INDIA NEEDS OILSEEDS MISSION

WITH END-TO-END SINGLE WINDOW SYSTEM FOR ENTIRE VALUE CHAIN

The per capita annual consumption of edible oil in India is 18 kg and it is increasing continuously. With about 65% of our annual requirement of 23 Million Tons (MT) being imported at a cost of Rs. 75,000 crore, we are far from being secure with the supply of edible oils. It is estimated that by 2030, the requirement will go beyond 30 MT and we may have to import 70% of it at a possible cost of more than Rs.1 lakh crore! Transformational changes are required in oilseeds cultivation.

60% of current domestic production of 8 MT comes from Soybean, Mustard and Groundnut. 25% comes from Rice bran, Cotton seed, Coconut and Oil Palm. 15% is contributed by Sunflower, Safflower, Sesame and other minor crops. Scale up of Bt cotton helped to triple cotton seed oil production from 0.5MT to 1.5MT.

Our yields are 35% to 50% of the global averages in different oilseed crops. Soybean yield is stagnant at 1221 Kg/ha against the global average of 2410 Kg/ha, and the best in the world (Brazil) of 2900 Kg/ha. Our Mustard yields are 1260 Kg/ha against global average of 2000Kg/ha. In Ground nut, it is 1360Kg/ha against the world average of 1950Kg/ha and the best (USA) of 4200Kg/ha.

Increasing yields will play a significant role in bridging the gap between demand and domestic production, increase farmers' incomes and save foreign exchange for the country. With every ton of oil produced in India, another ton of oilseed cake can be produced. This is a great source of protein for our cattle. It would be a boon to a protein-deficient country like India and a bonus of additional income to Indian oilseed farmers.

ABOUT THE AUTHOR

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Bottlenecks to productivity

Soybean, grown in 11 M Ha, is not a hybrid crop. Low seed replacement rate of 30% means farm saved seeds are used in 70% of the area every year. Lack of genetic vigour is one reason for lower yields. Since Soybean is a rain-fed crop, farmers are not sure of the crop and are reluctant to invest much.

There has been no strategic investment by the private sector due to lack of opportunity for return on investment. Breeding efforts have been confined to available germplasm in the country and remained in the domain of public research institutions. No major inflow of germplasm took place from outside the country and we use three decades old genetics. Advancement of varieties with higher genetic potential has been low. Pests and diseases, yield losses due to weeds and post harvest losses have had a negative impact. Finally, modern technological tools in breeding and GM traits have not been introduced in the country. We import GM oils but prevent our farmers from growing GM oilseeds. This is not only unfair but also unwise.

Since 2000, our yields have grown by 20% from 1000 Kg/ha to 1200 Kg/ha. Brazil has increased yields by 35% during the same period from 2200 Kg/ha to 2900 Kg/ha with the introduction of two generations of GM traits. Same is the case with new generation crop protection products. The first generation herbicide tolerant Soybean was introduced in 1996 in USA. It transformed Soybean cultivation in North and South America.

The technological revolution led by biotechnology bypassed India due to lack of strategic approach – both regulatory regime and policy environment.

Mustard – OP varieties are grown in more than 90% of the 8M Ha acreage. Hybrid development is slow. Gene pools are not well defined. Hybrid heterosis is low. Private industry has invested in developing hybrids while ICAR invested more in varietal development. Agronomic practices remain very old fashioned.

Globally Canola, a sister crop of Mustard, has undergone transformational changes due to the use of GM technology. In India, Delhi University developed a GM trait based Hybrid system for improved performance and yields. This has not yet received regulatory approval.

Dr Kaundinya writes short stories in his mother tongue Telugu. He calls himself an amateur cook and singer (if there are any takers). He loves Indian music

The Way Forward

1. Launch an Oilseeds Mission with end-to-end single window system for entire value chain of oilseeds. This shall double domestic production by 2030 and ensure fair return on investment for all participants.

2. Launch large scale world class national research projects under PPP between ICAR and private companies in Soybean, Ground Nut and Mustard. Germplasm reinforcement with elite lines from outside, high quality breeding, use of modern tools like genomics, gene editing and GM and hybrid development in mustard should be the components of these projects. IP protection for innovations and a well defined method of recovering returns on their investment for private industry are important.
3. Popularise healthy options with high oleic grade Sunflower, Soybean and Double Zero Mustard.
4. Oilseeds should replace rice and wheat in some states as a crop diversification programme to bring greater balance in the crop portfolio of the country. Farmers are assured of procurement of such oilseed crops at remunerative MSP by the government. Market linkages of farmers are to be deregulated so that the price discovery improves for them. Important that farmers are paid prices in proportion to the oil content of the grain. This will help in improving quality of grain in breeding and in production.
5. Importance of using high quality seed is to be recognized. Innovative business models to be introduced to produce highest quality seed for OP crops in oilseeds with private sector involvement and target a 100% SRR by 2030.
6. Modern agronomic practices like zero till to be promoted in the country to save soils from erosion and structural damage. Micro irrigation infrastructure with Hose Reel and Drip should be created at the largest scale through a PPP project covering the total oilseeds acreage, bringing certainty in farmers' lives.
7. A science based, transparent and predictable regulatory regime to encourage introduction of modern biotech tools and modern crop protection/nutrition products to be put in place. Traits with herbicide tolerance and insect resistance in Soy and hybrid system in Mustard to be launched along with water use efficiency trait in all oilseeds.
8. Large scale mechanization of oilseeds cultivation so that farmers can produce with less manual labour.

India can not remain import dependent for edible oil in post COVID era. Self reliance is the call of the day.