

## Innovative development of gardening factories

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**The purpose.** To justify theoretically basis for innovative development of gardening factories in conditions of varying market. **Methods.** Scientific knowledge, analysis and synthesis (dialectic), system generalization. During researches fundamental development of leading domestic and foreign scientists were used. **Results.** Statistical researches are carried out of development of gardening in Ukraine, in particular in Vinnytsia region. It is established that for the last 3 years production of fruit products has decreased on the average on 2,5%. Principles of innovative development of gardening factories are justified and stages of this process are specified. In industrial orcharding innovative process powers up such stages: creation, extending, mastering innovations and reaching effect from their mastering. Each of stages demands certain expenditures: financial, material, and manpower. **Conclusions.** Results of study of organizational bases of innovative processes in farm-garden industry testify to the necessity of creation of effective gear of their implementation and data support, and also formation of effective scheme of cooperation of scientific institutes with factories which are engaged in the process, authorities, and managing subjects. Competitive development of fruit-growing factories is possible only at uniform continuous institutional interaction between development of innovation and its implementation into production. In farm-garden industry it is necessary to develop efficient gears for activation of innovative process of institutional regulation of development of innovations. Its efficiency depends on extent of participation of branch in innovative process.

**Key words:** *innovative development, innovative process, economic efficiency, gardening factories, innovations, productivity, fruit crops.*

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**Propounding of the problem.** In the modern hard market terms in order to survive and to become competitive the Ukraine's horticultural enterprises must introduce the mechanisms of the creation and practical application of innovations as the necessary conditions the of sector economic growth and reach of the state food independence, by the way, in the nearest future, till the moment is not missed for the innovation's breakthrough and achieving the worthy place among the agricultural countries throughout the world.

**Analysis.** Different aspects of the innovation processes in the Ukraine's agrarian sector are studied by O. Shubravska, K. Prokopenko, I.Yasnolob, O. Gorb, M.Misyuk and other scientists and in horticulture O.Yermakov, V. Rulyev, V. Chornodon, O. Shestopal, Y. Nesterchuk and others However, in spite of the numerous researches on the problems of this branch development many theoretical and methodical problems connected with its innovations development and increase of the efficiency of the horticultural production management in the modern conditions were not investigated sufficiently and a number of regulations have a discussion character.

**Purpose** is to substantiate theoretically the principles of the horticultural enterprises innovation development in the market environment.

**Materials and methods.** The dialectical method of the scientific cognition, analysis and synthesis was applied as well as of the system generalization. In the research process the main regulations of the economic theory and market economics were analyzed as well as the fundamental elaborations of leading foreign and national scientists.

**Main results.** Horticulture is high effective industry of the agrarian sector. But according to the data of the statistic investigations in 2015-2017 in this period the tendency of the orchards areas decreasing, for example, of fruit-bearing ones by 3.6 %, reduction of the horticultural manufacturing rate that now is 97.5% and average level of the production increase by 2.5 %. The yield decreased by 1.3 %, including the Vinnytsya region where the 1<sup>st</sup> and 3<sup>d</sup> of these indices are 5.4 and 15.6 % respectively. So the horticultural production reduced by 2.5 % during the latest 3 years. The comparison of the indicators of the horticultural enterprises economic efficiency in

the Vinnytsya region in 2016 as compared with 2015 shows that their production expenses per 1 ha increased by 19.5 %, and the profitability level decreased by 2.3% and is 13.7 % (table).

Innovation development of the industrial horticulture is bound with 3 factors: biological, human and technological. The main peculiarities of forming and development of the innovation processes in this industry are: differences in the technologies of the horticultural production, their dependence on the weather and natural factors and separation of the innovation authors from manufacturers, the absence of the organizational and economic mechanism of transferring the innovations to producers, and the variability of the fruit crops cultivars.

Table. Economic efficiency of the fruit production by the agricultural enterprises in the Vinnytsya region in 2011-2016 (Bulletin of the National Statistic Services)

Indices	Years					
	2011	2012	2013	2014	2015	2016
Gross harvest, c	1263698	1033141	1189948	854589	944824	907315
Yield, c/ha	150,8	153,1	173,7	109,0	146,0	146,1
Fruit-bearing orchards, ha	8379	6748	6849	7842	6471	6699
Production expenses per 1 ha, thousand gryvnyas	19,63	23,25	25,29	23,86	39,85	47,63
Marketability level,	90,8	92,23	100,2	106,15	93,93	92,68
Production cost of 1 c, gryvnyas	151,09	193,85	172,12	266,31	325,74	384,02
Realization price of 1 c, gryvnyas	187,31	205,28	193,52	236,38	428,10	436,49
Profit damage per 1 ha, gryvnyas	4960,17	1613,23	3725,07	-3462,56	14038,49	47599,6
Profitability level, %	24,0	5,9	12,4	-11,2	31,4	13,7

The innovation process in the industrial horticulture is the transformation of the technical and technological novations on the basis of the scientific researches into new technics (means for mechanization and automation), new cultivars and hybrids of different maturity terms with the higher biological potential and the highest economic capacities, means for the orchards and small fruit plantations protection from diseases and pests, industrial, managerial and informational technologies, their introduction into manufacturing in order to obtain a new product. This process includes such stages: creation, dissemination, mastering of innovations and gaining of effect from their mastering. Each of these stages requires certain financial, material and working resources.

The process of the innovation creation is the longest one. Fundamental applied investigations and developments that are linked with certain risks of attaining unsatisfactory results, are the main and necessary sub-stage in the creation of the innovation products.

The first of the enumerated stages includes the origination of idea, fundamental and applied investigations, official registration of their result as an object of the intellectual property, production and realization of the knowledge-based production, adaptation of the innovations to the manufacturing conditions. When the plan of the researches is completed and certain results are obtained the elaboration may be considered completed on condition that the test of fruit and small fruit varieties was carried out and concerning technics the innovations approbation at the testing stations done.

Novations in the industrial horticulture are new cultivars, strains of microorganisms, technics, technological processes, chemical and biological preparations (vaccines), economic novelties, methodical developments, recommendations. This stage is rather long, characterized with significant material and intellectual expenses. Its important problem is obtaining the financial resources for the fundamental researches. Applied investigations that are oriented to the certain market requirements need the state support. The scientific developments become innovations after the recommendation for their introduction into mass production only.

The substantial stage is the spread of innovations. As for fruit growing, it can be represented on a diagram using the example of a horticultural enterprise (fig).

The next stage is formation of the organizational and economic mechanism of innovation mastering by enterprises, conclusion of agreements between their developers and producers. The main aim of the innovations into the industrial fruit growing is the achievement of commercial success, namely: the rise of the enterprise labour productivity and competency through the increase of the technological level, innovation activity and introduction of the new horticultural production as well as of the new methods of the organization and management of the economic activity of the horticultural products manufacturers and improving their technological potential.

The economic effectiveness at the stage of the innovation novelties in the industrial fruit growing is determined by such indices as an increment of yield, increase of the gross production output at enterprises and of the quality of products, decreasing of the labor expenditures for the horticultural production unit as well as of its cost price.

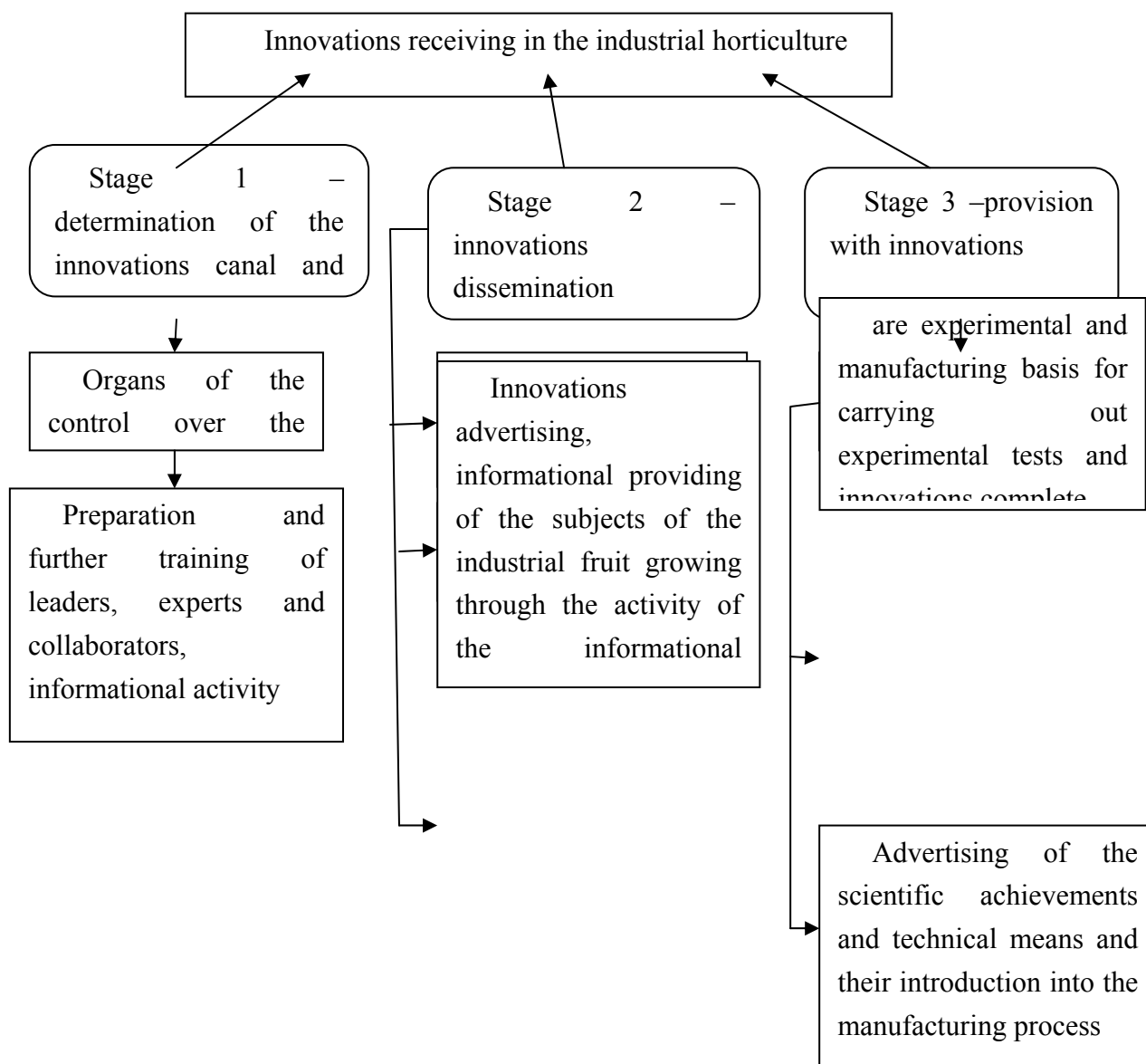


Fig. Innovations dissemination in the industrial horticulture

The source is elaborated by the author

The duration and general organization of the innovation process in the industrial fruit growing are influenced by such factors: the essential dependence of the technologies that are applied in horticulture on natural and weather conditions, separation of horticultural enterprises from the scientific institutions where the and production and technical mechanism is developed; absence of the scientifically substantial mechanism for the

transfer of the scientific achievements to producers. Besides, the branch is behind substantially the innovations mastering in the production.

### Conclusions

The results of studying organizational principles of the innovations process in the industrial horticulture show the necessity of creating the effective mechanism of the innovations introduction and informational security with forming the effective scheme of the scientific organizations cooperation with the institutions which carry out and control organizations and managing subjects. The competitive fruit growing enterprises development is impossible without common continuous interaction between the elaboration of innovations and their introduction into production.

For the activation of the innovation process in the industrial horticulture it is necessary to elaborate effective mechanisms of the innovations development institutional regulation.

The competitive horticultural enterprises development is a dynamical process which includes the sector economic rise based on the innovation introduction that reflects the structural improvement in the economics of production, and labour productivity. The industrial fruit growing efficiency depends just on the degree of its involvement into the innovation process. The main task of the horticultural enterprises is the increase of the latter on the innovation basis. This insures the increment of yield, the gross output production and the increase of its quality, reduction of the resources expenditures on the production unit, rise of the labour productivity.

The efficiency of the horticultural products manufacturing contributes to the branch renew, to the strengthening of the fruit growing enterprises financial state.

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