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SOYBEAN



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Scientific Name- Glycine max

Chromosome No (2n=40)

Family- Leguminosae

Origin- China

Distribution- USA, Brazil, China , Argentina and India

.One of the important oil yielding crop of world it is miracle crop giving 42 – 45 per cent protein and 19-20 per cent oil.It is a self pollinated crop

.It is also known as wonder crop

.It is called as Poor mans' meat

Health Benefits Of Soybean

.Improves Metabolic Activities

.Prevent Cancer



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- .Healthy Weight Gain
- .Improve Bone Health
- .Improve Circulation
- .Control Diabetes

Progenitors- G. usuriensi
G. tomentolla
G. tabacina
G. gracilis

Glycine max is originate from G. usuriensi and G.tomentolla



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Breeding Objectives

1. Breeding for short duration high yielding varieties .

The yield of soy bean plant is determined by size, number of seeds per pod and number of pods / plant. The number of pods/ plant is determined by number of nodes / plant, number of pods / node. Each of the above components of yield are polygenic in inheritance and so it is complex. The duration is also determined by multiple genes. Maturity is correlated with height of the plant. Early varieties will be short is stature.



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2. Breeding varieties suitable for rice fallows

Short plants 65 -70 days duration. Suitable for inter cropping also in banana and sugarcane.

3. Breeding for quality

- a) Seed coat color and quality – Yellow, Black, Brown Green
- b) Oil content and quality
- c) Protein content.

a)Seed coat color and quality

May be yellow, green , black, brown or combination of all the above colours. For oil extraction yellow color is preferred because of high oil content



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where as black seeded varieties are low in oil content but high is protein content

b) Oil content and quality: Oil content is greatly determined by environment : Yellow seed coat varieties are rich in oil. Complex character determined by poly genes.

c) Protein content and quality:

Ranges from 35 to 50%, protein content is negatively correlated with oil content so while breeding for high protein content a compromise is to be made

4. Breeding for vegetable type AVRDC, Taiwan has evolved vegetable types

5. Breeding for forage type of soybean

6. Breeding for non-shattering type E.g. Lee, Co2

7. Breeding for YMV resistant lines Co 2



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Breeding Methods:

1. Introduction : EC 39821 from Taiwan - released as Co1
2. Pure line selection Co1
3. Hybridization and selection Clark
4. Mutation breeding.

Breeding centers: - Asian Vegetable Research and Development Centre (AVRDC) Taiwan - International Institute of Tropical Agriculture (IITA) Nigeria - In India National Research Centre for Soybean (NRCS) Indore (M.P)

Practical Achievements: Varieties: Bragg, Clark 63, Hardee, MACS 13 etc.



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Thank You