

State of Israel/Ministry of Agriculture  
& Rural Development  
Agricultural Research Organization  
The Volcani Center  
**Office of the Director**  
Associate Director for Academic Affairs  
& International Cooperation



מדינת ישראל/משרד החקלאות  
ופיתוח הכפר  
מינהל המחקר החקלאי  
מרכז וולקני  
**לשכת ראש המינהל**  
ממונה על ענייני אקדמיה  
וקשרים בינלאומיים

## Program for Postdoctoral Fellowship Awards in Agriculture

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| Internal Ref #<br><b>32</b>  | Title of Research Project:<br><br><b>Elucidation of signaling pathways that regulate ethylene-induced leaf and flower abscission of agriculturally important plants</b> |
| Project Leader: <b>Dr. Shimon Meir</b>   | Email : <a href="mailto:shimonm@volcani.agri.gov.il">shimonm@volcani.agri.gov.il</a><br>Phone : 972-3-9683667; 972-50-6220667   |
| Institute: <b>Postharvest and Food Sciences</b>  |   |
| Department: <b>Postharvest Science of Fresh Produce</b>  |   |
| The research team (other scientists): <b>Dr. Amnon Lers</b>  |   |
| Short Description of Research Project (3-5 lines):<br><b>The aim of this project is to continue our previous research in understanding the molecular events leading to tomato floral abscission. In this project we will (1) complete the functional analysis of the stably transformed tomato plants with T2 lines, and perform transcriptome analysis using custom abscission-specific microarrays; (2) perform transcriptome and proteome analyses to extend the earlier gene expression studies, to identify transcripts and proteins that are highly specific to the separation layer prior to the onset of abscission; <u>Methodology</u>: use of Next Generation Sequencing (NGS) of mRNA and preparation of a custom tomato abscission microarray to test altered gene expression in transgenic plants. Tandem mass spectrometry (LC-MS/MS) of protein extracts from leaf and flower tissues and their abscission zones (AZ) to identify the proteome of the AZ before and during abscission. AZ-specific gene promoters will be used in stably transformed tomato plants to reduce non-target phenotypes.</b> |   |
| Required Qualifications of Visiting Scientist:<br><br><i>Education:</i> <b>Ph.D. in biology</b><br><br><i>Scientific Experience:</i> <b>Background in plant physiology, abscission, plant hormones, microscopy, proteins and enzymology.</b><br><br><i>Abilities and Skills:</i> <b>Technical skills covering: Molecular biology, Biochemistry, Proteomics, Transgenics, Bioinformatics, Microscopy and computer proficiency. To conduct an independent research, including planning of the experimental system, performing the experiments and writing reports and papers.</b>  |   |

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