

## POSTER SESSION B: NEW TECHNOLOGIES

### Optimisation of seed harvest protocols of genebank accessions of a crop (durum wheat) and crop wild relatives

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Seed quality is influenced by numerous factors in the field before, during and after harvest before storage. Delayed drying of seeds after harvest may subject the seeds to high and/or fluctuating temperature and relative humidity (RH) in the field, and potentially rainfall, which may reduce seed longevity. This research questioned whether current routine post-harvest practices at the International Center for Agricultural Research in Dry Areas (ICARDA) are optimal for subsequent longevity, or can be improved. Seeds of cultivated and wild relatives of wheat were harvested from ears serially at maturity and divided into three treatments: (i) immediately from field to drying room (15°C; 15% RH) to minimise time in the field; (ii) left in the field until final harvest as a single sample in a cloth bag; and (iii) current ICARDA practice, cumulative harvests bulked within a common cloth bag in the field until the final harvest. Subsequent seed longevity in hermetic storage (45°C, 60% equilibrium RH) was improved by delaying the collection of seeds from the field in both cultivated and wild relatives of wheat in comparison to immediate removal from the field and drying. Hence, current ICARDA seed harvest practices do not damage subsequent seed longevity.

### Effect of climatic and farm management factors on the quality and nutritional value of produced wheat seeds

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The climate conditions and farm management methods of maternal plants may influence the quality of produced seeds of different crops, including the strategic crop wheat. They may also affect the nutritional value of seeds when they are used as grains in human nutrition and animal feed. In this research 100 seed lots of wheat were collected according to the *ISTA International Rules for Seed Testing* (ISTA Rules) from 100 different farms under different climate conditions in the northeast of Iran, during the summer of 2020. A questionnaire was completed by the farmers on the details of farm management at the time of seed collecting. The climatic data of the farms were obtained from the nearest synoptic climatological sites. The seed lots were stored under controlled conditions until the assessment of purity, thousand-seed weight, initial seed moisture content, seed health, germination and vigour were done according to the ISTA Rules. The relationship between climatological parameters including temperature, sunshine hours, rainfall, relative humidity, and farm management methods such as fertiliser amount, irrigation, and pest and disease control, with the quality of produced seeds are discussed. The effects of the above parameters on human nutritional values of the seeds including minerals, protein percentages and gluten are also considered. This research could be the start of a guideline for where to produce high-quality wheat seeds and how to deal with seed production in future challenging climate changes.

Handwritten notes in Arabic script, including the name 'Rama Jawad' and other illegible text.