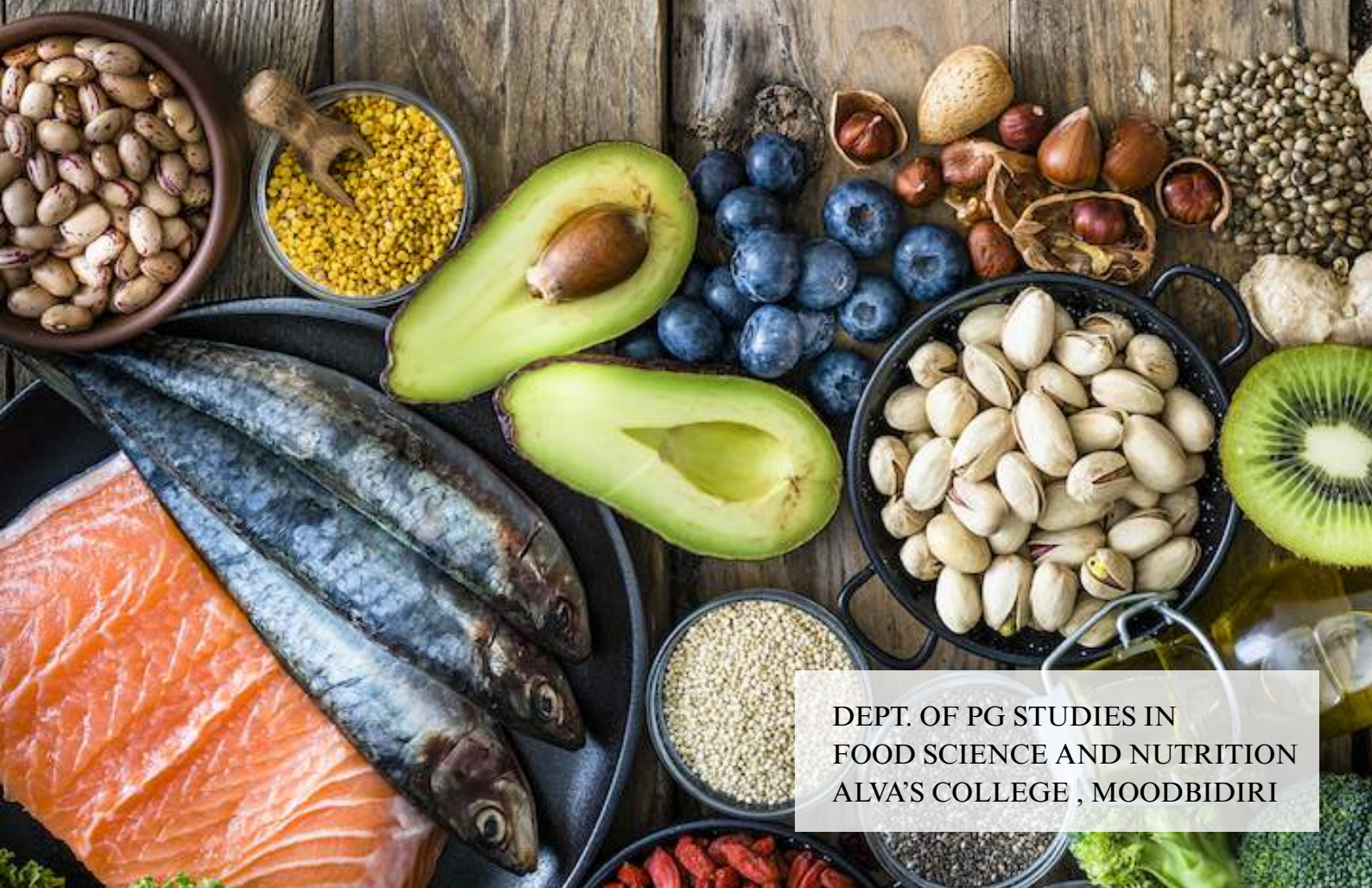


# NUTRILICIOUS

*Protein is not just a nutrient - its the foundation of strenght, repar, and resilience.....*

## SPOTLIGHT

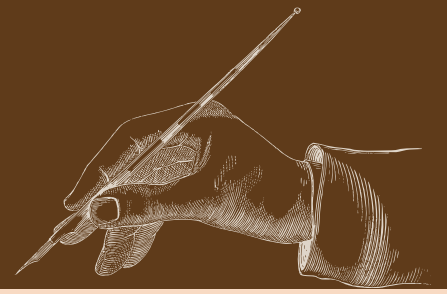
- **Whey Protein:**
  - Key research + health perks.
- **Food Proteins:**
  - Sustainable benefits.
- **Protein Recipes:** Easy meals that fuel the body.



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



# THE EDITORIAL DESK



Dear Readers,

Protein malnutrition continues to be a silent epidemic in India—not always due to quantity, but often because of poor quality protein in everyday diets. Despite growing awareness, many still rely on carbohydrate-heavy meals with insufficient protein diversity or digestibility.

At the same time, whey protein has rapidly gained popularity, particularly among fitness enthusiasts. However, there's a significant gap between perception and science—leading to misconceptions, misuse, and missed opportunities for improving public health.

Keeping this in mind, this edition of our newsletter is dedicated to the theme of Protein. We bring you:

- **Whey Protein – Research Insights:** A closer look at its benefits for muscle recovery, immunity, and how much is really needed for different age groups.
- **Benefits of Food-Based Proteins:** From plants to fungi and microalgae, we highlight natural, sustainable sources that support long-term health.
- **Protein-Rich Recipes:** Simple, wholesome meals packed with powerful nutrients to help you eat well and live better.

We hope this edition empowers you with knowledge and inspires healthier choices. May the good news of nutrition reach every home, and may we all move toward a happier, healthier future.

**CHIEF EDITOR**

**Dr. Archana Prabhat**

**CO- EDITOR**

**Ms. Karthika Devi S.**

Hello Everyone!

Super excited to bring you the 11th edition of our newsletter. This time, we're diving into the world of proteins—why they matter, where to get them, and what's the deal with all those protein shakes and bars. Whether you're a fitness fan or just curious about healthy eating, there's something here for you. Hope you enjoy it and take away some useful tips for your everyday life!

Happy Reading!!!

**STUDENT EDITOR**

**Ms. Rutika R. Kuckian**

**Ms. Ruheena Sheikh**

# POWERUP WITH PROTEIN

**Branch Chain Amino Acids:** Essential nutrients—leucine, isoleucine, and valine—that play a key role in muscle protein synthesis, energy production, and recovery, making them crucial for athletes and overall metabolic health.

**Aromatic amino acids:** Phenylalanine, tyrosine, and tryptophan—contain benzene rings in their structure, making them essential for protein biosynthesis and crucial precursors for neurotransmitters, hormones, and other biological molecules.



## Quinoa

BCAA and Aromatic Amino Acids

- Antioxidant
- Gut health
- Weight management
- Maintain blood sugar & cholesterol level



## Buckwheat

BCAA and Aromatic Amino Acids

- Heart health
- Blood sugar control
- High in fiber
- Gluten-free
- Antioxidant



## Spirulina

BCAA and Aromatic Amino Acids

- Muscle repair, growth
- Tissue repair
- Detoxification
- Enhances mood regulation
- Nerve protection



## Ezekiel bread

BCAA and Aromatic Amino Acids

- Collagen formation
- Muscle repair
- Aids in tissue repair
- Healthy skin, teeth & CNS
- Improves sleep and mood



## Amaranth

BCAA and Aromatic Amino Acids

- Anti-inflammatory
- High in fiber
- Gluten free
- Muscle repair, muscle growth
- Aiding sleep and mood



## Hemp seed

BCAA and Aromatic Amino Acids

- Rich in omega-3 and omega-6 fatty acids
- Anti-inflammatory
- Supports heart health
- Boosts skin health
- Easily digestible



## Chia seeds

BCAA and Aromatic Amino Acids

- Stabilizes blood sugar
- Bone support
- Antioxidant rich
- Rich in omega-3 fatty acids
- Supports brain and gut function



## Nutritional Yeast

BCAA and Aromatic Amino Acids

- Rich in B-vitamins
- Immune support
- Energy production
- Low in fat and calories
- Flavor enhancer

Including protein-rich foods in your diet aids muscle repair, boosts metabolism, and promotes satiety while supporting overall health.

*Amino acids build more than muscle; they build life.*

## Protein quality assessment of commercial whey protein supplements commonly consumed in Turkey by in vitro protein digestibility-corrected amino acid score (PDCAAS).

Whey protein is popular for muscle recovery due to its rich essential amino acid (EAA) and branched-chain amino acid (BCAA) content. BCAA levels were consistently below recommended values, limiting recovery benefits. Digestibility ranged from 50.4% to 79.6%, much lower than expected (~90%), likely due to poor processing. PDCAAS values (0.08-0.71) indicated low protein quality. Consumers should be cautious, and manufacturers must improve labeling, processing, and quality control for reliable supplementation.

**Source:** Pehlivanoğlu et., al (2021). Food Science and Technology, 42, e64720.  
**Siri Vasavi PA,**  
**I MSc-FSN**

## WHEY VS CASEIN PROTEINS: BENEFITS FOR ATHLETES.

It's clear that both whey and casein protein supplements are effective for improving muscle growth, strength, and body composition when combined with consistent resistance training. The key takeaway is that while whey is fast-digesting and ideal for post-workout recovery, casein digests slowly, offering a longer-lasting supply of amino acids, which can be beneficial especially overnight or between meals. Whey protein may be more effective immediately post-exercise when the muscles are primed to absorb nutrients quickly. Casein protein could be ideal before bed to aid overnight muscle repair due to its slow-release nature. Finally, the lack of significant differences between whey and casein highlights that total protein intake and consistent training may be more important than the specific type of protein used. During an eight-week resistance training program, it showed an improvement in lean muscle mass, reduced body fat, and enhanced strength and performance. Whey protein, known for its fast absorption, is ideal right after workouts when muscles need quick recovery. Whether you choose whey or casein depends on your timing and preference. Both support muscle growth and recovery, so athletes can pick the one that best fits their routine.

**Source:** Cepero, et., al (2010). Journal of Human Sport and Exercise, (II), 158-175.  
**Pavitra Poojary**  
**I MSc-FSN**

# Novel Research Insights...

## High-Protein Bar Study: Supporting Athletes' Metabolic Health

A new high-protein bar has been thoughtfully developed with athletes in mind, using a blend of whey and soy protein isolates, oat flakes, and inulin. More than just a nutritious snack, this bar was carefully crafted to support athletic performance and recovery. Its nutritional profile was thoroughly analyzed. They showed better physiological adaptation after workouts, with reduced levels of AST and LDH—markers that suggest less muscle damage. In addition, higher levels of total and direct bilirubin pointed to an improved antioxidant response, offering added protection against oxidative stress—it's an effective tool for athletes looking to fuel their bodies, recover better, and perform at their best.

**Source:** Abdel-salam et. al. American Journal of Food Science and Technology, 10(1), 53-65.  
**Navami Prashant**  
**I MSc-FSN**

## Whey Protein Supplement: An Exclusive Food or Need of the Hour: Review

Protein is a vital nutrient that plays a key role in body composition and metabolism. With the global population rising and natural resources becoming limited, it is crucial to find affordable and sustainable protein sources. Whey protein stands out in this context as one of the most economical and readily available options. Derived as a by-product of cheese production, whey was once considered waste by the dairy industry. Whey protein offers promising therapeutic potential, including immune support and possible cancer-fighting properties. It contains carbohydrates, fats, immunoglobulins, lactose, and essential minerals, making it an important source of energy. It supports muscle growth, fat loss, and overall health. However, excessive consumption may lead to side effects such as bloating, gas, and acne—often linked to lactose intolerance.

**Source:** Sonia Sangwan and Raman Seth . Review ( May 2021)  
**Liya Luke**  
**III MSc-FSN**



## Power Proteins Reimagined: The Functional Edge of Fermentation

Fermentation enhances the nutritional quality of protein-rich foods by breaking down anti-nutritional factors like phytic acid and trypsin inhibitors, improving digestibility and amino acid bioavailability. Beyond nutrition, fermented proteins offer functional benefits due to the production of bioactive peptides—short amino acid sequences generated during fermentation. For e.g., Casein phosphopeptides (CPPs) from fermented dairy support mineral absorption and immune function and soy-based products like tempeh and miso, fermentation yields peptides such as lunasin and aglycin, which show cholesterol-lowering and anti-cancer potential. These functional peptides enhance the health value of fermented protein supplements, particularly in sports nutrition.

Additionally, the presence of probiotics and postbiotics in fermented protein foods supports gut health and immune modulation.

**Source:** Li et al., 2020; Zhang et al., 2018  
**Hithashree B.S,**  
**II MSc- FSN**

## Mycelium Protein: A Sustainable Solution for Meat Alternatives

Mycelium, the root-like structure of fungi, is rapidly gaining attention as a revolutionary alternative to traditional protein sources due to its remarkable environmental and nutritional benefits. One of the most compelling aspects of mycelium is its ability to thrive on agricultural waste, transforming by-products that would otherwise be discarded into valuable, nutrient-rich food. This not only reduces food waste but also contributes to a circular and sustainable food system. In stark contrast to conventional livestock farming, which demands vast amounts of land, water, and feed, mycelium cultivation is highly efficient. It requires minimal resources and can be grown vertically in controlled environments, making it scalable and less vulnerable to climate-related disruptions.

Nutritionally, mycelium is rich in high-quality protein, dietary fiber, and essential micronutrients, making it a strong candidate to address global protein deficiencies. It also contains beta-glucans, compounds known for their immune-boosting and cholesterol-lowering properties. This makes it a versatile ingredient suitable for a wide range of dietary preferences, from vegetarians and vegans to flexitarians and meat eaters.

**Source:** Holt et al. (2023). Journal of Agricultural and Food Chemistry, 72(5), 2697–2707.  
**Anushree**  
**I MSc-FSN**

# Novel Research Insights...

## Microalgae and Spirulina as Sources of High-Quality Protein for Human Food and Protein Supplements

Protein supplements are increasing in demand as fitness culture and health awareness have evolved. For example, spirulina provides all of the necessary amino acids and 60–70% protein by dry weight. Because of these characteristics, microalgae are perfect for vegans, vegetarians, and people looking for eco-friendly dietary options. The CFTRI has been instrumental in the development of food products derived from Spirulina. Notable innovations include the Spirulina Groundnut Chikki, a snack rich in protein and micronutrients designed to combat malnutrition, and Spirulina-Enriched Probiotic Milk, which enhances gut health while increasing protein consumption.

**Source:** Ramírez-Rodrigues et., al (2021). 13(12), 6849.

**Harshitha Rao**  
**II MSc-FSN**

## Sustaining Protein Nutrition through Plant Based Foods

Plant-based proteins are a nutritious and sustainable solution to meet rising global protein demands, especially as the population is expected to surpass 9 billion by 2050. Traditional animal protein sources require large amounts of land and water and contribute significantly to pollution and greenhouse gas emissions. In contrast, plant proteins are more eco-friendly and support better health. Sources like legumes, grains, nuts, seeds, and pseudocereals are rich in protein. While some are incomplete proteins, combining foods like grains and legumes provides all essential amino acids. Diets high in plant protein are linked to lower risks of heart disease, obesity, and type 2 diabetes. Globally, plant proteins already make up about 57% of protein intake.

**Source:** Langyan et al. (2022). Sustaining protein nutrition through plant-based foods. Frontiers in Nutrition, 8, 772573.

**Poojashree Acharya**  
**I MSc-FSN**

# Protein Rich Recipies

## SPROUTED LENTILS HUMMUS

### NUTRITIVE VALUE:

- Energy 312.33kcal
- CHO 27.18g
- Protein 12.21g
- Fat 19.03g

### INGREDIENTS:

- 1 cup sprouted masoor dal
- 1-2 garlic cloves
- 1- green chilly
- 1 tbsp- sesame seeds
- 2 tbsp- olive oil
- 1 tbsp - lemon juice
- ½ tsp - cumin, coriander, turmeric powder
- salt to taste
- water according to the consistency



### PREPARATION:

- Soak masoor dal overnight in water
- Drain the water, wrap the dal in a cloth. let it sprout 1-2 days until shoot appears
- rinse and cook them well until soft, pressure cook until 2 whistles or boil them
- In a blender, add cooked sprouted lentils, garlic, tahini, olive oil, lemon juice, cumin powder, coriander, turmeric and garam masala and salt. blend until smooth.
- Transfer the hummus to a serving bowl, drizzle with a little more olive oil and garnish with coriander leaves,

## BLACKBEAN CHOCOLATE BROWNIES



### INGREDIENTS:

- 1 ½ cup black beans
- 2 eggs
- ⅓-unsweetened cocoa powder
- ½ cup -protein powder
- ¼ cup- honey
- 2 tbsp - coconut oil
- salt to taste
- ½ tsp- baking powder
- 1 tsp- vanilla extract

### NUTRITIVE VALUE:

- Energy 110kcal
- CHO 8g
- Protein 13g
- fat 4g

### PREPARATION:

- Preheat the oven at 175°C & grease the pan, blend the black beans until it turns smooth
- Add egg, cocoa powder, protein powder, oil, salt, baking powder, and vanilla. blend until fully mixed
- Pour batter into a pan and spread evenly, bake for 20-25 minutes or until a toothpick comes out mostly clean
- Cool it before slicing into squares

## RAJMA KABAB

### NUTRITIVE VALUE:

- Energy 180kcal
- CHO 19g
- Protein 8g
- Fat 3g

### INGREDIENTS:

- 1 CUP-BOILED RAJMA
- ½ CUP- FINELY CHOPPED ONION
- ½ CUP- CORN FLOUR
- ½ CUP- PANEER
- ¼ TSP- TURMERIC POWDER
- ½ TSP- CORIANDER POWDER
- ½ TSP- CUMIN SEEDS
- 1 TBSP-OIL
- SALT TO TASTE



### PREPARATION:

- Mix all the ingredients with your hands in a bowl, divide the mixture as per convenience and roll each portion into a flat round kabab
- Heat a pan, grease it with oil & shallow fry it until both sides turn golden brown
- Serve hot with Pudina Chutney



# Protein Rich Recipies

## VEGAN PROTEIN BOWL

### NUTRITIVE VALUE:

•Energy	130kcal
•CHO	18g
•Protein	9g
•Fat	3g

### INGREDIENTS:

- 1 CUP- COOKED LENTILS (MOONGDAL)
- ½ CUP- COOKED RICE
- 1 CUP- CHOPPED SPINACH
- ¼ CUP- CHOPPED ONIONS AND TOMATOES
- 1 TSPN- CUMIN SEEDS
- ½ TSP- TURMERIC SALT, PEPPER
- 1 TBSP- OIL



### PREPARATION:

- In a pan, heat the oil and add cumin seeds
- Add onions, tomatoes, and cook it until soft
- Add turmeric, salt and other spices
- Stir fry the lentils and leafy greens
- Cook for 2-3 minutes until greens are wilted
- Add rice, mix it well and serve

## URAD DAL BURFI

### INGREDIENTS:

- 200G - URAD DAL
- 100G MOONG DAL
- 250G - JAGGERY
- 150ML - MILK
- 15G - GHEE

### NUTRITIVE VALUE:

•Energy	1831.5kcal
•CHO	117.6g
•Protein	38.6g
•Fat	6.63g



### PREPARATION:

- Shallow fry the moong dal and urad dal until golden brown color and grind it to fine powder
- Next add jaggery and water, melt until the sticky consistency, add milk to the melted jaggery
- Keep the pan on the stove and mix until sticky consistency by adding ghee to it. apply ghee to the plate and pour the mixture, let it cool down. cut into pieces and enjoy.

## PANEER STUFFED MOONGLET

### NUTRITIVE VALUE:

•Energy	680 kcal
•CHO	116g
•Protein	48g
•Fat	3g

### INGREDIENTS:

- 1CUP- YELLOW MOONG DAL
- 1 - GREEN CHILLI AND GINGER
- SALT TO TASTE
- ¼ - TURMERIC, BLACK PEPPER, GARAM MASALA
- ¼ TSPN- BAKING SODA
- ½ CUP - CRUMBLED PANEER
- ¼ CUP- CHOPPED ONIONS, CAPSICUM

### PREPARATION:

- Grind the soaked moong dal with chilly and ginger into a thick, smooth batter using minimal water. add salt and turmeric, let it ferment for 1-2 hours
- Mix all the ingredients in a bowl as mixing the stuff
- Heat a pan, pour a ladle of batter and spread gently to a thick round
- Cover and cook for 2-3 minutes and flip it carefully
- Add stuffing on one side and fold the moonglet like an omlette
- Press and cook for another 2 minutes, and serve it hot





# DEPARTMENTAL ACHIVEMENTS AND ACTIVITIES

## Industrial visit

## Diabetes Day Diet Camp

## NUTRICON – Mumbai



Janatha Fish Meal and Oil Products,  
Kundapura



## Women's day celebration



Alumni talk



## Visit to Chetana Special School



Webinar



Sports Nutrition Seminar

## Published Research Paper



Dr. Archana Prabhat presenting at ICNC  
Conference – won 2nd place.



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