

Evidences

Study #4356

Contributing Projects:

- P1372 - Identify wheat lines resistant to nematodes and / or crown rot (*Fusarium p.*)
- P1936 - Evaluate the effects of tillage practice, residue management and crop rotation on soil, crop and environment

Part I: Public communications

Type: Program/project adoption or impact assessment

Status: Completed

Year: 2021

Title: Improving Integrated Management of Cereal Cyst Nematodes and other diseases in Central Western Asia and North Africa (CWANA)

Commissioning Study: WHEAT, CABI

Part II: CGIAR system level reporting**Links to the Strategic Results Framework:**

Sub-DOs:

- Increased above- and below-ground biomass for carbon sequestration
- Agricultural systems diversified and intensified in ways that protect soils and water
- Closed yield gaps through improved agronomic and animal husbandry practices

Is this OICR linked to some SRF 2022/2030 target?: Too early to say

Description of activity / study: Though nematodes cause ca. US\$80 - 118bn p.a. in damage to crops globally, wheat growers in CWANA do not recognize nematodes as a problem; most do not know which nematodes are reducing their yield, which is why the term "hidden enemy" perfectly applies. Consequently, Integrated Management of nematodes (INM) is not practiced in the entire region. Nematode-induced yield losses are simply accepted.

Yield reductions in wheat due to Cereal Cyst Nematodes (CCN) in CWANA could be lessened by improving growers' awareness and understanding of the concept of INM, in a region where practicing winter wheat mono-culturing is the norm. Management of cereal nematodes, especially CCN, would involve an integrated approach (e.g. crop rotation, genetic resistance, crop nutrition, and appropriate water supply), with potential benefits in addition to yield.

This study identifies practicable management strategies based on scientists' experiences in each region for a targeted disease.

Geographic scope:

- Global

Comments: Study explored validated, region/disease-specific root rot management options based on breeders and pathologists experiences in Central West Asia North Africa (CWANA region).

Links to MELIA publications:

- <https://www.cabi.org/bookshop/book/9781789247541>