

FEATURES OF INFLUENCE OF DIFFERENT MODES OF TRAINING ON THE DYNAMICS OF POWER PERFORMANCE BODYBUILDERS ON STAGE-SPECIALIZED BASIC TRAINING

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Annotation. *Purpose:* study the effect of various features on the structure and orientation of exercise routines on the level of development of force capabilities bodybuilders on stage specialized basic training. *Material:* studies participated 60 athletes (age 18-19 years, the experience of training - 5 years). The study used a method of determining the index of the training load for the power sports. Level security features athletes determined by control testing. Control of the studied parameters was carried out for 4 months training at intervals of 1 month. *Results:* it was found that under conditions similar level of fitness athletes and structure your workout performance power load and the nature of their changes depend on the particular mode of training (in this study - from the application of the basic sequence variative and isolation exercises). *Conclusions:* the use of pilot training in integrated mode with alternating motor activity using the basic priority and isolation exercises for no more than 2 microcycles have the most significant positive impact on the increase in power performance parameters of athletes (on average by 26.5% $p < 0.05$).

Keywords: training, process, specialized, basic, training, fatigue, bodybuilding, strength, fitness.

Introduction

Despite a broad popularization of bodybuilding in the world, thousands of various training programs, the problem of training loads optimization is still a top priority in this kind of sport [6, 10]. The necessity of solving this problem, compels trainers, scientists, and also professional athletes to conduct constantly the search of absolutely new, the safest but also effective training techniques which will allow not only to achieve good results for a short period of time, but also to keep the reached fitness level during a long period of competitive activity [12, 13]. However, most experts in bodybuilding try to adhere to standard training techniques using standard schemes of principles, methods and means combination, motivating with that efficiency of their application is proved by many researchers [1, 3, 6, 15].

At the same time, in modern scientific literature [11, 12, 13] experimental techniques of training in bodybuilding are rather extensively presented. However, the analysis of a specialized literature [10, 14] testifies that in the theory and practice of strength sports the problem of a training process optimization on account of optimization of loads for athletes at the stage of a specialized basic training isn't rather deeply considered.

In this regard, there is a need of deeper studying of various training regimes peculiarities, and also efficiency of their influence on increase of athletes fitness level at this stage of training. Also, insufficiently examined is a problem of necessity and efficiency of experimental complex and specific training regimes usage during power training which differ on the structure and indicators of external load from universally recognized in bodybuilding.

Work is performed within the research work scope of the Olympic and professional sport department at the Petro Mohyla Black Sea State university "Variability of training work indicators in bodybuilding and their influence on dynamics of athletes' organism functional condition", number of the state registration 0109U004555.

Purpose, problems of work, material and methods.

The purpose of research is studying the influence of various training regimes on a level of bodybuilders' power potential development at the stage of a specialized basic training

Methods, organization of researches.

60 athletes aged 18-19 years (experience in bodybuilding - 5 years) took part in the survey. To achieve the goal this contingent was divided into three research groups:

- the first group of athletes (control) used the standard training regime during 4 months of training (primarily a series of general exercises, and then a series of isolating exercises were carried out on each "working" muscle group);
- the second group of athletes (first experimental) used the experimental combined training regime during 4 months of training. So, during every month of training in the period of first 2 micro cycles, primarily a series of general exercises, and then a series of isolating exercises were carried out on each "working" muscle group. Herewith, during next 2 weeks of every month of training, the priority of basic and isolating exercises use changed to the opposite side (the principle of "preliminary exhaustion" was used [1, 6]);
- the third group of athletes (second experimental) used non-standard training regime for the stage of a specialized basic training which is based on the principle of "preliminary exhaustion" (primarily a series of isolating exercises, and then a series of basic exercises were carried out on each "working" muscle group).

The parameters of maximum participants' power potential in test exercises were registered (a general exercise - "a bench press", an isolating exercise - "crossovers").

The research of training load indicators used by the representatives of all three groups during training, was conducted by the method of evaluation of a training load index size in strength sports [7]. The calculation of a load was made on such indicators: external resistance coefficient (Ra), relative weight burden (Wa), size of power load (Wn). The control of the studied indicators was made five times in one month interval during four months of trainings.

The materials of researches were exposed to statistical processing with the use of software "SPSS Statistics". Methods of parametrical statistics defining indicators of an arithmetic average, a statistical uncertainty and confidence level were used

Results of the research.

Values of power load parameters which was used by participants during four months training while performing a series of general exercises ("a bench press") and isolating exercises ("crossovers") are presented in tab. 1.

Table 1

Value of participants' power load parameters in terms of the use of various basic and isolating exercises combination during 4 months training in bodybuilding, (M±m, n=60)

Indicators	Research groups	The stages of control			
		During one month of training	During two months of training	During three months of training	During four months of training
While performing a general exercises "a bench press" during one training					
Wa, kg	control	68,4±6,49	75,78±8,41*	79,84±7,88*	83,48±6,32*
	first experimental	73,04±6,58	79,82±9,43*	85,24±7,68*	89,83±6,43*
		<u>65,73±7,44</u>	<u>71,84±8,53*</u>	<u>76,72±8,71*</u>	<u>80,84±6,49*</u>
second experimental	67,35±6,91	69,88±8,33*	71,69±7,83*	73,44±6,78*	
Wn, kg/min	control	1032,45±26,42	1143,84±27,12*	1205,13±25,82*	1260,00±26,39*
	first experimental	1102,49±29,43	1204,83±28,73*	1286,64±26,43*	1355,92±28,63*
		<u>992,15±24,55</u>	<u>1084,37±26,81*</u>	<u>1158,00±28,95*</u>	<u>1220,22±26,73*</u>
second experimental	1016,60±25,65	1054,79±26,99*	1082,11±27,44*	1108,52±26,43*	
While performing an isolating exercises "crossovers" during one training					
Wa, kg	control	43,97±6,42*	47,04±7,71*	49,68±6,49*	51,52±8,72*
	first experimental	45,64±6,98	49,32±6,41*	52,48±7,89*	55,40±7,63*
		<u>50,72±6,33</u>	<u>54,80±7,48*</u>	<u>58,33±6,67*</u>	<u>61,56±6,09*</u>
second experimental	51,49±6,87	57,25±8,33*	62,69±6,88*	68,00±7,49*	
Wn, kg/min	control	663,69±26,42	710,00±26,42*	749,88±26,42*	777,66±26,42*
	first experimental	688,90±24,83	744,45±26,48*	792,15±25,43*	836,22±26,53*
		<u>765,58±23,73</u>	<u>827,16±26,46*</u>	<u>880,45±26,53*</u>	<u>929,20±26,43*</u>
second experimental	777,20±25,77	864,15±27,56*	946,26±26,43*	1026,56±26,91*	

Note: **0,00** – parameters used during the first half of a month; 0,00 – parameters used during the second half of a month; *- $p < 0,05$, по сравнению с предыдущими показателями.

The analysis of primary results testifies an essential difference between values of relative weight burden (Wa) and size of power load (Wn) indicators while performing isolating exercises at the beginning of the experiment. However, the data concerning power load parameters being used while performing a general exercise, show almost identical results of all athletes that testifies about their identical fitness level and an organism power potential in general.

The change of parameters of relative weight burden (Wa) indicator, which displays the most appropriate apparatus weight for an organism functionality in specified characteristics of power load (training regime), show reliable positive dynamics among participants of all three groups during four months of the research. However, the level of change of a controlled load indicator shows a reliable dependence on a training regime peculiarities. So, the most essential increase of Wa indicator while performing a general exercise during the entire period of the research, is recorded at the representatives of first experimental group (+22,9%) who used an experimental combined training regime. At the same time, the minimum dynamics (+9,0%) of the studied indicator parameters is recorded at the representatives of second experimental group who used the training regime based on "preliminary exhaustion".

At the same time, analyzing the results of dynamics of relative weight burden indicators while performing isolating exercise it was established that the level of their changes in research groups differs from those were recorded using general exercises. So, the most essential increase of controlled load indicators while performing isolating exercise during the entire period of the research is recorded at the representatives of second experimental group (+32,0%) who performed primarily isolating, and then general exercise on "working" muscular group. At the same time, the minimum dynamics (+17,2%) of the studied indicators parameters, is revealed at the representatives of control group who used

standard training regime during 4 months of training (performed primarily general exercise, and then isolating exercise on each "working" muscular group).

Thus, results of the research testify that the size of parameters of power load indicators and nature of their change, in terms of identity of athletes fitness level and training structure, depends on training regime peculiarities (in this research on variable sequence of basic and isolating exercises performance) at the stage of a specialized basic training.

Studying the character and extent of change of an organism power potential during four months of training, the results which depended on training regime peculiarities were received.

In fig. 1 quantitative indices of power potential of all 3 groups representatives while performing a general exercise "a bench press" during four months of training are graphically presented. It is determined that the most positive dynamics of the studied indicator (increase by 27,4% compared with basic data) is observed among representatives of the first experimental group. In turn, similar increase of level of an organism power potential, but with less expressed dynamics is observed among representatives of the control (+22,9% ($p < 0,05$)) and the second experimental (+11,4% ($p < 0,05$)) groups.

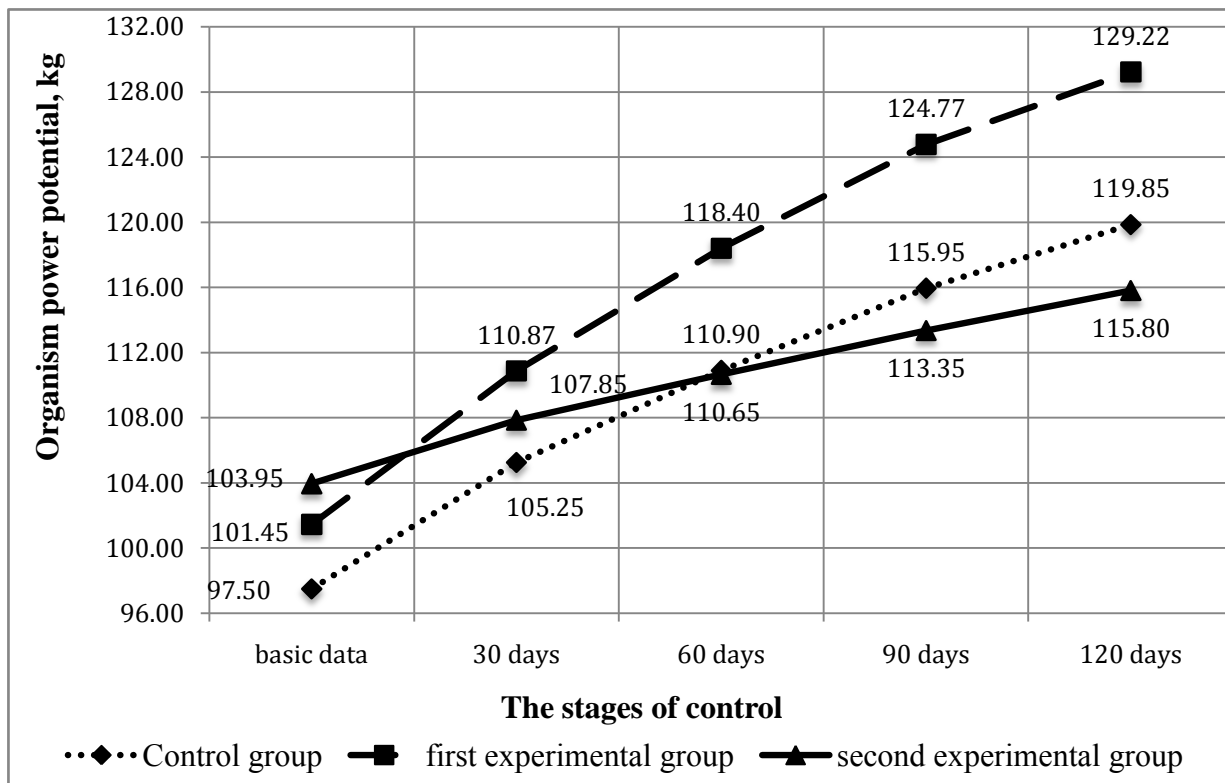


Fig. 1. The dynamics of athletes' power potential while performing a general exercise "a bench press" in terms of the use of various load regimes, $n=60$

Thus, the received results testify that the use of experimental complex training regime based on alternate use of basic and isolating exercises at the stage of a specialized basic training allows athletes to achieve more essential results in comparison with standard (the most often used and universally recognized) regime of physical activity in bodybuilding.

Studying the peculiarities of change of power potential parameters while performing an isolating exercise "crossovers" in terms of various training regimes during four months of training occupations the results which show positive dynamics of a controlled indicator among groups of athletes (fig. 2) were received.

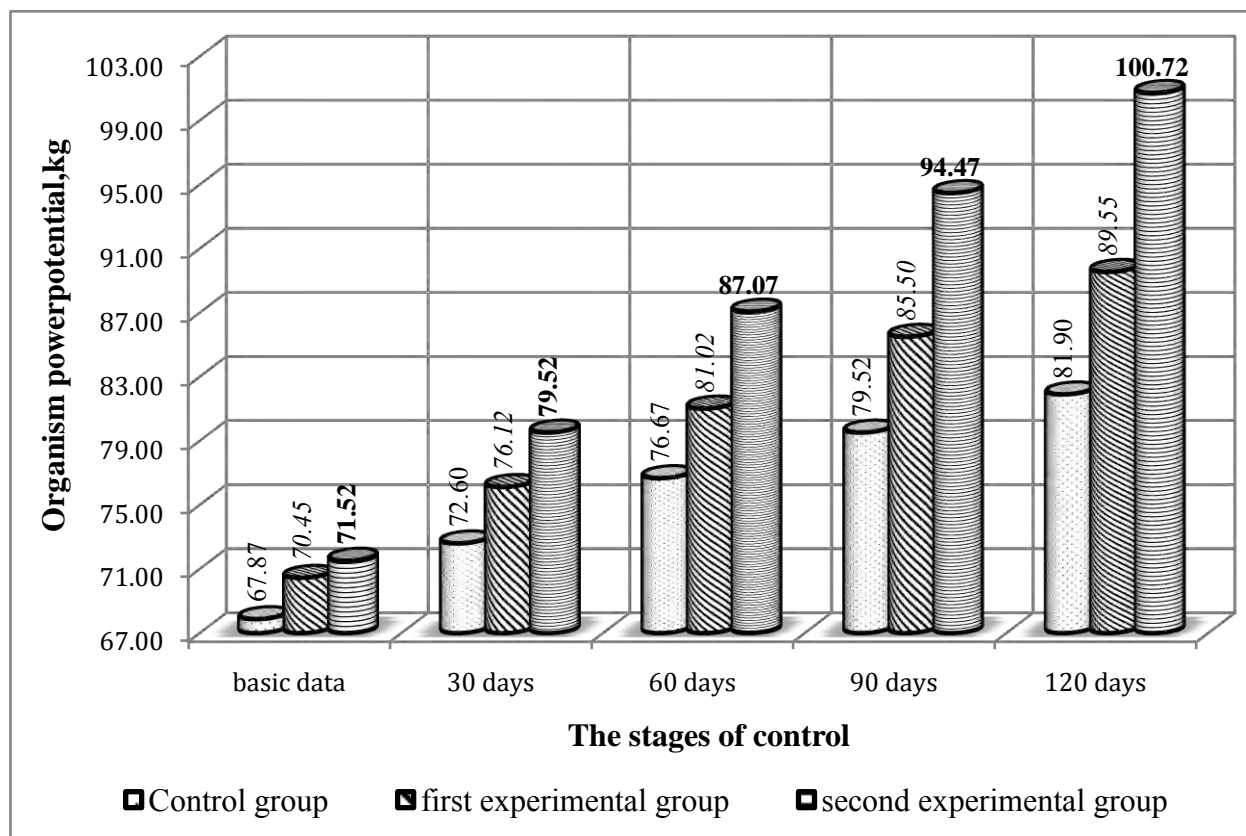


Fig. 2. Dynamics of athletes' power potential performing isolating exercise "crossovers" in terms of various load regimes, $n=60$

According to the received results, at the beginning of researches the representatives of all 3 groups showed almost identical level of a controlled indicator. It was established that most essential increase of power potential performing isolating exercise for pectoral muscles (+40,8% in comparison with basic data) was recorded among representatives of the second experimental group. Thus, the lowest growth of a controlled indicator (+20,6% in comparison with basic data) was shown by representatives of control group. This circumstance testifies that priority use of "preliminary exhaustion" principle allows athletes to double the level of power potential of the working muscular groups performing isolating exercises in comparison with results which were received among representatives of other groups using other training regimes.

Conclusions:

1. It was determined that the size of parameters of power load indicators and nature of their change at the stage of a specialized basic training, in terms of identity of athletes fitness level and training structure, depends on training regime peculiarities (in this research on variable sequence of basic and isolating exercises performance).

2. It was revealed that the use of an experimental complex regime of physical activity with alternate use of basic and isolating exercises throughout no more than 2 micro cycles, makes the most essential positive impact on increase of parameters of bodybuilders' power indicators at this stage of training.

Prospects of further researches. The lack of information in scientific and methodical literature concerning efficiency and expediency of use of various training regimes based on alternate use of basic and isolating exercises at the stage of a specialized basic training, doesn't allow to determine accurately the level of dynamics of athletes' muscle bulk growth in the conditions of burdening reduction in general exercises on account of preliminary training of working muscle group using isolating exercise. At the same time, considering that fact that the main task in bodybuilding at this stage of training is the "rough" growth of muscle bulk, and work with big weight burden only increases the risk of traumatism and developments of pathological processes in terms of muscle tension. Correspondingly, the search of more optimal methods which reduce the parameters of training load, but keep positive dynamics of results growth – is one of the task not only for trainers, but also researchers in this area. The solution of these problems will allow to substantiate the processes of planning and control, and the most important the management of a long-term training process in bodybuilding.

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