Preface

Around 250 years ago, groundnut was brought to India and is now regarded as a significant oilseed crop. India is fortunate to have agro-ecological conditions that are ideal for growing nine major oilseeds, including seven edible oilseeds (groundnut, rapeseed-mustard, soybean, sunflower, safflower, sesame, and niger) and two sources that are not edible (castor and linseed), in addition to a large number of other minor oilseeds and tree species that produce oil. The productivity of other oilseed crops in India, except castor, is among the lowest in the world. It is essential that as the population grows, per capita income rises as well, raising the standard of life and, consequently, the need for vegetable oils and fats. The most significant oilseed and food legume crop in tropical and subtropical climates is groundnut (*Arachis hypogaea* L.), which is grown on roughly 25 million hectares of land across 90 countries in various agroclimatic zones between 40^0S and 40^0N. According to estimates, over 75% of the groundnuts grown worldwide are used to extract oil, with the residue mostly going into confections, adding value, or creating other food goods. Around 82% of the groundnuts grown in India are used to make edible oil, 12% as seeds, and 5% as animal feed. Due to its drought tolerance, groundnut is typically planted in semi-arid environments where it frequently has nitrogen and mineral deficits and produces a low yield. This is probably the reason why researchers and farmers are not able to break the barrier of the stagnant yield in groundnut. It is an oil and energy-producing crop, but it is typically cultivated in energy-starved conditions with minimal input management and is malnourished in terms of minerals and other nutrients. Because of the high production costs and unstable market conditions associated with the conventional style of rainfed groundnut agriculture, it is a riskier business. Even if the crop responds well to the administration of nutrients, its poor yield is caused by the inadequate application of fertilizers.

However, the current trends in higher oilseed production in India point to the enormous technical development in crop protection, agronomy, and breeding science relevant to this crop. While understanding of production technique is equally important to a researcher as knowledge of the specifics of the crop he is studying. The data on oilseed crop productivity demonstrate that, despite outstanding scientific advances in breeding, crop yield, and crop protection, there remains a symptom of stagnation. Additionally, for continuous output levels, scientists need to share the most recent technologies and accounts of their work. This would highlight the region requiring more rigorous research and result in the correction of the produced technology's defect. To the best of my ability, I combed through a sizable volume of public data and chose and presented the most pertinent ones. As a result, several scientists provided assistance, which is greatly welcomed.

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