CGAS ASSIGNMENT-1

Q4.

Boiled Egg

per 1 large egg, about 50grams

Calories: Approx. 68 Kcal
Protein: About 6 grams
Fats: Around 5 grams
- saturated fats: 1.6 grams
Carbohydrates: <1 gram
~~Carbohydrates~~ : <
Cholesterol: Approx. 186 mg
Vitamins & Minerals:
→ Rich in Vitamins B12, D, A & riboflavin
→ Contains minerals like selenium & phosphorus.

Boiled Rice & ~~Dal~~ Daal

per 1 cup of cooked rice & daal, about 250 grams

Boiled Rice (per 1 cup, about 158gm

calories: Approx 205 kcal
Protein: About 4 grams
Fats: > 1 gram
Carbohydrates: about 45grams
Vitamins & minerals →
small amount of vitamin B, iron, mg.

Boiled Daal (lentil, per 1 cup, about 90gms
calories: Approx. 230 gms, Protein: About 18 gms
Fats: >1 gms, Carbohydrates: About 40gms.
Vitamins & minerals: Rice in folate, iron, potassium & magnese

Comparision

Calories: Boiled rice & daal provies more calories then single boiled egg.
Protein: Boiled egg is a good source of protein, but daal provide more protein.
Fats: A boiled egg contains more fat, specially saturated fat then rice & daal.
Carbohydrate: Boiled rice & ~~dal~~ daal have much high carbohydrate content.
Vitamin & Minerals: Eggs are rich in certain vitamins like B12 & D, and daal is rich in folate & iron.

Q5

Five uncommon food ingredient

1. Gular
   Local Name : Gular
   English Name : Cluster Fig
   Seasonal Use : Typically available in the summer months
   Nutritional Values: Rich in dietary fiber, calcium, & iron. It also contains antioxidants & vitamins like A & C.

2. Kabachhua
   Local Name: Kabachuaa
   English Name: Not recognised.
   Seasonal Use: Winter season
   Nutritional Values: Generally considered nutritious with potential medical properties but specific nutritional data is scarce.

3. Barhar ke flowers/Phool
   Local Name : Barhar ke Phool.
   English Name: Lakoocha/Monkey jack flower
   Seasonal Use: Typically bloom in the Spring.
   Nutritional Values: They are believed to have antioxidant properties.

4. Kadam ke Phool
   Local Name: Kadam ke Phool
   English Name: Burflower-tree flowers
   Seasonal Use Bloom during monsoon season.
   Nutritional Values: Contains antioxidants & is used in traditional medicine for its anti-inflammatory properties.

5. Tilkor Leaves

Local Name: Tilkor ka patta

English Name: Not much recognised.

Seasonal Use: Typically used in rainy season.

Nutritional Values: It is believed to be good source of vitamins & minerals. Good for eyes.

Q6. (a). Statement "cooking food in the microwave destroys its nutrient nutritional value" is a myth. Scientific evidence suggests that microwave cooking is actually on of the better methods for preserving nutrients in food. Here's why:

① Shorter Cooking Time: Microwaving generally takes less time then other methods reducing nutrient breakdown. If time taken to cook food is more then more nutrients are likely to be lost. Therefore, quick cooking time of microwave helps retain more vitamins & minerals.

② Minimal Water use: More nutrients are preserved when we microwave food, especially without adding water. Boiling for eg. can cause water Soluble vitamins like vitamin B & C. to leach into cooking water, which is often discarded.

Also, microwaves vibrates water molecules, which generate heat and cooks the food. This method does not inherantly destroy nutrients more than other cooking methods.

6. Statement "Refrigerating food ~~does~~ destroys its nutritional value" is a myth. Refrigeration is used to preserve food's nutritional quality.

① Slows Down Spoilage: Refrigeration reduces growth of bacteria & other micro-organisms that causes food spoilage, helping to keep food fresh & maintain its nutrition longer than if left at room temperature.

② Preserving Nutrients: Although some vitamins like C can decrease over time, refrigeration slows this down. Fresh fruits & vegetables keep their vitamins and minerals better in the fridge than when left out

③ Preventing Oxidation: Refrigeration slows down the oxidation of fats and oils, which can cause rancidity and reduce nutrient quality. Keeping foods cool helps preserve their nutrients by reducing the rate of oxidation.

developing countries.

c. Statement "Generic modification in plants or animals are bad" is complex topic with both scientific truth and myths associated with it.

Scientific truth

① Higher crop yields: GM crops can grow better in tough conditions and resist pests, helping to ensure food supply.

② Improved Nutrition: Some GM foods, like Golden Rice are designed to provide essential nutrients such as vitamin A.

③ Medicinal Uses: Generic modifications in animals have led to important medical advances like producing insulin.

Concerns.

① Health Safety: GM foods are considered safe by scientists but some people worry about unknown long term effects.

② Environmental impact: There are fears that GM crops could reduce biodiversity or create herbicide resistant "superweeds".

③ Ethical Issues: Some are concerned about large companies have over GM seeds and potential impact on small farmers.

GM is not simply "good or bad" but depends on how it's used and managed.

Q7.

The calorific content of food is usually measured using bomb calorimetry. In this method, a food sample is placed in the a sealed container called a bomb calorimeter, which is filled with oxygen. The sample is then ignited and the heat released during combustion is absorbed by surrounding water. By measuring the temperature change in the water, the energy content of the food is calculated. This method provides an accurate measurement of the food's energy value, expressed in calories or joules.

Q8. Here are 8 specific technologies/products that could emerge from the application of Computational Gastronomy paradigm:

① Flavour Pairing Algorithms: Advanced AI-driven algorithms that identify the chemical composition of ingredients, new ideas to suggest novel and harmonious flavour pairings that will enhance culinary creativity and innovation.

② Nutritional ~~Optimizat~~ Optimization Software- Tools to customise meals of individual dietary needs and preferences (temperature, time etc) based on real-time monitoring data to ensure good results every time.

③ Food Waste Reduction Platform - System that analyses purchasing and consumption patterns to suggest ways to reduce waste. such as recipe suggestions for leftover ingredients or best storage methods.

④ Virtual Cooking Assistants - AI-powered assistants that provide instant guidance during cooking, offering tips, changes and adjustments based on user feedback and prefre preferences.

⑤ Smart Cooking ~~Application~~ Appliances - Kitchen appliances that supports IoT automatically ~~adjustable~~ cooking parameters (temp., time etc.) based on real-time monitoring data to ensure good results every time.

⑥ Personalized Recipe Generators - App that gererate/ creates recipes based on personal taste profiles, dietary restrictions and available ingredients using machine learning to improve suggestions over time.

⑦ Culinary Data Visualization Tools - Platforms that visualize complex culinary data such as flavor profiles and ingredient interaction to aid chefs and food scientists in understanding and imp innovating new dishes.

⑧ Sensory Experience Simulators - Devices that simulate taste and aroma experiences using digital interfaces allowing users to "taste" dishes visually before preparing them.