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The following structure of the paper serves this purpose: The paper's second section provides an overview of genetic gain and its status as an indicator. In section, we discuss the context in which the value of genetic gain has been placed and the reasons why it has gained prominence in modern plant breeding. In the third section, we discuss the changing context in which genetic gain is used in international plant breeding. We focus on a number of modernizations that aim to make plant breeding more data-driven and a related set of changes in the knowledge-control regimes that structure international breeding networks. The fourth section returns to the idea of genetic gain and demonstrates how the elements that were used as variables in the calculation of the indicator are prioritized as investment targets. This has an effect on whether or not greater genetic gain contributes to major goals like the creation of climate-adaptive agriculture and how it does so [5]. The implications of accelerating genetic gain for seed systems are the subject of the fifth section, which focuses on how these commitments to greater speed are directly linked to visions of greater agricultural commercialization in the Global South. In conclusion, we expand our focus to the place that agronomic indicators play in the broader knowledge-control regimes of agricultural development and consider the questions that the aforementioned analysis raises for this particular field. We suggest ways to use indicators for agricultural development in a way that is understandable, responsive to stakeholders, and takes into account a wider range of agroecological diversity and sustainability goals and values.

[illegible]

Plant breeding is the science and practice of improving plants through controlled mating and selection. It involves various methods and materials to achieve desired traits and develop improved plant the potential to address malnutrition and improve human health. Discussions center around biofortification, the process of breeding crops with enhanced nutritional content. Plant breeding plays a vital role in developing crops that can adapt to changing environmental conditions. With climate change impacts, breeders aim to develop varieties that can tolerate temperature fluctuations, erratic rainfall, and shifting pest and disease patterns. Discussions focus on breeding for resilience, ensuring crop productivity and food security in a changing climate.

Plant breeding takes into account consumer preferences and market demands. Breeders work to develop crop varieties that meet consumer expectations for taste, appearance, texture, and other quality attributes. Discussions involve understanding and aligning breeding objectives with consumer preferences, promoting sustainable food systems, and addressing market demands. Plant breeding efforts also contribute to the conservation of genetic diversity in cultivated crops. By utilizing diverse germplasm resources and wild relatives, breeders preserve and harness genetic variation to develop improved varieties. Discussions revolve around the importance of maintaining genetic diversity for future breeding programs and mitigating the risks of genetic erosion.

Plant breeding, especially biotechnological approaches like genetic engineering, raises ethical and social concerns [10]. Discussions revolve around the safety, environmental impacts, and public acceptance of genetically modified crops. Balancing the potential benefits of new breeding technologies with ethical and social considerations is an ongoing topic of discussion. Intellectual Property Rights and Access to Genetic Resources surrounding intellectual property rights and access to genetic resources play a significant role in plant breeding. Breeders face challenges related to patenting, seed ownership, and fair benefit-sharing arrangements. Discussions focus on balancing intellectual property protection with the need for equitable access to genetic resources and the fair distribution of benefits.

Plant breeding has achieved remarkable results in improving crop traits, increasing yield, and addressing various agricultural challenges. Ongoing discussions encompass the development of sustainable and climate-resilient crop varieties, addressing emerging diseases and pests, ensuring equitable access to genetic resources, and navigating the ethical and social implications of new breeding technologies [11]. The continuous advancement and collaboration in plant breeding are essential for sustainable agriculture and global food security.

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In conclusion, plant breeding is a dynamic and essential field of agriculture and plant science. Through the application of various methods and the use of diverse materials, plant breeders have achieved significant results in improving crop traits, increasing yield, enhancing nutritional quality, and developing crops with resistance to diseases, pests, and environmental stresses. The outcomes of plant breeding have contributed to global food security, sustainable agriculture, and the adaptation of crops to changing environmental conditions. Improved varieties have provided higher yields, reduced crop losses, and increased resilience to biotic and abiotic stresses. Additionally, plant breeding has addressed nutritional deficiencies, enhanced consumer preferences, and promoted the conservation of genetic diversity.

However, discussions surrounding plant breeding continue to evolve. Ethical considerations, regulatory frameworks, intellectual property rights, and public acceptance of genetically modified crops