REPORT ON CONFERENCE ATTENDED:

BIOCONTROL OF PLANT DISEASES: “FROM THE FIELD TO THE LABORATORY AND BACK AGAIN”

WHEN: June 15-18, 2014

WHERE: Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden

WHO: Yeshitila Degefu, Senior Research Scientist, MTT Oulu, BEL/ABT

First of all, I would like to thank ABT/ MTT Oulu for giving me the opportunity to attend the conference on the biocontrol of fungal and bacterial Plant Pathogens. The trip was financed by the PotatoNow project (42993002). The conference was very interesting and gave me the opportunity to learn the advances made over the years regarding the biological control of plant diseases. As a researcher actively involved in finding an integrated and sustainable solutions to plant disease problems, it was very enriching experience for me to participate in the conference. I will briefly highlight the collective ideas of the major topics discussed in the conference with summary of the take home messages from the panel discussion session. The conference was well attended with 150 participants representing the seven continents. There were a total of thirty five oral and 72 poster presentations during the three and half day conference. The studies presented covered biological control of plant diseases in horticulture, viticulture, agriculture and Forestry and they were focused on

a) success and problems encountered in biological control
b) how to obtain effective biocontrol organisms
c) biological control in practice: putting the agent to work
d) interactions between the plant, the pathogen and the beneficial organisms

In addition, a panel discussion was held in order to review the core items covered in the conference and recapitulate other practical issues related to the use of biological control of plant diseases. I will summarize the opinions and conclusions put forward under the six major panel discussion points presented below.

1. **How do we see the future for exploiting biocontrol measures in plant production: agriculture, horticulture, silviculture, viticulture, home gardening etc?**

   It was the opinion of the panelists and the experts participated that the future is bright for biocontrol. The conclusion was based on the following justifications.

   a) Organic production is expanding.
b) There will be less agrochemicals for disease control in the market because of the ban on agrochemicals
c) Tools for mass production biological products (formulation, fermentation etc) are available; therefore, the bioindustry will be able to produce more efficiently.
d) Biocontrol is becoming more reproducible

2. **Will biocontrol play an important role in Integrated Pest Management (IPM) in the future?**

   Biological control will be an important component of sustainable agriculture. However, whereas the intention is great and there is space for biocontrol in IPM though it is not there yet.
Furthermore, consumer preference and zero tolerance for pesticide residues in food will call for biocontrol in IPM.

3. The increasing interest from big agrochemical companies in buying the small biocontrol companies, how will that influence the future development of biocontrol?
The subject was treated with caution. While there was a general feeling that the buying of small biocontrol companies by the giant agrochemical companies is an indication of growing interest in biocontrol, there was also an expression of fear that the action might have some negative consequences on the progress of biocontrol.

4. New molecular methods (-omics), where do we see the opportunities and pitfalls for biocontrol?
The general understanding was that –omics (genomics, proteomics, transcriptomics, etc) provide powerful tools to facilitate research and development in biocontrol agent. There are many open questions in biological control product where -omics are believed to provide solutions. It is, therefore, necessary to train people in this broad spectrum area to address the long standing challenges.

5. Do we have the right focus in biocontrol research for exploring its full potential?
It was emphasized that there exists a knowledge gap. What else the biological agents do? Or what is the efficacy of the agent to other targets? are questions often raised. These need to be resolved. In addition, it was also suggested that the scope of a biological agent is redefined to include abiotic agents and should not be limited to only biotic agents. Registration and commercialization of a biological agent is mentioned to be one of the bottlenecks in biocontrol developments. It was, therefore, stressed that researchers need to consider the registration phase and data requirements during the research phase.

6. How do we overcome barriers in the chain from research to practical implementation of biocontrol?
It was pointed out that there is a knowledge gap concerning the mode of action of biological agents and peoples’ expectation about success in biological control. What does success in biocontrol look like? Is success only 100% control? Will 85% control be adequate? The need to provide education about principles and practices of biocontrol at the grass root level was emphasized.