

# Evaluation of quality protein maize inbred lines for resistance to maize weevil Sitophilus zeamais (Coleoptera: curculionidae) and other important agronomic traits

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# Abstract:

Maize is the most important crop in Ethiopia since it is a staple food crop which is widely grown by most smallholder farmers. The necessity to increase maize production cannot be over emphasized; in Ethiopia it ranks first in terms of production, productivity, number of producers and next to teff in area coverage. Subsistence maize farming accounts for more than 95% of the total maize area and production, with 75% of all maize produced being consumed by the farming household. Despite its high productivity, maize grain is a poor source of balanced protein for human consumption. QPM is a variety of maize with elevated levels of the amino acids tryptophan and lysine, which translates to a nutritionally-beneficial protein quality of double typical maize. This fact allows QPM maize to have an impact on the nutrition of families subsisting on diets consisting mainly of maize. Maize weevil is the cause of major storage loss and significantly affects household food security of the small-holder sector in Ethiopia.

### **Biography:**

Girma Demissie is an agricultural entomologist by profession and working for Ethiopian Institute of Agricultural Research, Holetta Agricultural Research Center. He received his BSc and MSc from Haramaya University, and received his PhD from Maharana Pratap University of Agriculture and Technology, India. Since 2002, he has researched on maize entomology at Bako. He was in charge of the maize entomology research projects conducted at national level from 2002-2011. From 2008 to 2011 he was served as country coordinator of CIMMYT funded "Insect Resistant Maize for Africa" project. From 2016 to May 2018 he was served as coordinator of ICIPE funded Integrated Termite Management project. Since 2017 he has also been serving as coordinator of FAO and PRC funded Fall Armyworm research projects. In addition to his professional expertise he was served as Director of Bako National Maize Research Center from Feb. 2015 to Feb. 2018. He has wide ranging experience in administering, leading and coordinating several research projects. Besides he has good skills in establishing strong partnership with various national and international stakeholders in obtaining grants, collaborative research work



and capacity building. Dr. Girma has been doing substantial research on maize protection and authored or co-authored several proceedings and over 18 publications in peer reviewed referred journals.

# Publication of speakers:

- 1. Abate T, Shiferaw B, Menkir A et al (2015) Factors that transformed maize productivity in Ethiopia. Food Secur 7:965–981.
- 2. Abate T, Fisher M, Abdoulaye T et al (2017) Characteristics of maize cultivars in Africa: how modern are they and how many do smallholder farmers grow? Agric Food Secur 6:30.
- 3. Gupta, H., Agrawal, P., Mahajan, V et al (2009).Quality protein maize for nutritional security: rapid development of short duration hybrids through molecular marker assisted breeding. CIMMYT Institutional Multimedia Publications Repository.
- Vowotor KA, Meikle WG, Ayertey JN, Markham RH (2005) Distribution and association between the larger grain borer Prostephanus runcates (Horn) and the maize weevil Sitophilus zeamais Motschulsky in maize stores. J Stored Prod Res 41:498–512.
- Tadesse A (2003) Studies on some non-chemical insect pest management options on farm-stored maize in Ethiopia. Dissertation, Giessen University, Germany.
- 6. Demissie G, Teshom A, Abakemal D, Tadesse A (2008) Cooking oils and "Triplex" in the control of Sitophilus zeamais Motschulsky (Coleoptera: curculionidae) in farmstored maize. J Stored Prod Res 44:173–178.

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