



ATSAF Academy
Academy for International Agricultural Research for Development

Junior Scientists Tandems

Final Report

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National University (Country)

Supervisor at National University:

International Agricultural Research Center (Country): International Maize and Wheat Improvement Center, Mexico

Supervisor at IARC: Dr. Francisco Pinto

Start and end date of stay at IARC/ GRI: April – September 2023

Title: Genotype x environment interactions in leaf properties and pigment composition in Tropical Bread Wheat

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Junior Scientists Tandem Program- ATSAF

Being awarded the ATSAF- Junior Scientists Tandem Program (JSP) scholarship for my internship at the International Agricultural Research Centre CIMMYT, Mexico, is a momentous achievement that fills me with immense joy and pride. I am sincerely grateful to the funding sponsors of ATSAF (Arbeitsgemeinschaft für Tropische und Subtropische Agrarforschung e.v.) and the entire selection committee for embracing my thesis proposal, thereby bestowing upon me the valuable funding opportunity through the Junior Scientists Tandem Program. The inclusion among the esteemed ATSAF scholarship holders for my internship is a privilege that I deeply cherish.

I express my heartfelt gratitude to my supervisor at CIMMYT, Dr. Francisco Pinto, whose generosity provided me with the chance to actively contribute to his research project centered on Genotype x environment interactions in leaf properties and pigment composition in tropical bread wheat. Dr. Pinto's guidance and mentorship were instrumental in shaping my research experience. Additionally, I extend my sincere thanks to my university supervisor, Prof. Dr. Folkard Asch at the University of Hohenheim, for the unwavering support extended during the initial phase of the internship and for expertly guiding my research work. Their collective support has played a crucial role in the success of my internship, and I am truly grateful for the opportunity to learn and grow under their mentorship.

Experience at International Maize and Wheat Improvement Center, Mexico

The internship program from April to September 2023, provided comprehensive exposure to cutting-edge agricultural research techniques at two key locations: the experimental station in Obregon, Sonora and the research station in El Batan, both under the auspices of the International Maize and Wheat Improvement Center (CIMMYT). This six-month period was divided into three months in Obregon and three months at CIMMYT headquarters in El Batan, Mexico.

Activities at Experimental Station, Obregon, Sonora: The first quarter of my internship was centered around engaging in activities at the Experimental Station in Obregon, Sonora. During this period, I actively participated in hands-on experiments, focusing primarily on meticulous measurements, especially through the application of remote sensing techniques. The experimental trials, which were particularly geared towards assessing heat tolerance, involved the careful collection of data from Candidates for Selection and pre-breeding trials. Notably, collaborative endeavours were a key aspect of this phase, with a specific focus on contributing to the comprehensive data collection for a broader panel. Under the guidance and supervision of PhD candidate Geckem Dambo, I played an integral role in supporting these collaborative efforts, gaining valuable insights into the collaborative nature of research and the importance of teamwork in scientific endeavours.



Technical Exposure and Equipment Familiarization:

Throughout the internship, I acquired a comprehensive understanding of various tools and equipment, expanding my technical proficiency. This included hands-on experience with advanced instruments such as Porometer Licor, ASD field spectrometer, Spad, and PRI PlantPen, along with mastering the precise procedures associated with leaf sampling. The significance of these tasks was underscored by the regularity of measurements, conducted on a weekly basis. As the scale of the experimental panels was extensive, collaboration with multiple assistants at the research station became imperative. Working in tandem with fellow interns and professionals not only honed my teamwork skills but also illuminated the collaborative essence of scientific research. This collaborative experience provided valuable insights, not only enhancing my ability to work harmoniously within a team but also contributing to a deeper understanding of how collective efforts contribute to the broader goals of advancing knowledge in the field.

Mentorship and Collaborative Environment:

The mentorship and collaborative environment during the internship were key elements that greatly enriched my experience. Dr. Pinto, serving as the orchestrator of the internship, played a pivotal role by providing unwavering support both within and outside the confines of work. Regular interactions with Dr. Pinto, members of the CIMMYT physiology team, engineers, and visiting scientists created a collaborative atmosphere where enriching scientific discussions thrived. Dr. Pinto's emphasis on cultivating a critical and proactive approach had a profound impact on my professional development, encouraging me to think analytically and take initiative in problem-solving.

Despite the intensity of the research station environment, it was characterized by vibrancy, creating a dynamic context that fuelled intellectual curiosity. Interactions with students hailing from various universities added another layer to the collaborative spirit, fostering a continuous exchange of knowledge. Engaging with peers from diverse academic backgrounds not only broadened my understanding of different perspectives but also enhanced the overall learning experience. The collaborative environment, both under Dr. Pinto's mentorship and within the research station, created a synergistic space where ideas flourished, and collective efforts propelled the pursuit of scientific excellence.

Continuous Support and Networking:

The fabric of my transformative internship experience at the International Maize and Wheat Improvement Center (CIMMYT) was woven with threads of unwavering support and invaluable networking opportunities. This support manifested itself consistently through the



steady guidance and mentorship provided by my esteemed supervisor at the University of Hohenheim, Prof. Folkard Asch, and the ever-supportive Dr. Alejandro Pieters.

Prof. Folkard Asch, as my academic anchor, played a pivotal role in steering the course of my research endeavours throughout the internship. His valuable insights, profound knowledge, and genuine commitment to my academic development were a constant source of motivation. His constructive feedback not only honed the technical aspects of my work but also instilled a sense of purpose and clarity in my research pursuits.

The visit of Dr. Alejandro Pieters to CIMMYT marked a significant juncture in my professional growth. Dr. Pieters' extensive expertise and collaborative spirit were instrumental in navigating the complexities of my project, providing a nuanced perspective that enriched my understanding of the subject matter. His visit served as a catalyst for fostering a dynamic exchange of ideas, addressing intricacies in research methodology, and refining the trajectory of my work.

Activities at CIMMYT Headquarters, El Batan:

The concluding three months of my internship were dedicated to working at CIMMYT headquarters in El Batan, where I immersed myself in the initial analysis of data. Regular consultations with Dr. Pinto not only offered valuable insights but also served as a compass for my work.

Moreover, my time at the Biosciences and Biotech lab was instrumental in broadening my skill set, offering a firsthand understanding of molecular breeding and biotechnology applications. Through collaborative initiatives with fellow scientists and lab assistants, I found myself in an environment that not only facilitated learning but also encouraged networking and the exchange of ideas.

In essence, the internship at CIMMYT provided an immersive and priceless experience, effectively bridging the gap between theoretical knowledge and practical applications. The exposure to diverse research settings, the collaborative spirit, and the mentorship I received have played a pivotal role in my academic and professional development, leaving an indelible mark on my growth trajectory.

Thank you to all the ATSAF team and sponsors for giving me this wonderful opportunity.

Kind regards,
Deena
