Foreword

Soybean is the fourth most widely grown crop in the world. Originally from China it is a major crop in the USA, Brazil, Argentina, China, and many other countries. The improvements undergone by soybeans are not only a self-success, but it also triggers new technologies to other crops and regions around the world. As a source of oil, biodiesel, etc., soybeans are currently grown from low to high latitudes.

This book addresses the most recent and best technologies applied to soybean breeding. Some of the authors such as Dr. Vernetti and Dr. Sedyiama were pioneers in shaping the current generation of soybean breeders in countries like Brazil. This is a great opportunity to celebrate. Dr. Francisco de Jesus Vernetti, a personal friend and former major advisor, introduced and encouraged me to work under Dr. Edgar E. Hartwig, the icon in soybean breeding. Dr. Hartwig's contribution to soybean breeding in the USA and Brazil cannot be overemphasized. Dr. Hartwig was the most prominent soybean breeder in history. He was the first scientist to adapt this crop to areas closer to the equator, understanding soybean flowering in short days. This trait, today called "long juvenile stage," is well studied and its genetic control well understood (a few recessive genes), which allowed its use to develop cultivars for new agricultural frontiers in countries like Brazil and elsewhere.

Brazil is the second largest soybean producer and this is due to the breeding done with this crop in the last 60 years. Some aspects distinguish the work done in Brazil, since the crop had to be adapted to marginal areas with diverse cropping systems. Brazilian breeders had the additional challenge to develop cultivars resistant to the highly aggressive and prevalent pests typical of tropical regions, besides dealing with the soil acidity and seed quality, among other defies.

Another interesting area is breeding for nutritional quality, especially for oil and protein, besides reduction of antinutritional factors.

The large genetic progress observed in the last decades was mainly due to the mechanization of the breeding operations in planting, evaluating, and harvesting field trails, besides the use of computer power increasing the ease and speed to organize and analyze data and spreadsheets.

The GM cultivars made it easier to control weeds and are very promising in pest control. Additionally, the genetic studies and detection of molecular markers will also contribute to soybean breeding in the near future.

As always, breeders are optimistic and I personally believe that traditional breeding, helped by new tools, will continue to be a great asset to soybean future.

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Soybean Breeding
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