

Biological Plant Protection – Russian Market Development



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Berlin (Germany)



Technology Transfer and Consultancy

Company History:

- 1998 Foundation of »*OOO International Transfer of Know-how & Technology*« (Kiev)
- 1999 Shareholding in »*SAOTechnopark Vinnitsa*« (Ukraine)
- 2001 Foundation of »*Mycoton GbR* « (Berlin)
- 2002 Foundation of »*OOO Mycoton Aglycon*« (Kiev)
Foundation of »*Aglycon Mycoton GmbH*« (Germany)
- 2004 Implementation of founded project at *Biotechnology Park Luckenwalde* (Germany)
- 2007 Foundation of »*TTC GbR*« (Berlin)

Co-operation Partners:

Kurchatov Institute (Moscow)

Chair of *Phytopathology*, *National Agrarian University* (Ukraine)

Department for Bioengineering of *Kiev Polytechnic Institute*

Institute of Assembling Technology (Moscow)

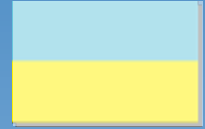
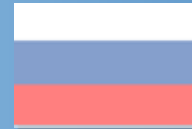
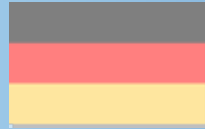
All-Russian Research Institute of Biological Plant Protection (Krasnodar)

All-Russian Institute of Plant Protection (St. Petersburg – Pushkin)



Technology Transfer and Consultancy

Business Segments:



★ Consulting

Market analysis, strategy and project development, locating business partner

★ Agency

Establishing contact, moderation and translation

★ International Project Management

Feasibility studies, marketing, budgeting,

licensing and registration of products, planning and implementation of market launch

★ International Know-how Transfer

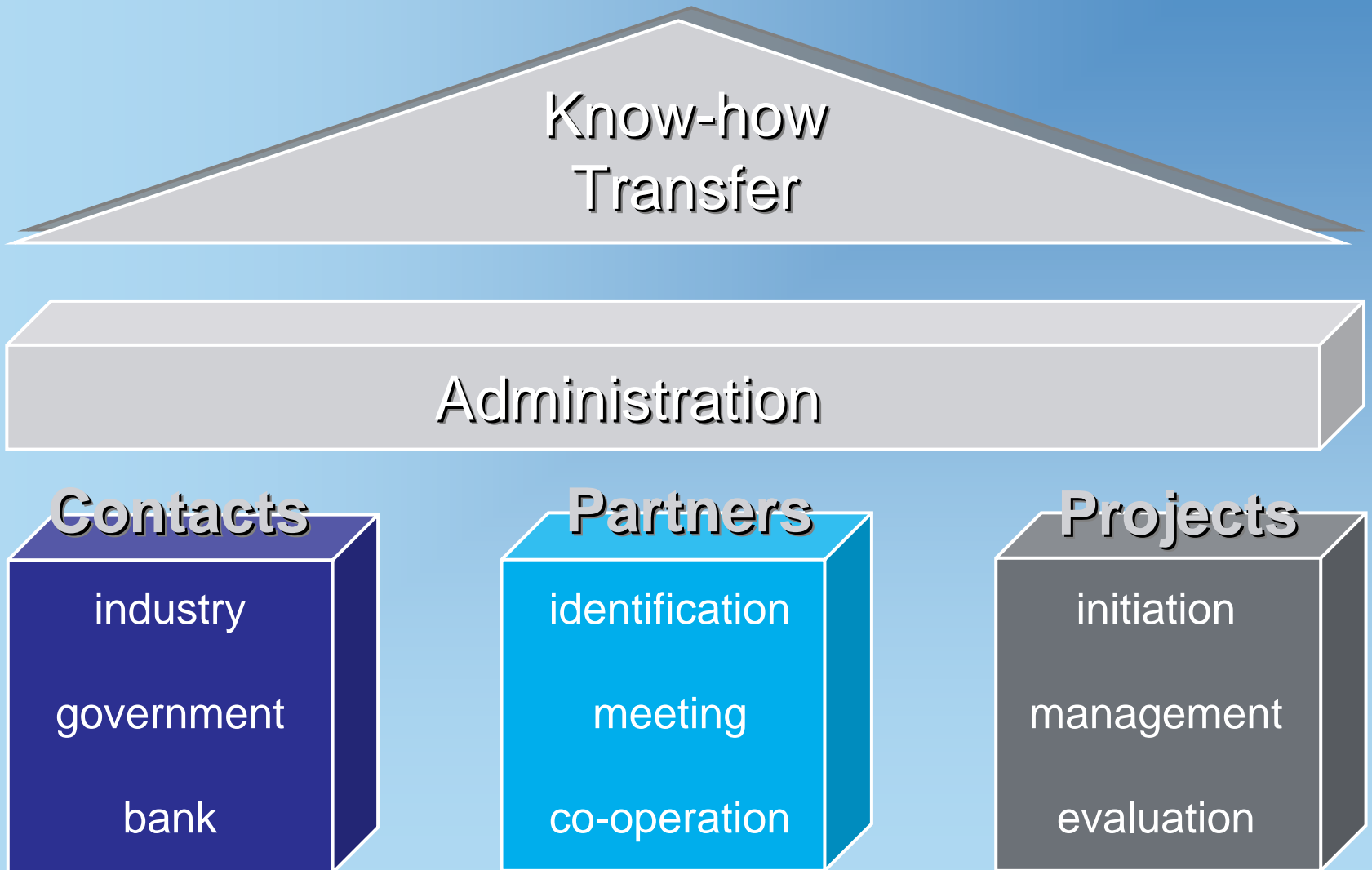
Scientific transfer between companies and research facilities

★ Training

Study tours

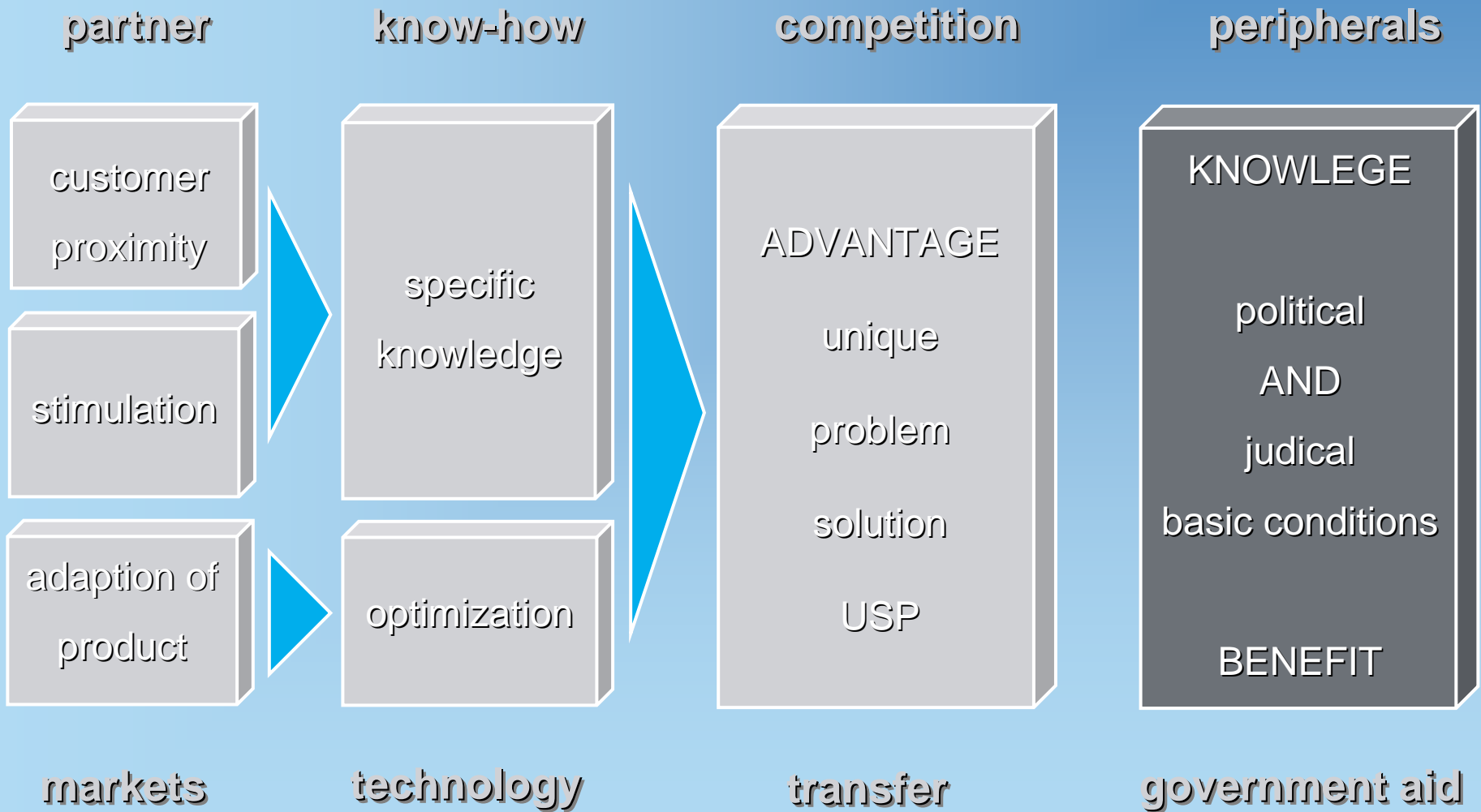


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Biological Pest Management

Russian Federation:

- ★ Ecological agriculture according to EU standards
Acreage: 835,000 ha (2005)
- ★ Public support program to increase biological pest management
- ★ Licensed biological pesticides: 33 arthropods, 12 pheromones, 3 virologics



Boundaries of Arable Land
(2003)



Fruits and Vegetables

	Cultivated Area in 1000 ha	Vegetables Mill. T	Fruits Mill. T
1998	743	10.5	2.4
1999	820	12.3	2.1
2000	833	12.5	3.1
2001	831	13.3	2.8
2002	835	13.0	3.3
2003	867	14.8	3.3
2004	847	14.6	3.6
2005	835	n.n.	n.n.



Agriculture in Kuban

Land utilization

4.7 mill. ha

Winter wheat

1.1 mill. ha

Winter barley

300,000 ha

Corn

550,000 ha

Rice

110,000 ha

Sun flowers

440,000 ha

Sugar beets

150,000 ha

Soya

200,000 ha

Apple

55,000 ha

Wine

50,000 ha

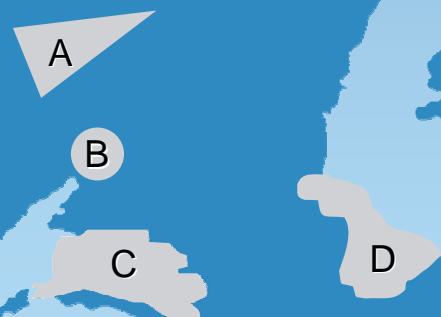




Fruit-Growing Areas

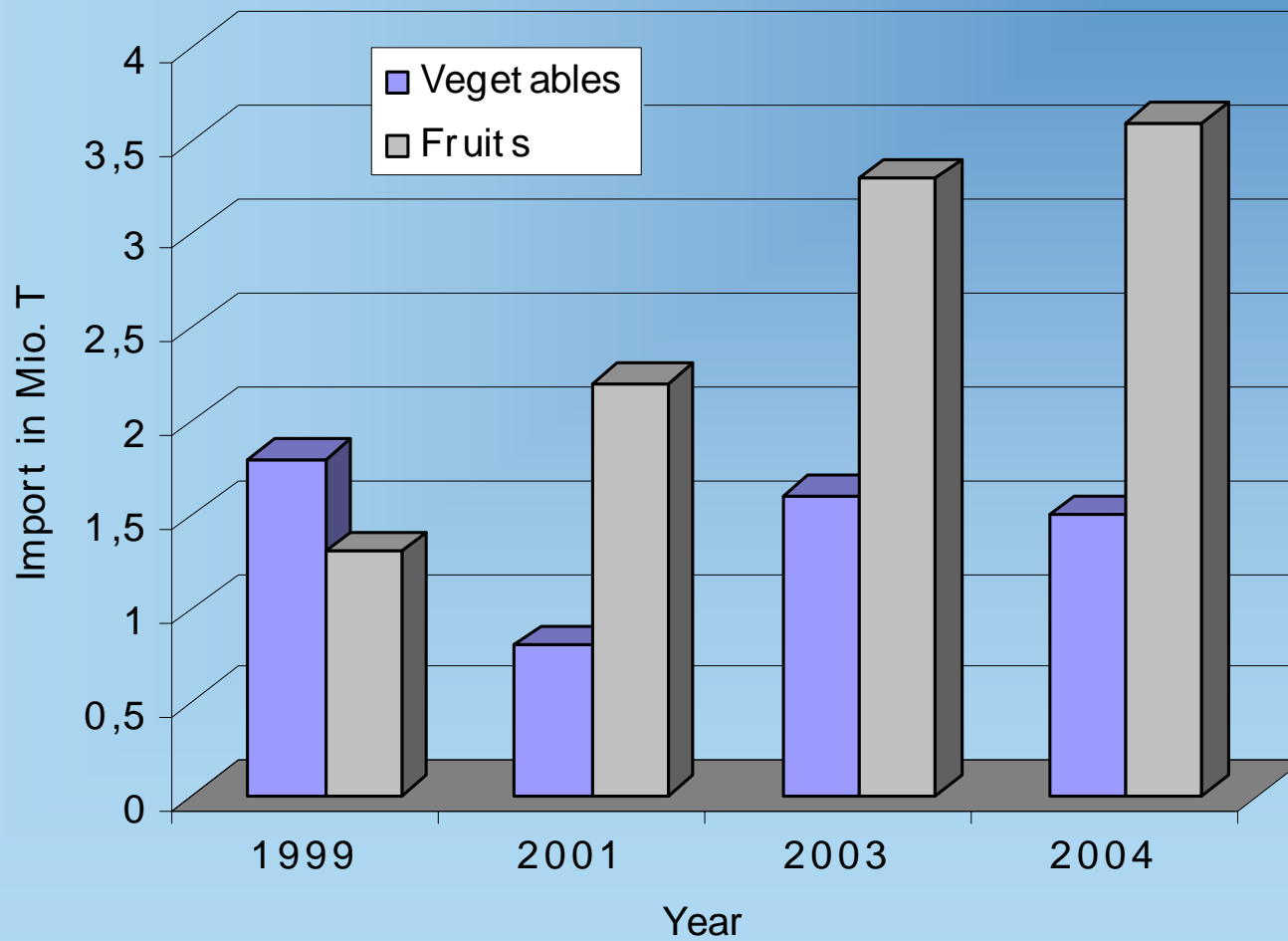
#		Apple	Wine
	Northern Caucasus		
	Krasnodar	40,000 ha	
C	Krasnodarer Krej	15,000 ha	
B	Rostower Oblast	15,000 ha	10,000 ha
	Stafropoler Krej	85,000 ha	7,000 ha
D	Dagistan	1,500 ha	30,000 ha
	Central Black Sea Area		
A	Woronesch	83,000 ha	
	Lipitzk	7,600 ha	
	Tambow	14,800 ha	
	Belgorod	6,300 ha	
	Kursk	9,000 ha	

 Moscow





Import of Vegetables and Fruits in Russia





Appel Growing in Russia

Champion	Tschechien
Pinola	Netherland
Mitzu	Japan
Futschij	Japan
Flurina	France
Elsar	USA
Jonatan	Russia
Aidared	Russia
Kalbil sneschnij	Russia
Melba	Russia
Slatana	Russia
Renet sitirenko	Russia
Rokras	Russia



Pesticides in Russian Agriculture

In 1000 ha	1986-1990	1991-1995	1996-2000	2001-2005
Biological methods	7100	3420	1255	832
Phytophages	7090	3305	975	500
Phytopathogenes	10	115	280	332
Chemical methods	68949	34151	28204	36223
Phytophages	23352	12049	9273	11840
Phytopathogenes	13155	5829	2921	3353



Scientific Co-operations



Russian Academy of Agricultural Sciences



The Bashkir Research Institute for Agriculture is a prominent scientific center for agrarian science in the system of the Russian Academy of Agricultural Sciences and the Academy of Sciences of the Republic of Bashkortostan. It was founded in 1956 on the basis of the Chishminskaya Experiment Station, founded in 1912, and it is the only scientific institution for agriculture, which elaborates and coordinates research projects for the agro-industrial complex of the republic.

All-Russian Research Institute of Biological Plant Protection



In 1992 the All-Russian Research Institute of Biological Plant Protection (VNIIBZR) was founded on the base of the North-Caucasian Research Institute for Phytopathology (1960-1992) and at present it is a leading research center on biological control in the Russian Federation.

(Vladimir Nadykta, Vladimir Ismailov)



Immunological characteristics of wheat cultivars regarding their disease resistance.

Forecast of intrapopulation structures.

Regularities in the variation of pathogenic species composition and intrapopulation structures.

Genetic analysis of wheat resistance.

Immunology Principles of Wheat Breeding for Disease Resistance



Biocontrol Research



Key Lines and Results:

Taxonomy and ecology of entomophages, entomopathogenic organisms and antagonistic microbes of plant pathogens.

New Species:

- 6 science genera
- 19 Russian genera
- 57 North Caucasus genera
- 217 science species
- 349 Russian species
- 104 North Caucasus species
- 4 Variants of insect nematodes
- 13 bacterial strains
- 6 viral strains





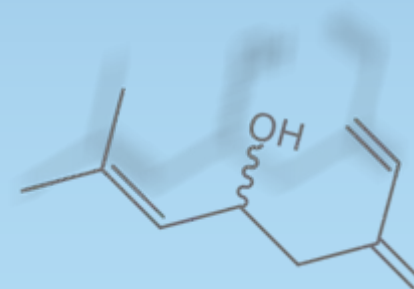
Biocontrol Research



Key Lines:

Chemical communication in arthropods, synthesis and application of pheromones, biopesticides, crop regulators and immunomodulators.

- ★ Pheromones and kairomones for 15 species of phytophages and entomophages
- ★ New methods for pheromone synthesis of 58 lepidopterous pest species
- ★ Methods for population regulation of codling moth, cotton bollworm and grape moth by using pheromones
- ★ Laser technologies to increase yield and resistance of crops
- ★ 9 Patents of Russian Federation





Biocontrol Research



Biological Pest Management:

Development and introduction of pest management systems in crops by using predominantly biological methods and products.

★ Method for pear psylla control

★ Integrated pest management for:

Winter wheat, soybean, tomatoes, apple trees and vineyards

(predominantly entomophages, biopreparations and biologically active compounds)

★ Total introduction area: 57 000 ha

★ 17 Patents of Russian Federation





Pheromones and Cairomones

	Structure	Culture	Application
<i>Coddling moth</i>	E8,E10-dodecadienol	apple tree, pear tree, walnut	Signaling: 1 trap/ ha Disorientation:1000 mg/ ha Mass trapping:10 traps/ ha
<i>Pea moth</i>	E8,E10-dodecadienylacetate	pea	Signaling: 1 trap/ ha
<i>Grape moth</i>	E7,Z9-dodecadienylacetate	grapes	Signalling:1 trap/ 10 ha Disorientation: 1000 mg/ ha Mass trapping: 4 traps/ ha
<i>Beet miner</i>	E3-dodecenylacetate	beet	Signaling: 1 trap/ 10 ha Mass trapping: 4 traps/ ha
<i>Cabbage moth</i>	Z11-hexadecenal Z11-hexadecenylacetate	cabbage	Signalling:1 trap/ ha
<i>Cotton bollworm</i>	Z9-hexadecenal Z11-hexadecenal	tomatoes, Soybean, sunflower, corn	Signalling:1 trap/ 10 ha Mass trapping:10 traps/ ha
<i>Turnip moth</i>	Z9-tetradecenylacetate Z11-hexadecenylacetate	wheat, barley, corn, beet, sunflower	Signalling:1 trap/ 5 ha
<i>Gamma moth</i>	Z7-dodecenylacetate	wheat, barley, corn, beet, sunflower greenhouse flowers	Signalling:1 trap/ 5 ha
<i>San Hose scale</i>	a-geranylpropionate	apple tree, pea tree	Signalling:1 trap/ ha
<i>Steppe click beetle</i>	a-gernylbutyrate	corn, sunflower, beets, potatoes	Signalling:1 trap/ 10 ha Disorientation:20 g/ ha
<i>Crop click beetle</i>	a-gernylbutyrate	wheat, corn, sunflower, beets, potatoes	Signalling:1 trap/ 10 ha Mass trapping:10 traps/ ha



Production And Application

Biological Plant Protection:

- ★ Technologies for mass production of

40 species of entomophagous parasites



- ★ Methods for reproduction of

Sunn Pest egg parasites under natural conditions



- ★ Experimental production of

nuclear polyhedrosis viruses of cotton and cabbage moths



Thank you for your attention!

Спасибо для вашего Внимания!

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