

# Report of a Vegetables Network

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## **Current status of the Solanaceae collection in Azerbaijan**

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The main vegetable growing regions in Azerbaijan are Lankaran-Astara, Quba-Khachmaz, Ganja-Qazakh and Absheron.

The Azerbaijan Research Institute of Vegetable Growing and the Genetic Resources Institute of the Azerbaijan National Academy of Sciences are engaged in collecting, studying and conservation of vegetable genetic resources.

The Azerbaijan Research Institute of Vegetable Growing was established in 1965. Since 1965, 300 accessions of tomato (*Lycopersicon esculentum* Mill.), 500 accessions of eggplant (*Solanum melongena* L.), and 300 accessions of pepper (*Capsicum annuum* L.) have been collected. About 35 new varieties of tomato, 10 of eggplant and 4 of pepper were created through breeding programmes. But breeders lost a lot of accessions during breeding processes, mainly because they did not have adequate conservation conditions.

The Genetic Resources Institute (GRI), under the Azerbaijan National Academy of Sciences, was established in 2003. It deals with the introduction, documentation and conservation of the flora and fauna biodiversity of Azerbaijan, and the utilization of genetic resources for food and breeding purposes. The National Genebank was established at this Institute for the medium- and long-term conservation of plant genetic resources.

The Solanaceae collection in the National Genebank contains 103 accessions belonging to the genera *Lycopersicon*, *Solanum* and *Capsicum* originating from Azerbaijan and other countries. All accessions are maintained under medium-term storage conditions. The collections include both determinate and indeterminate growth types. The current status of the collection is shown in Table 1.

The accessions maintained in the National Genebank, as well as newly obtained accessions, are regenerated at the experimental fields of Institute, depending on the age and amount of seeds. The technological properties, effect of photosynthesis on yield, resistance of accessions to biotic and abiotic stress factors such as drought, salinity and various diseases are studied in the laboratories. The resistant accessions are selected and recommended for use in the selection process as donor plants.

Collecting expeditions are organized each year in different regions of Azerbaijan and neighbouring countries to collect local forms and wild relatives.

The Solanaceae collection is being evaluated for morphological, biochemical, physiological, agronomical traits and economic characters, and for resistance to various biotic and abiotic stress factors.

**Table 1.** Current status of the Solanaceae collections in the National Genebank of Azerbaijan

| <b>Genus / species</b>         | <b>Country of origin</b>         | <b>No. of accessions</b> |           |
|--------------------------------|----------------------------------|--------------------------|-----------|
| <i>Lycopersicon esculentum</i> | Azerbaijan                       | 20                       |           |
|                                | Belarus                          | 1                        |           |
|                                | Canada                           | 1                        |           |
|                                | France                           | 1                        |           |
|                                | Italy                            | 2                        |           |
|                                | Kyrgyzstan                       | 1                        |           |
|                                | Moldova                          | 1                        |           |
|                                | The Netherlands                  | 1                        |           |
|                                | Russian Federation               | 11                       |           |
|                                | Ukraine                          | 3                        |           |
|                                | USA                              | 1                        |           |
|                                | <b>Total <i>Lycopersicon</i></b> |                          | <b>43</b> |
| <i>Solanum melongena</i>       | Australia                        | 1                        |           |
|                                | Azerbaijan                       | 4                        |           |
|                                | Burundi                          | 1                        |           |
|                                | Bulgaria                         | 1                        |           |
|                                | China                            | 1                        |           |
|                                | France                           | 1                        |           |
|                                | Ghana                            | 1                        |           |
|                                | India                            | 5                        |           |
|                                | Iraq                             | 1                        |           |
|                                | Israel                           | 1                        |           |
|                                | Japan                            | 2                        |           |
|                                | Kyrgyzstan                       | 1                        |           |
|                                | The Netherlands                  | 1                        |           |
|                                | Nepal                            | 2                        |           |
|                                | Portugal                         | 1                        |           |
|                                | Russian Federation               | 3                        |           |
|                                | Ukraine                          | 1                        |           |
|                                | USA                              | 1                        |           |
|                                | <i>S. nigrum</i>                 | Azerbaijan               | 1         |
|                                | <b>Total <i>Solanum</i></b>      |                          | <b>30</b> |
| <i>Capsicum annuum</i>         | Netherlands Antilles             | 2                        |           |
|                                | Australia                        | 1                        |           |
|                                | Azerbaijan                       | 4                        |           |
|                                | Canada                           | 1                        |           |
|                                | China                            | 1                        |           |
|                                | Colombia                         | 1                        |           |
|                                | Hungary                          | 2                        |           |
|                                | Japan                            | 1                        |           |
|                                | Moldova                          | 1                        |           |
|                                | Russian Federation               | 14                       |           |
|                                | Taiwan                           | 1                        |           |
|                                | British Virgin Islands           | 1                        |           |
|                                | <b>Total <i>Capsicum</i></b>     |                          | <b>30</b> |
| <b>Total Solanaceae</b>        |                                  | <b>103</b>               |           |