larvae. The researchers sampled trees for wasp broods at six forest sites near Lansing, Michigan. By the fall of 2012, the proportion of sampled trees with one or more broods of *T. planipennisi* increased from 33% to 92% in the plots where the wasps were released. Similarly, the rates of parasitism on the EAB increased from 1.2% in the first year after the parasitoid releases to 21.2%.

Blood-sucking arthropods cause annual global animal industry loss just from ticks estimated at US$ 7 billion (FAO, 1984). Despite the economic need, the entomological work and resulting available bio-control for human and veterinary entomology is lagging far behind plant pest research. Entomopathogenic fungi are excellent candidates as bio-control agents. Entomopathogenic fungi are major pathogens of ticks in nature, causing the death of up to 50% of some tick species. Several fungi species have shown great potential as tick biocontrol agents. Yet, anti-tick commercial biocontrol agent is still not available. A recent study in Israel conducted by *M. SAMISH, G. GINDIN and I. GLAZER ARO from The Volcani Center,* showed that spraying of *Metarhizium anisopliae* spores on grass, infested with *Boophilus annulatus* ticks resulted in 100% tick mortality within three weeks. Importantly, most females were killed before laying eggs. Further development of our study may lead to the production of *Metarhizium*-based anti *Boophilus* products.

A new method for mass production of oligosaccharin has been developed by Mr. Zhu Yuliang, the professor of China Nanjing University of Technology enabling the industrialized production of the bio-pesticide in China. Oligosaccharin acts as a kind of botanic immune activator made of pure glucose. It activates the immune system of plants to produce phytoalexin against infection, being very effective for prevention and control of rice blast, cotton fusarium wilt and other crop diseases, as well as for regulation and facilitation of growth of plants. Professor Zhu has made innovative improvement to the synthetic process via the use of less-protected sugar as raw material for oligosaccharide synthesis, which greatly simplifies the synthesis procedure and enables easier achievement of pure chemical compound with uniform composition at a cost savings of 30% compared to available processes. Oligosaccharin is now brought into mass production by a biotechnical company based in Nanjing, China. It is the world first botanic immune activator producer supported by its own intellectual property rights.

A study conducted by the University of Western Australia detected 79 strawberries proteins that are resistant to *Fusarium oxysporum*, one of the main fungal diseases that affect strawberry production worldwide. The analysis was conducted in the Festival and Camarosa varieties and opens the field for the development of resistant varieties.

The Mexican Ministry of Agriculture announced late May that it has finished the campaigning against the New World screw-worm fly (*Cochliomyia hominivorax*). This worm feeds on live animals and humans and entered the Mexican territory in 1972. The biological control method adopted was the liberation of sterile flies. A specific production center was built in 1974 in Tuxtla Gutiérrez, Chiapas State. Based on this method the plague was increasingly controlled, expanding the free states every year. Finally, in May 2013 this plague has been officially eradicated from Mexico and the sterile fly production facility was closed. This eradication method has been implemented by other Latin American and African countries.

Dov Prusky, from the Department of Postharvest Science of Fresh Produce, the Volcani Center in Israel recently released some new findings: Many postharvest pathogens alter the pH of their infected target as a prerequisite for colonizing, and developing in it. *Colletotrichum gloeosporioides* and *Alternaria alternate*, for example, increase the pH of infected avocado and mango fruits by local secretion of ammonia, causing 2 pH units increase in the colonized fruit tissues**.** *Penicillium spp***.** and *Botrytis cinerea*, on the other hand, acidify apples and citrus fruit tissues to colonizing them, by secretion of gluconic- and oxalic- acids, reducing their pH by up to 1 pH unit**.** The research of Prusky proves that postharvest diseases of avocado and mango fruits can be controlled by pre- and/or postharvest pH modulation treatments, which may be carried out in the orchard and in the packinghouse. These treatments markedly reduce the initiation and the rate of development of the infecting fungi, and simultaneously, enhance the efficacy of the fungicides used to control these diseases, and reduce their phytotoxicity. Therefore, these treatments greatly help growers to conform to new, strict regulations, regarding fungicide residues in their produce.

Ally Harari from the Department of Entomology at the The Volcani Center in Israel have successfully studied the Effects of radiation on inherited sterility in the European grapevine moth (*Lobesia botrana*). Sterile insect technique (SIT) is an alternative, environmentally friendly method for controlling insect pests. In the *Lepidoptera*, a low dose of gamma irradiation causes inherited sterility (SIT-IS), leading to full sterility in females, but only partial sterility in males, which successfully compete with wild males for mates. We found that irradiation of the pupae did not affect their emergence rate, flight ability or male flight to sex pheromone, or male or female mating success. A major effect of the irradiation treatment was a reduced number of pupa offspring, and a smaller number of females reaching pupation. The effect of irradiation on males' partial sterility was reflected in the reduced number of F1 offspring and lower number of F2 descendants. We hence, demonstrated the feasibility of controlling *L. botrana* using SIT-IS.

Resistance development to *Bacillus thuringiensis* in GMO crops is directly related to effective use of refuges according to a study published in Nature Biotechnology by a team from the University of Arizona. Analyzing data from 77 studies of 13 pest species in eight countries on five continents, the researchers found well-documented cases of field-evolved resistance to Bt crops in five major pests as of 2010, compared with only one such case in 2005. Their report indicates that in the worst cases, resistance evolved in 2 to 3 years; but in the best cases, effectiveness of Bt crops has been sustained more than 15 years. The research concludes that evaluating two factors can help to gauge the risk of resistance before Bt crops are commercialized. If the pest's resistance is likely to be recessive and resistance is rare initially, the risk of rapid resistance evolution is low. In such cases, setting aside a relatively small area of land for refuges can delay resistance substantially. When higher risk is indicated, due to resistance being dominant, then much larger refuges and other resistant management techniques are required to delay Bt resistance development.