

Q.No GOLDEN RICE

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GOLDEN RICE is genetically modified, biofortified crop which increases the nutritional value of crops. <https://t.me/karthiksCA>

Presence of beta-Carotene pigment, the rice is golden in colour.

Beta-Carotene - $C_{40}H_{56}$

The Human body converts beta-Carotene into Vitamin A.

Invention:

Developed by German Plant Scientists.

Ingo Potrykus
Peter Beyer

Benefits:

- i) Help to prevent Vitamin A deficiency
- ii) Micronutrient malnutrition
- iii) Easily identifiable
- iv) Nutritional Value upto 35 μ g β -Carotene/gm of rice

Disadvantages :

- i) More expensive than Conventional Crop
- ii) Gene Contamination - Cross breed with wild rice
- iii) Risk of allergies or antibiotic resistance
- iv) Create unpredictable toxic by-products

No cultivation or commercialization of Golden Rice in India currently.

Vitamin - A Deficiency Causes :

- i) Blindness - Night Blindness
- ii) Weakened immune system
- iii) Skin problems
- iv) Hair loss.

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Mostly affected :

- i) Children under age 5
- ii) Pregnant Women
- iii) Lactating mothers

Philippines is the 1st Country to approve Golden Rice in 2019.

Bangladesh - approved for commercial Cultivation (2020)

Indonesia - approved (2021)

India - Approved for field trial

Institutions :

(i) IRRI - International Rice Research Institute
(17-growing countries in Asia & Africa)

Partners : PhilRice - Philippine Rice
Research Institute

BRRI - Bangladesh Rice
Research Institute

(ii) ISARC - International Rice Research
Institute South Asia Regional Centre
Location - Varanasi, U.P.

(iii) Headquarters of NRRI - National Rice
Research Institute
Cuttack, Odisha

Conclusion : It represents a promising
biotechnology application addressing a
pressing nutritional need & the ongoing
research, collaboration will ensure its
implementation to improve lives.