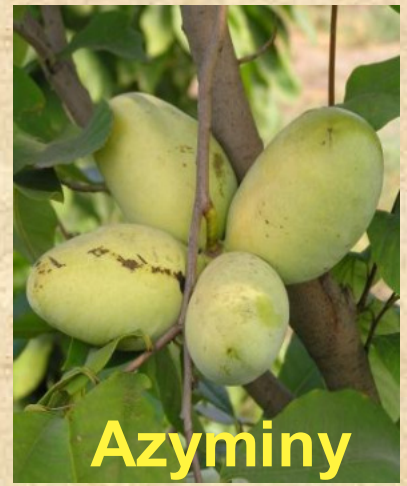
Dahlia varieties created in NBG

As to fruit-bearing plants, about 400 species from well-know in the world 850 ones, concerning 50 genera, have been introduced in Ukraine. Only two monotypic species Cydonia Mill and Mespilus L. had exhausted reserve for selective work, while for the majority of species this reserve remained to be large.



It was shown reproductive ability and adaptive new, of rare fruit plants, estimated their breeding potential. By analytical and synthetic selection is created and prepared for sort testing new varieties of Actinidia, quince, azyminy, dogwood, peach, henomeles, honeysuckle and others.

Different varieties Actinidia

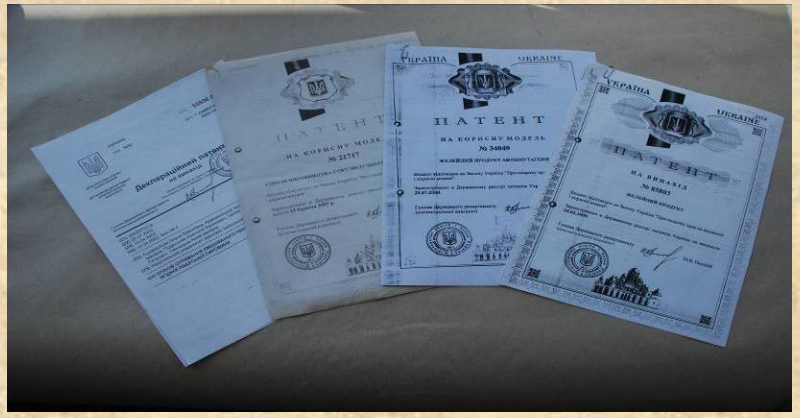
Different varieties Henomeles


Стартовый

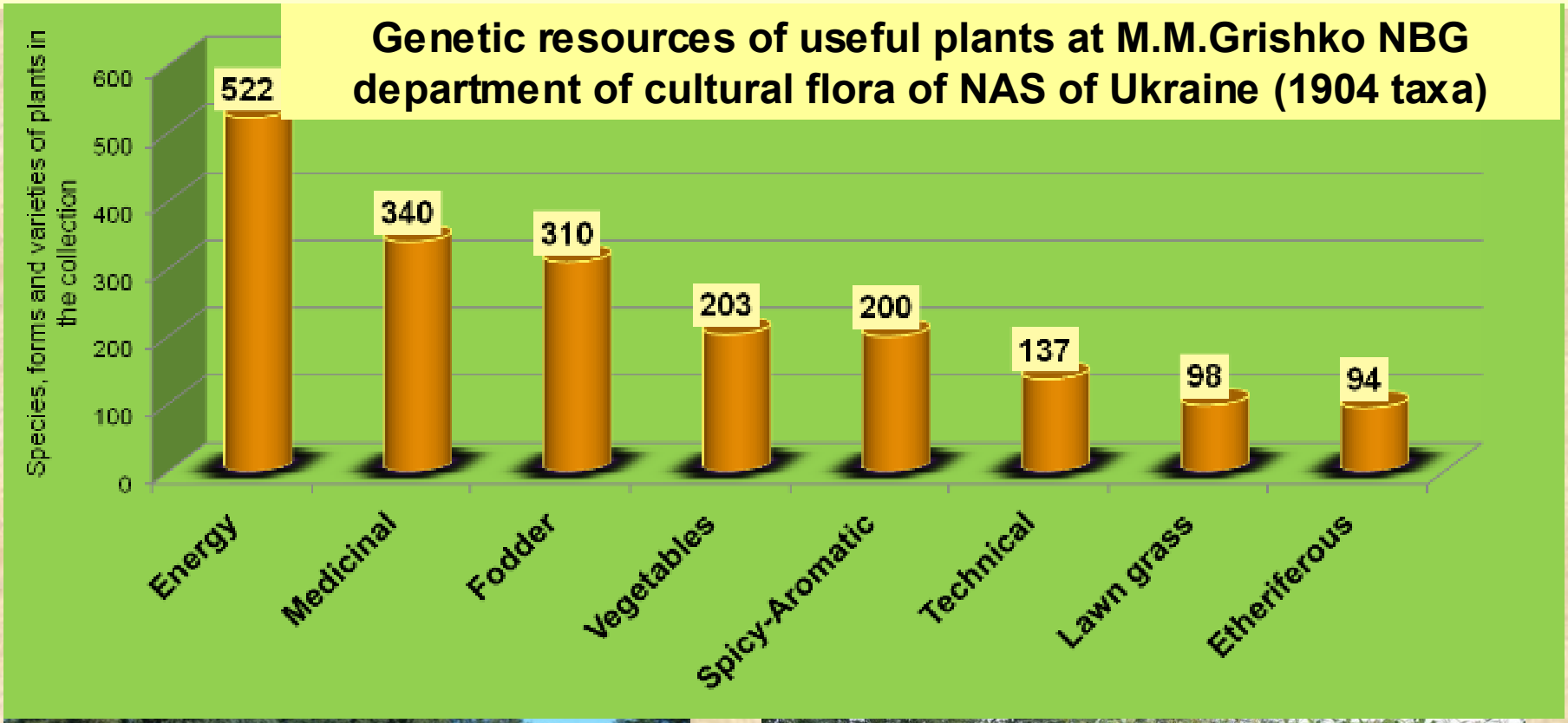

Quince


Different varieties Peach

A comprehensive approach is the waste processing plant material with the release of various substances, as the basis for new functional food health care products with diverse properties



A unique, one of Europe's largest collection of useful plants was created in M.M.Grishko NBG. The collection includes about 2,000 taxa (in the last period it 5 increased times). An important part of the "Collection Fund of Energy and aromatic plants" collection is included as the objects of national heritage. These collections are the basis for the development of breeding research in Ukraine, new varieties of plants and the creation of targeted collections in other institutions of Ukraine.



The gene pool of useful plants in M.M.Grishko National Botanical Garden of NAS of Ukraine preserved in the collections of living plants, seed bank and a herbarium funds

Collection sites of oil plant species

Together NBG and the Institute of Plant Physiology and Genetics NAS of Ukraine established breeding new crops and seed varieties that can extend their implementation in Ukraine.

Demonstration area in agricultural production "Glevaha" Vasylkiv district

Biodiversity of NBG useful plants is widely used in teaching and educational process

Collection areas of useful crops at Agronomic Experimental Station at National University of Life and Environmental Sciences of Ukraine

Experimental Field of National University of Life and Environmental Sciences of Ukraine, Kyiv

The important theoretical results of our research are:

selection of highly adaptive producers with a broad ecological plasticity;

preservation and enrichment of the plant diversity and optimization of the production process with phytocoenosis, introduction, biotechnology, plant breeding methods;

development of scientific bases for breeding of new plants and improving existing forms in order to create plants with desirable biological and economic parameters;

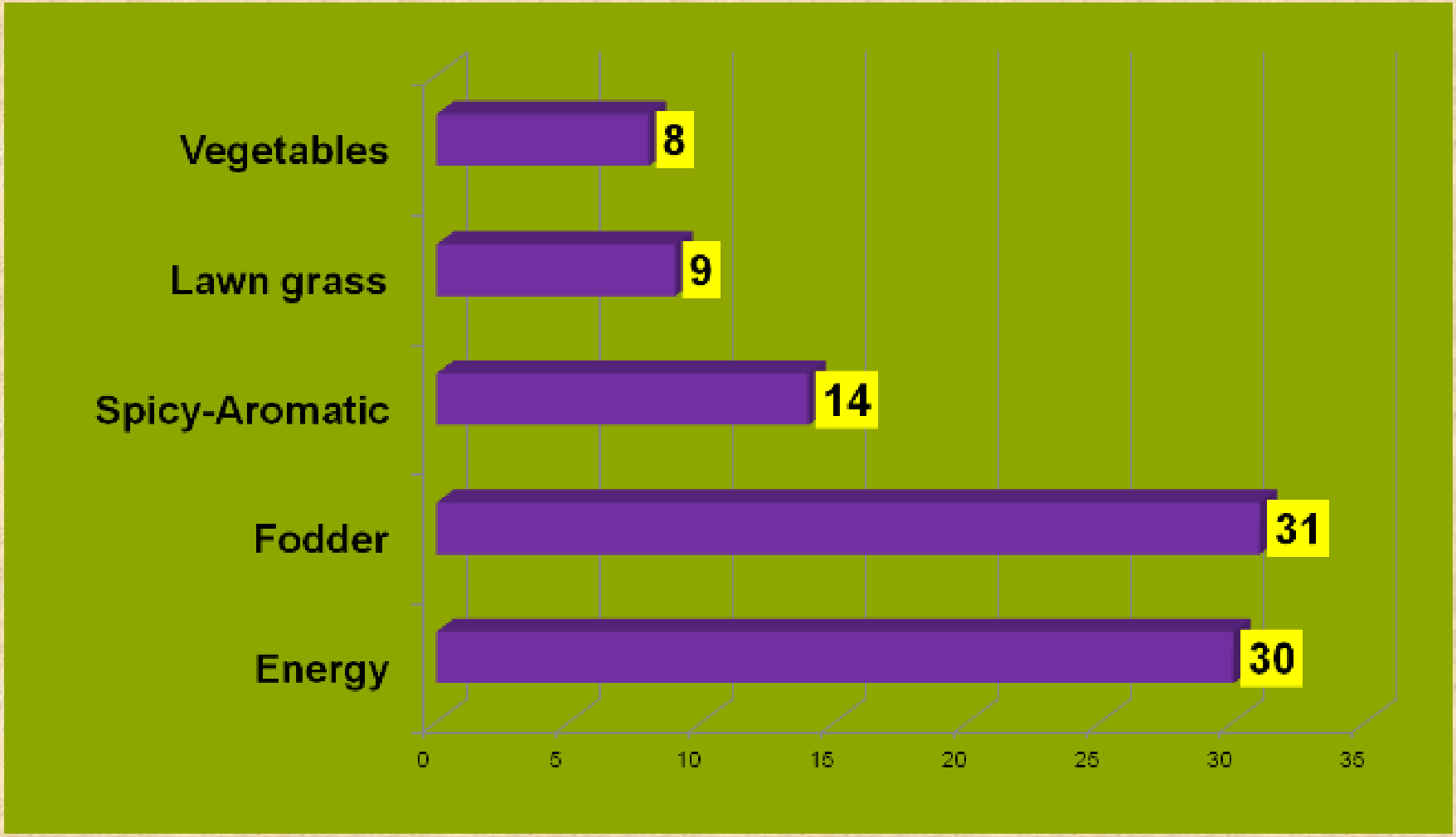
establishment of ecological balance of plant phytocenoses and plant safety for the environment;

development of physiological and biochemical bases of introduction and breeding as an important means of improving the quantity and quality of plant material;

defining the basic principles for forecasting invasive properties of species and development of measures to prevent threats to the local natural systems.

As a result of introduction and breeding, NBG became the center for creation of about 20 new crops in Ukraine. Including schavnat, mallow hybrid surap that have become well known as new bioresources for biofuels, phyto nourishment and balanced food and feed production.

Based on 60 new and rare crops, 92 varieties of useful plants (including our participation over 50) with different use were established. They were included in the 2016 State Register of Plant Varieties of Ukraine



Scientific developments of the NBG (only 35) were included in the reference edition "Prospective Scientific and Technical Developments of the National Academy of Sciences of Ukraine" (2017) "Agroindustrial complex and ornamental horticulture" (29 developments), "Fuel and lubricants materials and technologies" (3 developments), «Food industry» (3 developments).

In the Botanic Garden 50 new technologies for use of plant resources for the production of high protein and vitamin content, food and feed products, medicinal and aromatic phytomedications, green fertilizers, alternative fuels, pulp and paper products that all together contribute to improving quality of life in Ukraine were developed .

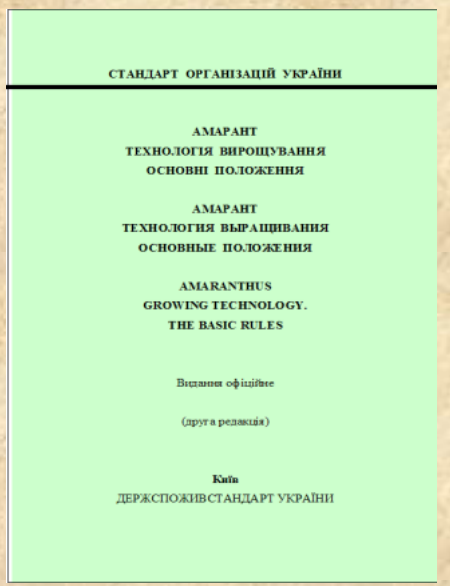
These technologies became the basis for implementation of numerous government projects and broad implementation of the results in 20 regions of Ukraine and 8 countries.

Developments of NBG new plant resources with main research areas

Developments with reference to scientific fields	Quantity
New biological resources for production of alternative fuels	15
The use of non-traditional plant resources reducing the deficit of food and feed protein	8
Production and processing fitomaterial and aromatic plants for import	11
Production of new products basis of rare vegetables	6
The use of alternative raw materials for drug multifunctional Development direction	5
The introduction of alternative raw cultures as highly efficient green fertilizer	2
Prospective honey culture for use in beekeeping	2

The novelty of the results confirmed by 15 inventions. 5 Prepared by State standards and regulatory and technological documents 40 species of aromatic plants for the processing industry. Techniques developed 42 new varieties of crops examination for the State Service for the Protection of Plant Varieties Ministry of Agrarian Policy of Ukraine. (64)

Achievements	Quantity
Inventions	15
State Standards of Ukraine	5
Methods of examination of new crop varieties for the State Service for the Protection of Plant Varieties Agrarian Policy of Ukraine	42
Regulatory and technological documentation for 40 species of aromatic plants for the processing industry	2


СТАНДАРТ ОРГАНІЗАЦІЙ УКРАЇНИ

АМАРАНТ
ТЕХНОЛОГІЯ ВИРОЩУВАННЯ
ОСНОВНІ ПОЛОЖЕННЯ

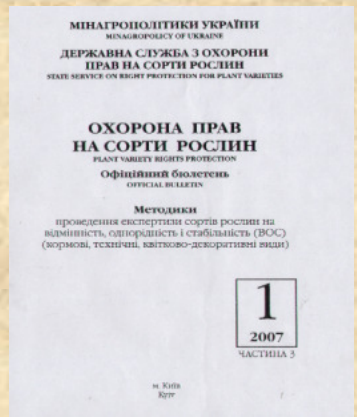
АМАРАНТ
ТЕХНОЛОГИЯ ВЫРАЩИВАНИЯ
ОСНОВНЫЕ ПОЛОЖЕНИЯ

AMARANTHUS
GROWING TECHNOLOGY.
THE BASIC RULES

Видання офіційне

(друга редакція)

Київ
ДЕРЖСПОЖИВСТАНДАРТ УКРАЇНИ


МІНАГРОПОЛІТИКИ УКРАЇНИ
MINAGROPOLICY OF UKRAINE
ДЕРЖАВНА СЛУЖБА З ОХОРОНИ ПРАВ НА СОРТИ РОСЛИН
STATE SERVICE ON RIGHT PROTECTION FOR PLANT VARIETIES

ОХОРОНА ПРАВ НА СОРТИ РОСЛИН
PLANT VARIETY RIGHTS PROTECTION
Офіційний бюлетень
OFFICIAL BULLETIN

Методики
проведення експертизи сортів рослин на відмінність, однорідність і стабільність (ВОС)
(кормові, технічні, квітково-декоративні види)

1
2007
ЧАСТИНА 3

м. Київ


ЗАТВЕРДЖЕНО
наказом Українського інституту
експертизи сортів рослин
„___" _____2012 р. № ___

УКРАЇНСЬКИЙ ІНСТИТУТ ЕКСПЕРТИЗИ СОРТІВ РОСЛИН

Міскантус гігантський
(*Miscanthus* × *giganteus* J.M.Greef & Deuter ex Hodkinson & Renvoize)

МЕТОДИКА

ПРОВЕДЕННЯ ЕКСПЕРТИЗИ
НА ВІДМІННІСТЬ, ОДНОРІДНІСТЬ І СТАБІЛЬНІСТЬ
енергетичний напрям використання
Документи, рекомендовані для використання:
TG/1/3, TGP/7/1, TGP/9/1/1, RTG/1063/1

КИЇВ – 2012

The NBG has contributed to the development of bioenergy sector of Ukraine.

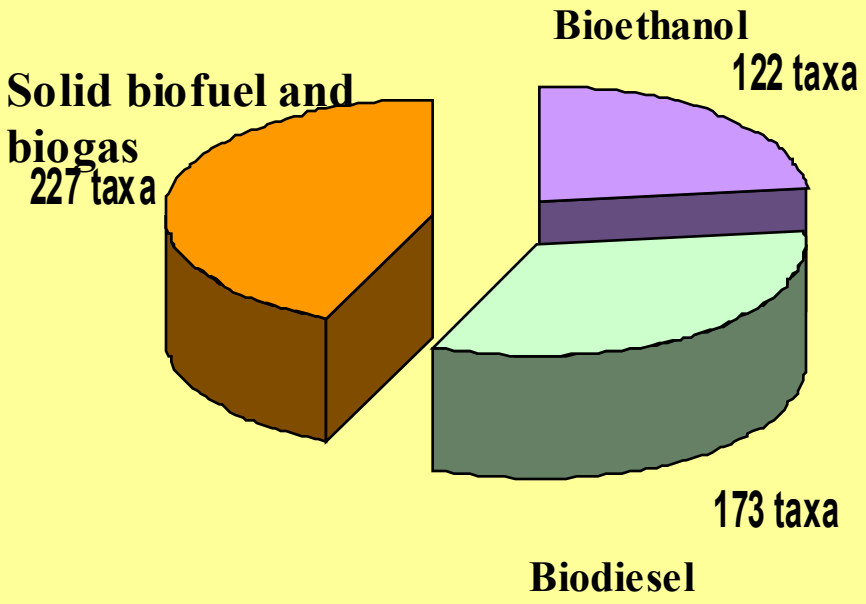
Theoretical and practical principles on selecting new crop varieties were presented. High performance and efficient use of alternative plant resources with high environmental and bio-energy potential were outlined.

Advanced technologies for processing phyto raw material into bioethanol, biodiesel, biogas and solid biofuels production were developed

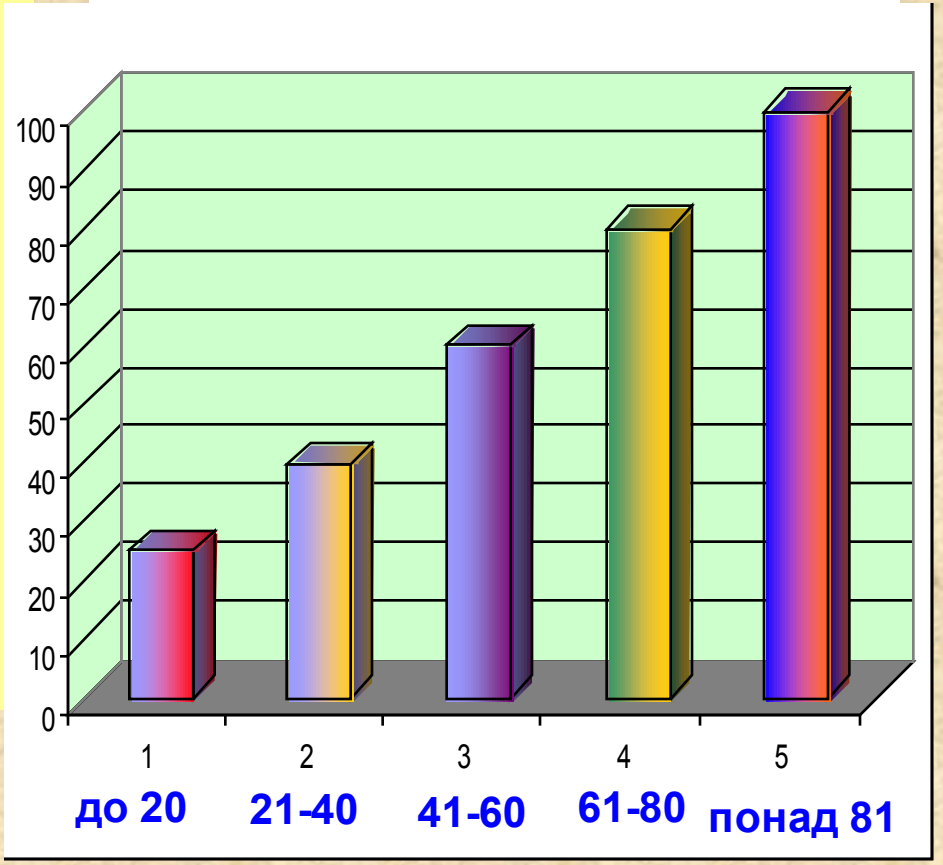
For the first time in Ukraine we introduced a method to assess the crop energy output.

According to testing results the new varieties of bioenergy crops were registred in the State Commission.

Resource potential energy of NBG crops depending on the direction of the use of biofuels (522 taxa)

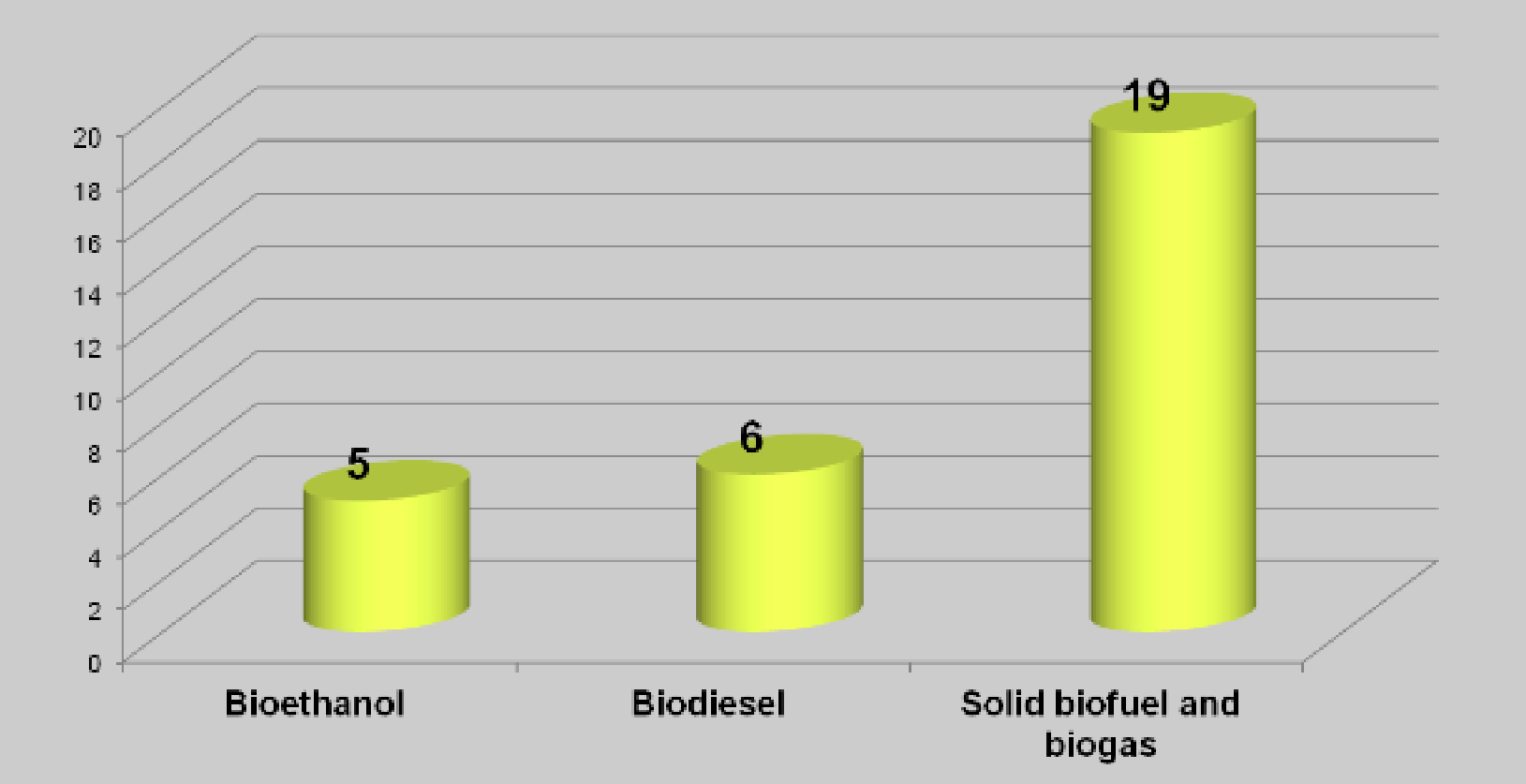


Developed for the energy production plants Gcal / ha



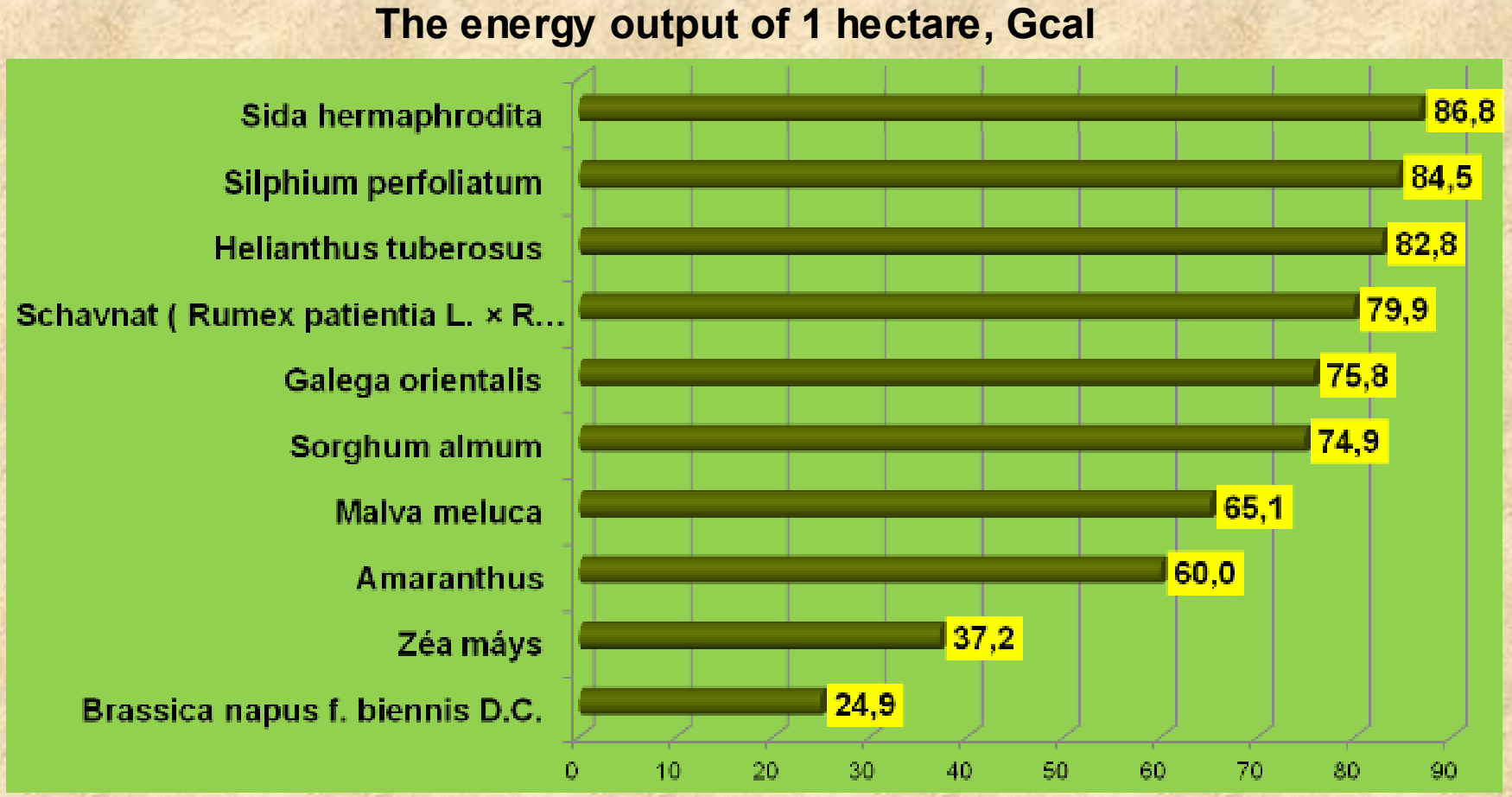
NBG carries out long-term joint work with the "Institute of Food Biotechnology and Genomics of the National Academy of Sciences of Ukraine" in terms of developing highly effective biological sources of biofuels

Different kinds of energy crops used for biofuels (30) created in NBG

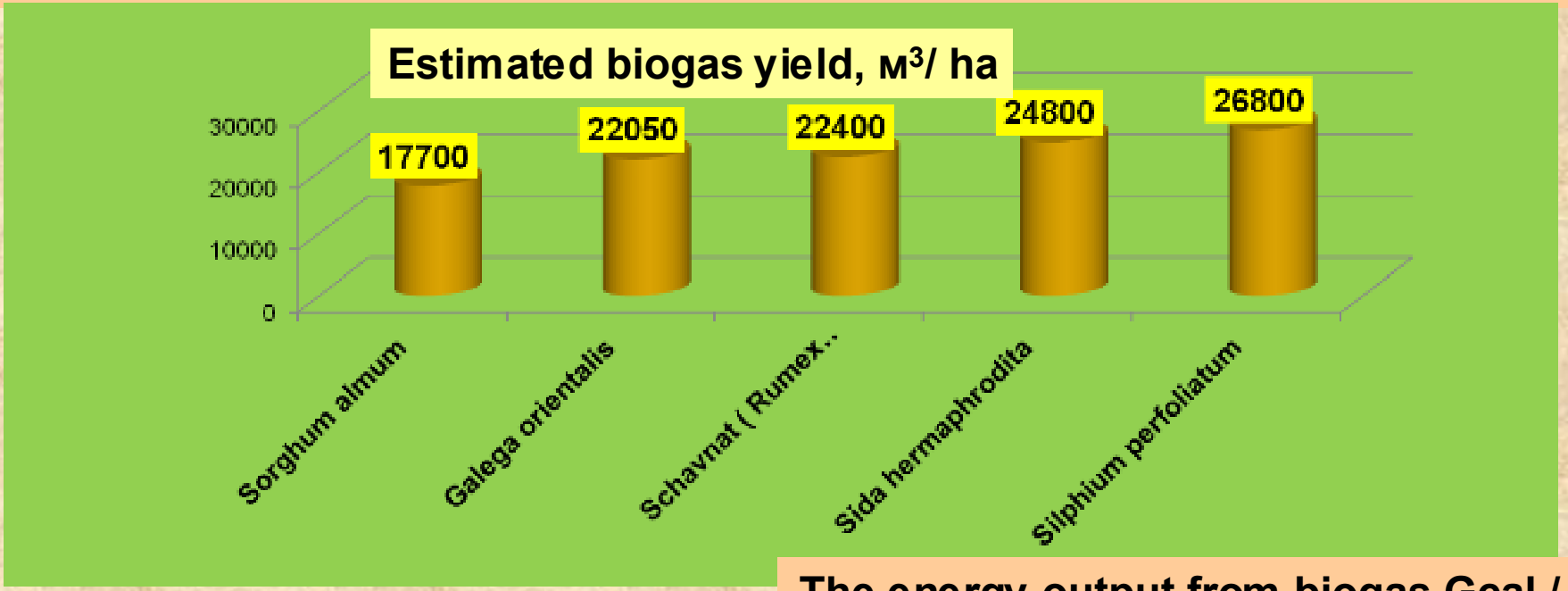


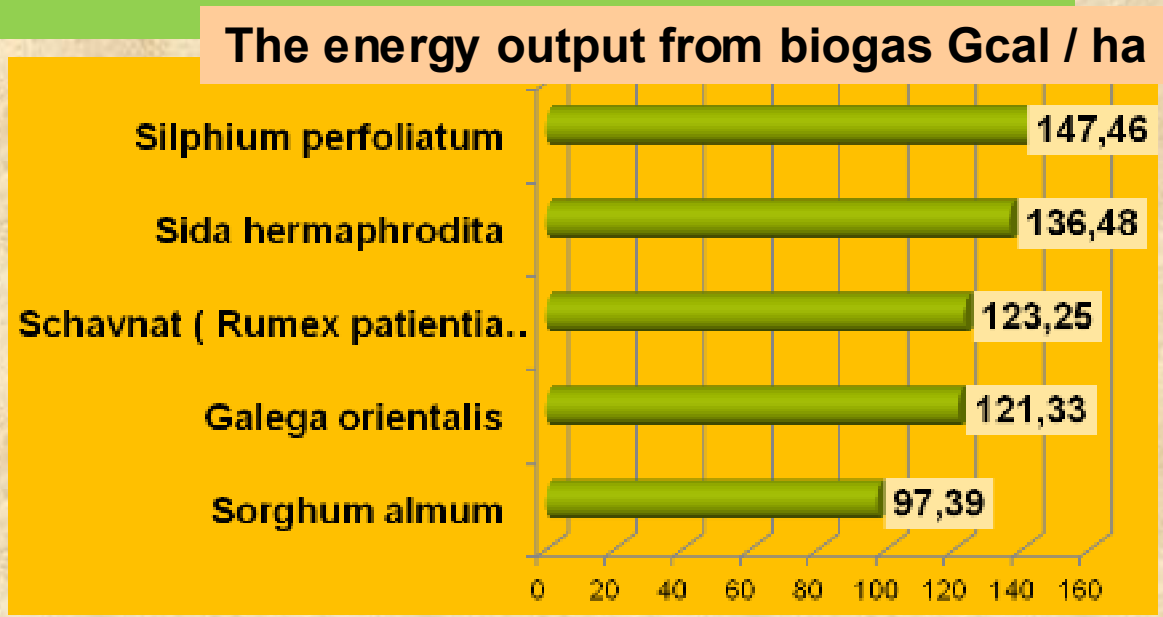
Economically justified potential target power plants in Ukraine is about 11 million t

Biological resources for the production of solid biofuels. Estimated performance of perspective perennial energy crops for use in Biological pipeline



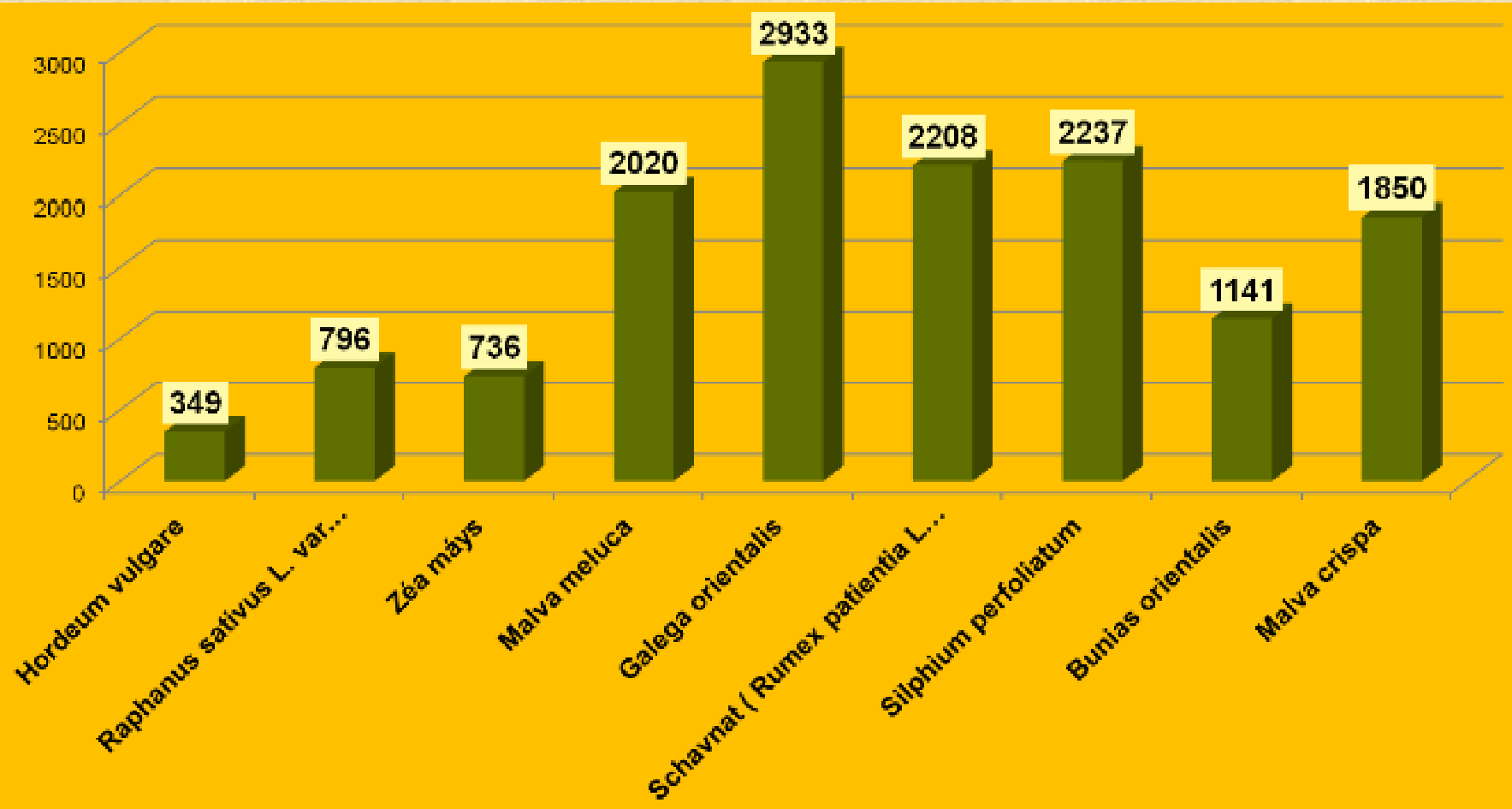
Biological resources for biogas production.
New energy crops provide high productivity output and biogas energy exceeding traditional counterparts by 35-40%.

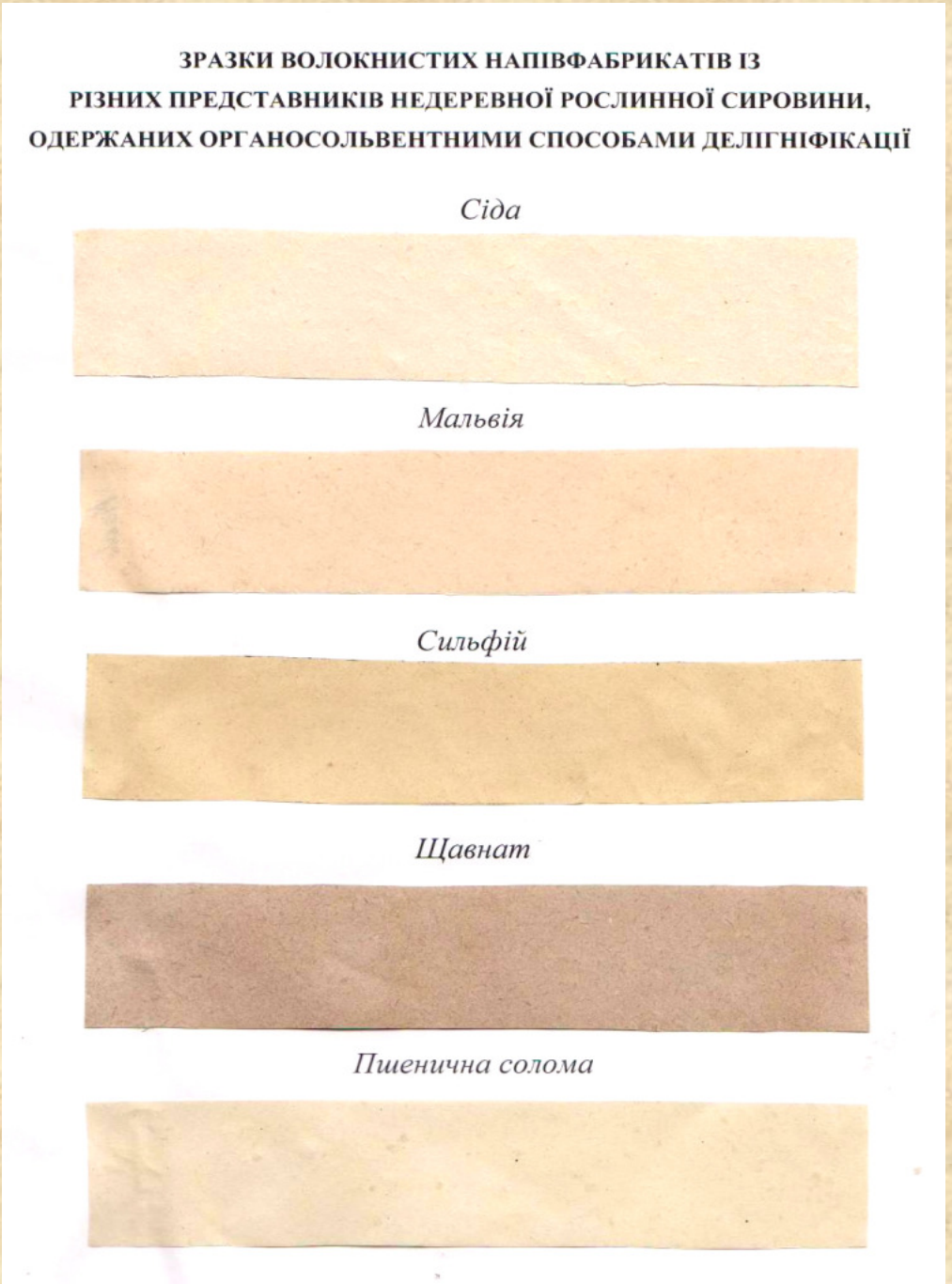




For different climatic zones of Ukraine developed scientific bases of alternative Biological pipeline, which is due to expansion of the range of plants used, allowed to achieve a substantial increase in the amount of income and deficit reduction fito material food and feed of plant protein.

Comparative characteristics of performance protein new and traditional cultures kg/ha





In cooperation with the National Technical University of Ukraine "Kiev Polytechnic Institute" were developed research technology of pulp (different names of pulp and paper products) from raw materials of useful plants

It is proved that the samples of paper and cardboard with AMC All new cultures meet standards requirements.

One high perspective raw plant - Sida is a perennial that can provide up to 10 t / ha yield of pulp. The content of cellulose fito material is 39.1%; lignin - 24,3%; pentosans - 22.6%; ash - 3.8% by weight absolute raw materials; resins, fats and waxes - 2.8%, which is close to the hardwood and can be considered as an alternative raw material for pulp and paper industry.

Cellulose has morphology of miscanthus fibers close to the annual grass plant morphology. Samples of cellulose in Miscanthus assessed level of physical and mechanical properties can be recommended in technology of sanitary papers.

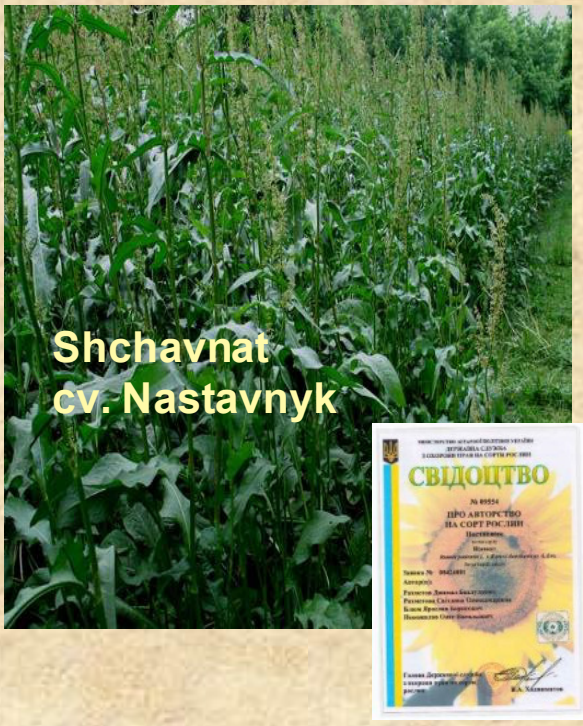
The growth, development and productivity of new crops in the multi agrocenoses and their resistance to weeds were investigated.

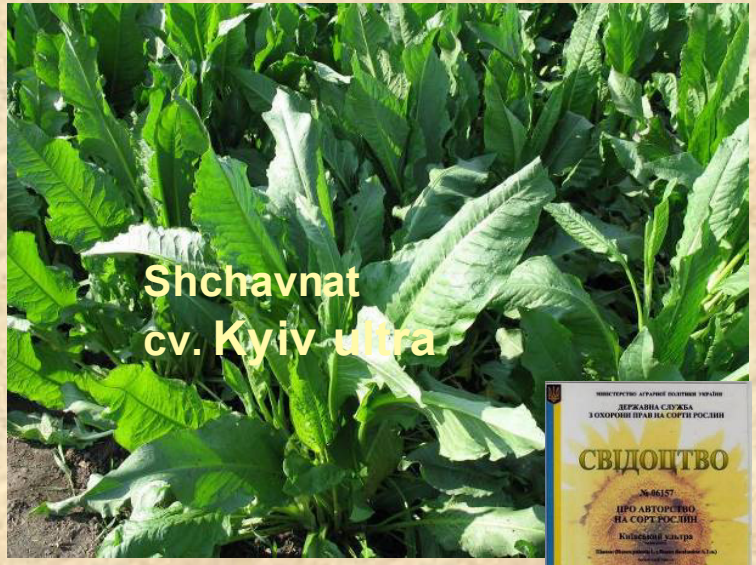
New crops have high content of nutrients (protein, including essential amino acids, sugars, inulin, squalene, stevioside, vitamins, bioactive compounds) that make them resistant to drought, low temperatures, etc.

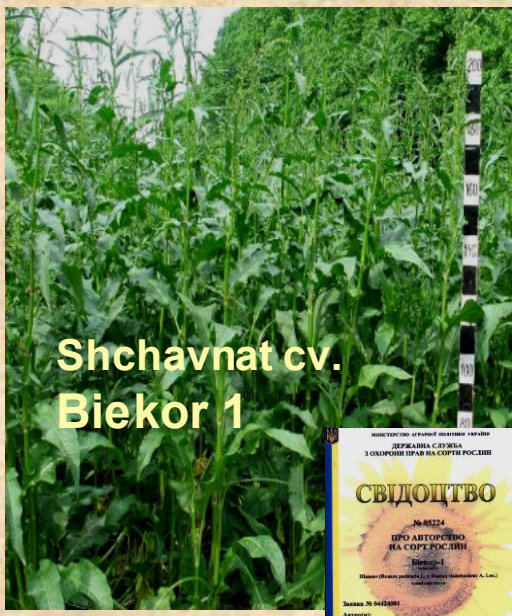
Implemented areas: PP "Agroecology" Agricultural firm JMC "Victory" SE "Askaniyske", LLC Agricultural Firm "Sunflower" agricultural company LLC "STEP" agricultural company LLC "horizon"

In NBG was developed and implemented modern technologies of biomass fitoenergy culture by creating Shchavnat patent varieties

New varieties of schavnat with appropriate technologies provide 12-15 t / ha equivalent fitop fluel. Output energy while is 150-160 GJ / ha annually.

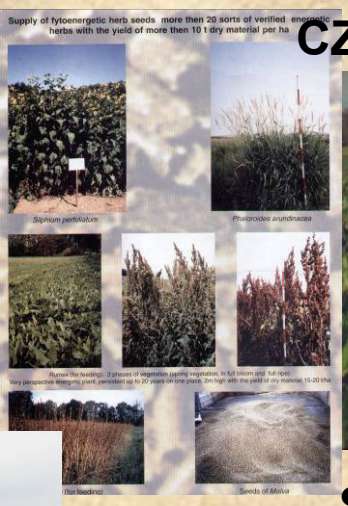






New varieties and developed technology of cultivation and use of biomass of Shchavnat put into production in the Ukraine and abroad on an area of 10 hectares As the power plant, this culture was successfully tested in the Czech Republic and Slovakia, (registered in the EU, developing registration number 2005/0758)

The introduction of Shchavnat



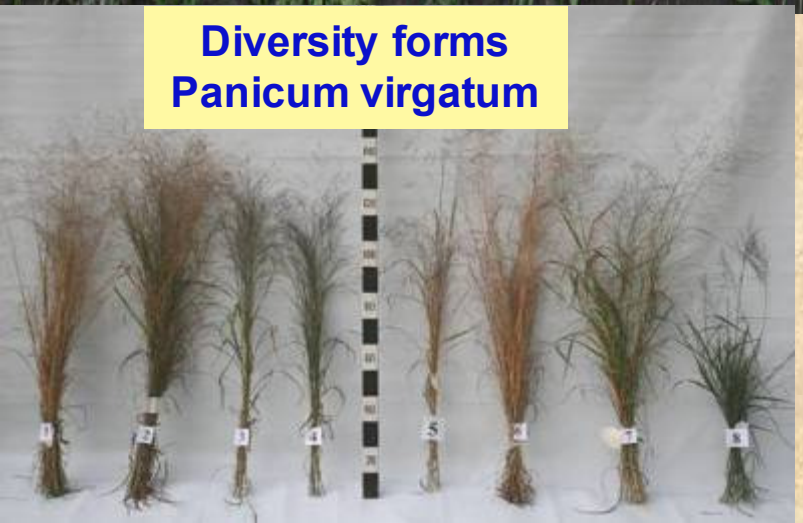
CZECH REPUBLIC

SLOVAKIA

Panicum virgatum, cv. Zorjane

Miscanthus × giganteus, cv. Huliver

Diversity forms Panicum virgatum



Miscanthus sacchariflorus, cv. Snigopad

Silphium perfoliatum

cv. Bogatyr

cv. Peremoghecj

cv. Sonechko

Silphium integrifolium

cv. Juvilejnyj-90

МІНІСТЕРСТВО АГРАРНОЇ ПОЛІТИКИ УКРАЇНИ
ДЕРЖАВНА СЛУЖБА
З ОХОРОНИ ПРАВ НА СОРТИ РОСЛИН

СВІДОЦТВО

№ 09560

ПРО АВТОРСТВО
НА СОРТ РОСЛИН

Ювілейний-90

назва сорту

Сильфій суцільнолистий

Silphium integrifolium Michx.

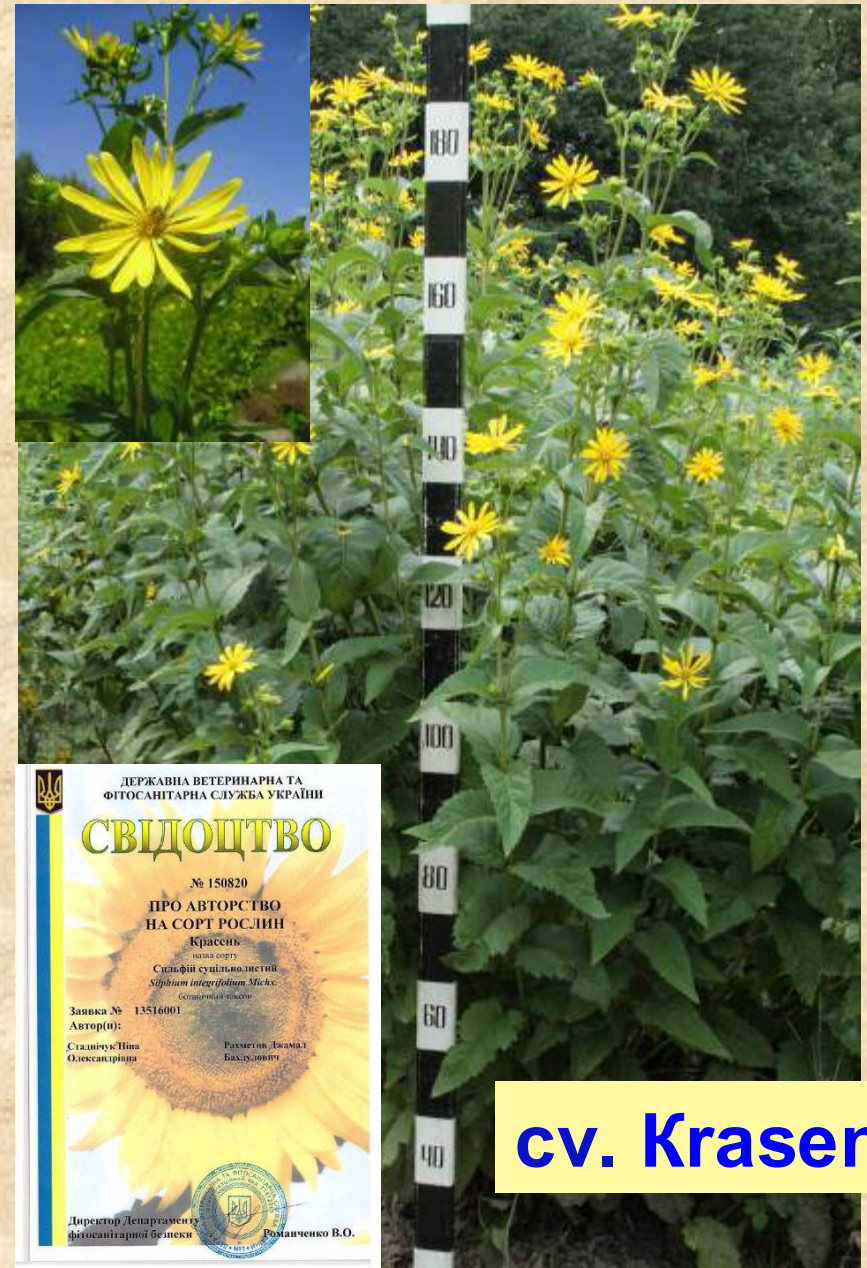
ботанічна назва

Заявка № 08486001

Автор(и):

Стаднічук Ніна Олександрівна
Рахметов Джамал Бахдулович

Голова Державної служби
з охорони прав на сорти
рослин В.А. Халіманов



ДЕРЖАВНА ВЕТЕРИНАРНА ТА
ФІТОСАНІТАРНА СЛУЖБА УКРАЇНИ

СВІДОЦТВО

№ 150820

ПРО АВТОРСТВО
НА СОРТ РОСЛИН

Красень

назва сорту

Сильфій суцільнолистий

Silphium integrifolium Michx.

ботанічна назва

Заявка № 13516001

Автор(и):

Стаднічук Ніна Олександрівна
Рахметов Джамал Бахдулович

Директор Департаменту
фітосанітарної безпеки Романченко В.О.

cv. Krasen

Galega orientalis

cv. Kavkazjkyj branecj

cv. Riabchik

cv. Saljut

cv. NBS-75

Galega officinalis

cv. Garant

cv. Flamingo

Galega orientalis
cv. Kavkazjkyj branecj

Sida hermaphrodita, cv. Fitoenerhija

Diversity forms Sida hermaphrodita

Sorghum almum, cv. Kolumbo

Malva meluca, cv. Kormela

Malva crispa, cv. Rada

Malva sylvestris L., cv. Krasavka

Malva meluca, cz. Novitnia

Amaranthus

The technology pilot production of
Etanol fuel oxygenates from raw sugar and sorghum
conducted its tests in industrial conditions together with control
"Institute of Food Biotechnology and Genomics of National Academy of Sciences of Ukraine"

Production volume of bioethanol new energy crops t / ha