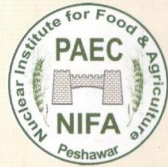


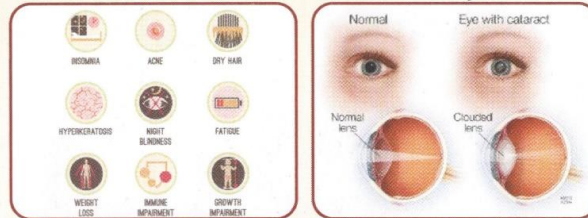
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NIFA VITAMIN-A SPOT TEST KIT

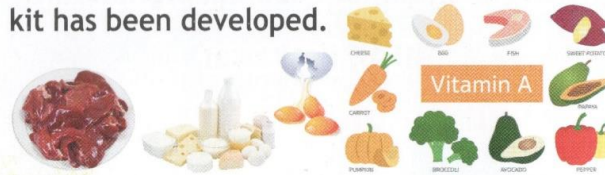
“Vitamin-A” is the generic term for a group of fat-soluble compounds found in both animal and plant foods. It is needed in small quantities for eye health, immune function, reproduction, and fetal development. Major sources of vitamin-A are liver, fish, eggs, dairy products, leafy green vegetables, and fruits. The Recommended Dietary Allowance (RDA) for vitamin A is 900 mcg and 700 mcg per day for men and women, respectively.

Diets deficient in Vitamin-A may cause severe health complications such as night blindness, pregnancy complications, certain types of cancers, and skin problems. According to the National Nutrition Survey (NNS) of Pakistan (2018-19) about 51.5% of children have vitamin-A deficiency (VAD), of whom 12.1% have severe deficiency.



Preventive Measures

To prevent VAD, people should eat vitamin-A rich foods. Fortification of vitamin-A in edible fats/oils is also one of the effective tools to minimize VAD among masses. In order to detect the level of vitamin-A fortification in fortified oil/ghee, NIFA vitamin-A spot test kit has been developed.



NIFA Spot Test Kits

Food & Nutrition Division (FND) of NIFA, Peshawar has developed different qualitative testing kits such as Vitamin-A, iron, iodine and POV Spot Test Kits to ensure food safety and quality.



NIFA Vitamin-A Spot Test Kit



NIFA Iron Spot Test Kit



NIFA Iodine Spot Test Kit



NIFA POV Spot Test Kit

Characteristics of Vitamin-A Spot Test Kit

Composition:

1 spot test kit consists of 2 glass bottles of blue (reagent-1) and red (reagent-2) color.



Pakistan Atomic Energy Commission

Nuclear Institute for Food and Agriculture

(NIFA), Peshawar

Food & Nutrition Division

How to Use?

- Take 2-3 drops of oil/ghee sample in a clean and dry test tube (pre-heat oil/ghee sample up to 40°C).
- Add 1ml of reagent-1 in the test tube and shake it well.
- Add 1ml of reagent-2 and observe the color change.
- If blue color appears, it indicates the presence of fortified vitamin A in tested sample and vice versa



1st Step: Take 2-3 drops of oil/ghee sample in test tube



2nd Step: Add 1ml of Reagent-1 in test tube



3rd Step: Add 1ml of Reagent-2 in test tube



4th Step: Observe change in the color of sample and compare it with test chart

Test Chart

Test chart shows the level of vitamin-A fortification

More

Adequate

Less



Testing Capacity/Kit

Approximately 18-20 tests can be performed by using 1 spot test kit

Shelf Life

NIFA vitamin-A spot test kits can be used within 4 months before opening of reagents while a kit should be used within 7 days after opening. Kits should be stored at 30°C temperature

Precautions

- Use disposable gloves and face mask during the experiment because hazardous chemicals are present inside kit bottles which can be harmful
- Properly discard sample solution after performing the test
- Properly wash and dry petri dish for next test.
- Wash your hands with soap after performing the test
- Always keep the reagents tightly packed
- Observe the color change in the sample carefully because it appears momentarily

Benefits of Vitamin-A Spot Test Kit

- Quality assurance of fats/oils during processing
- Help food authorities to monitor and enforce food safety standards
- Economical, rapid and easy to use
- No need of trained personnel to use kit

End Users

- Oil and Ghee Industry of Pakistan
- Provincial Food Regulatory Authorities
- International NGOs working on nutrition in Pakistan

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