

COMMERCIALIZABLE SPECIALITY

SOYBEAN



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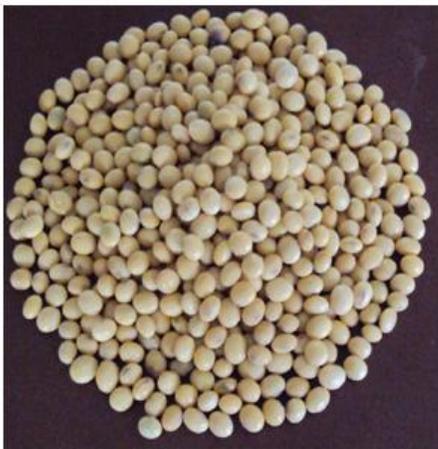
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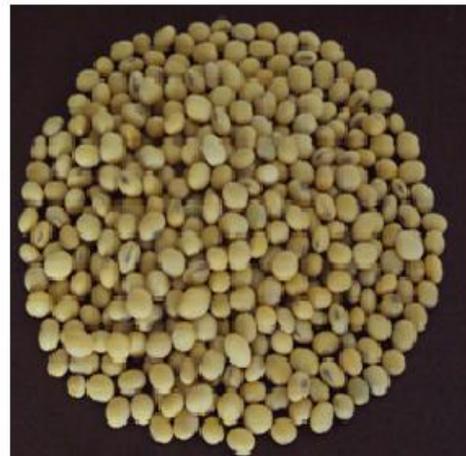
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SOYBEAN GENOTYPES FREE FROM KUNITZ TRYPSIN INHIBITOR: NRC101 and NRC 102:

Kunitz trypsin inhibitor an antinutritional factor present in soybean seeds needs to be inactivated while processing any soy product. Though inactivation of kunitz trypsin inhibitor can be achieved by boiling soybean seeds for minimum 20 min; however this entails extra effort at house hold level and incurs extra cost for the processing units. Research work of the past 8-10 years at Directorate of Soybean Research has led to the development of such type of soybean seeds which are genetically free from this antinutritional factor. This special type of soybean genotypes, NRC101 and NRC102, delivers special advantage to the processing industry. Seeds from these two genotypes can be mixed directly with the wheat in the ratio of 1:9 to manufacture soy fortified wheat flour. Boiling for 20 min. followed by drying which otherwise is a ‘must-to-do’ step for the seeds of conventional kunitz trypsin inhibitor containing soybean genotype prior to grinding with wheat to prepare soy fortified flour, is not needed in case of NRC101 and NRC102. Thus, the cost incurred to bring down the trypsin inhibitor level in different soy products, to meet the stringent requirements of the export can be saved. Besides, both the genotypes being early maturing genotypes (within 90 days) specially suit for those farmers who want to take potato for rabi crop.



NRC101



NRC 102

VEGETABLE TYPE SOYBEAN - NRC 105

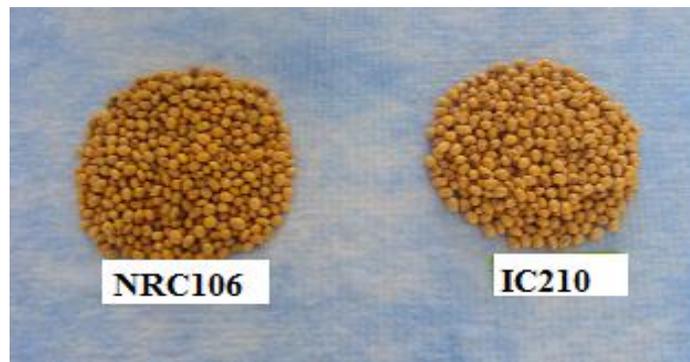
Vegetable soybean (NRC105) is a special type of soybean as the green seeds of this genotype, when the pods are completely filled but the pods are still green in colour, have sweet taste, flavor, and soft texture. For the consumption, the whole pods are boiled in water with a pinch of salt and the tender delicious seeds are directly popped as snacks. Alternatively, the green seeds can be cooked like green pea and chick pea. More importantly, the green seeds of this genotype at picking stage are free from flatulence factors as the synthesis of these components does not start by this time and high moisture content ensures very low level of kunitz trypsin inhibitor. Moreover, like green pea, vegetable soybean seeds can easily be assimilated as filling in Indian snacks like vegetable cutlets, sandwich, samosa, patties *etc.* In the cropping season, green pods picked from the field can be sold in the local market. Entrepreneurs can pack the whole green pods/ green seeds and store at -25 °C for 'round-the-year' market. Picking stage of NRC105 arrives in 60 days and the genetic potential of the green seed yield is 39q per hectare.



Green pods and seeds of NRC105 at picking stage

HIGH OLEIC ACID SOYBEAN: NRC 106 and IC 210

Soybean oil contains palmitic acid, stearic acid, oleic acid, linoleic and linolenic acid. Oxidative stability of vegetable oil is function of unsaturated fatty acids with the rate of oxidation of oleic acid, linoleic and linolenic acid 1:10:20. As oleic acid is least susceptible to oxidation, the oil extracted from such type of soybean seeds which have high oleic content compared to regular soybean has better oxidative stability and does not require partial hydrogenation for improvement in the shelf life. Regular soybean contains 23% oleic acid while genotypes NRC106 and IC210 identified/developed at DSR contain approximately 42% oleic acid. The oil extracted from these genotypes has better oxidative stability compared to the regular soybean varieties.



To know further:

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