



Высокопродуктивные растения для пчеловодства *Леонора Адамчук Валерий Броварский*

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High Productive Plants for Beekeeping

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in the Socio-Economic Rural Development

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Textbook presents the results of research and educational institutions and experts involved in the international network **AgroBioNet** oriented for the realization of international research, education and development program entitled "Agrobiodiversity for improving nutrition, health, and life quality" which solves the problems of preservation, assessment and use of traditional, less known, less-used and forgotten kinds of plants.

In this textbook are also presented results from the solution of research projects that are supported by the Operational Programme Research and Development of the European Regional Development Fund:

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RESUME

Leonora Adamchuk, Valerii Brovarskyi High Productive Plants for Beekeeping

A feature of apiculture sphere is the close relation between feed provision and productivity of bee families. This is because the main products obtained from bees (honey, bee pollen and bee bread) are their food. Unlike cattle, bees must be provided with a fodder base, instead of feed itself. That is because the bees prepare and process it into the concentrate they need. It is acceptable to feed the bees manually, during the periods when the natural feed sources are absent. However, it is irrationally and economically unprofitable to fully provide bee families with artificially prepared feed. In this case the obtaining of natural products from bees are excluded.

The major sources of feed for bees and, consequently, for products of the sphere are flora. The volumes of nectar and bee-pollen, produced by plants are not equal and differ in the range of one species. Melliferous plant is considered to be high productive if there can be obtained more than 100 kg/ha honey from it inclusively. The products of bee-keeping can be received from the array of plants of one species, for example, from agricultural crops, such as sunflower, buckwheat, clover, as well as from natural populations of wild-growing species. The key to keeping healthy bee families is to use the planet's overall biodiversity. Thus, alongside with the nectar, the feed, gathered from different plants includes compounds and elements, necessary for regular vital activity of bees. At the same time, there is a necessity to introduce the crops of wild-growing melliferous species into the agricultural crops for crop rotation diversity, cultivation specifically for bees or using soils inappropriate for agricultural production.

This book is dedicated to the following high productive plants – *Ammi visnaga* (L.) Lam., *Borago officinalis* L., *Melilotus albus* Medik., *Coriandrum sativum* L., *Silybum marianum* (L.) Gaertn., *Carthamus tinctorius* L., *Phacelia tanacetifolia* Benth., *Melilotus officinalis* (L.) Lam., *Echium vulgare* L., *Valeriana officinalis* L., *Reynoutria sachalinensis* (F.Schmidt) Nakai., *Origanum vulgare* L., *Dracocephalum moldavica* L., *Solidago canadensis* L., *Epilobium angustifolium* L., *Hyssopus officinalis* L., *Galega orientalis* Lam., *Sanguisorba officinalis* L., *Agastache foeniculum* (Pursh) Kuntze., *Melissa officinalis* L., *Echinops sphaerocephalus* L., *Leonurus quinquelobatus* Gilib., *Polemonium caeruleum* L., *Onobrychis viciifolia* Scop., *Echinacea purpurea* (L.) Moench., *Silphium perfoliatum* L., *Cichorium intybus* L., *Lonicera tatarica* L., *Thymus serpyllum* L., *Salvia officinalis* L., *Lycium barbarum* L.

The description of species includes their botanical characteristics, main chemical composition, cultivation and growing technique. It is specified the value of the plants for apicultural use – nectar, honey and bee pollen production efficiency, the properties of honey and the characteristic of pollen grains from different types of plants.

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