PLANNING OF TRAINING LOADS OF SPEED-POWER ENDURANCE OF FOOTBALL PLAYERS IN THE ANNUAL CYCLE OF TRAINING

Abstract. The playing activity of a football player, taking place in conditions of high-intensity loads, cannot but cause corresponding changes in the work of his organs and systems. The fatigue that arises and progresses during the competition affects the effectiveness of technical and tactical actions of the player. Significant expansion of technical and tactical actions with maximum use of playing space, universalization of players necessitates increasing the requirements for special endurance of football players during competitions. Therefore, it seems legitimate to characterize the new trends that have emerged in football and are directly related to the impact of speed-power endurance on the effectiveness of technical and tactical skills of players.

Keywords: footballers, methods, speed and strength endurance, load.

The intensification of competitive activities often leads to the fact that the increase in the volume of movements and technical and tactical actions is not
accompanied by an increase in their efficiency. This is due to the lack of stability of motor skills, and especially those performed in the speed-power mode.

This provision fully applies to the training activities of football players, in which the motor activity of players has also increased significantly. The need to increase the resilience of basic technical and tactical techniques to training sessions can be achieved in targeted special training.

Analysis of scientific and methodological literature shows that so far a lot of work has been accumulated, which addresses the structure of game activity [2, 6], the ratio of activity and efficiency of individual and team technical and tactical actions [5], changes in the scope and effectiveness of game actions [7]. However, the main question - with which exercises to improve the speed and strength of players, as well as the stability of the game in matches has not been studied.

Therefore, at the present stage it is important to study the impact of general and special impact exercises that promote the stability of various manifestations of speed and power qualities and increase on this basis the effectiveness of technical and tactical actions.

At the beginning of the preparation period, all the players of the team were tested: running for 30 and 100 m from a high start, triple jump from a place, jump up from a place, jumps through 10 barriers. A special test of speed-power endurance was also used.

The analysis of the initial data presented in Table 1 showed that some athletes do not have a high enough level of basic physical qualities necessary for the optimal solution of technical and tactical actions.

First of all, it referred to the results of running 30 m from a high start, jumping over 10 barriers and jumping up from a place. The performance of many athletes in the test standards could not meet modern requirements for physical training of football players.

The generalized assessment of the initial indicators of the main physical qualities at the beginning of the preparatory period showed an insufficient level of football players. This fact is further confirmed by the results of in-depth testing of special physical qualities of young football players (Table 2).
So, for example, estimates on such indicators as running on 15 m from a high start and on 15 m on a course did not correspond to the given specifications.

Table 1

Results of physical training of football players in the preparatory period of the first annual cycle

<table>
<thead>
<tr>
<th>Stages of testing</th>
<th>Tests</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I The beginning of the preparatory period</td>
<td>4,40 ± 0,10</td>
<td>7,52 ± 0,26</td>
<td>51,2 ± 1,7</td>
<td>7,4 ± 0,1</td>
<td>12,40 ± 0,18</td>
<td></td>
</tr>
<tr>
<td>II End of the preparatory period</td>
<td>4,10 ± 0,13</td>
<td>8,02 ± 0,31</td>
<td>59,2 ± 2,4</td>
<td>6,2 ± 0,1</td>
<td>12,10 ± 0,11</td>
<td></td>
</tr>
<tr>
<td>III The end of the competitive period</td>
<td>4,70 ± 0,14</td>
<td>7,47 ± 0,27</td>
<td>48,4 ± 1,5</td>
<td>7,7 ± 0,2</td>
<td>13,10 ± 0,21</td>
<td></td>
</tr>
</tbody>
</table>

The magnitude and significance of the difference

| II – I | 0,30 sec | 0,5 m | 8,0c | 0,7 sec | 0,3 sec |
| III – II | -0,60 sec | -0,55 m | -10,8 c | -1,0 sec | 1,0 sec |
| III – I | -0,30 sec | -0,05 m | -2,8 c | 0,3 sec | -0,7 sec |

Note: 1 - running 30 m from the high start (sec); 2 - triple jump from a place (m); 3 - jump up from a place (cm); 4 - jumps over 10 barriers (sec); 5 - running 100 m from the high start (sec).

In the preparatory period of the annual cycle, traditional approaches to the content of training were used. They have led, in some cases, to an increase in the level of speed and strength training.

However, in some cases, these gains were unreliable, and the level achieved did not fully meet modern requirements for physical and, in part, the speed-power training of players in the second league.

Table 2

Dynamics of speed-power qualities manifested in running exercises

<table>
<thead>
<tr>
<th>Stages of testing</th>
<th>Tests</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I The beginning of the preparatory period</td>
<td>3,8 ± 0,1</td>
<td>2,5 ± 0,1</td>
<td>2,0 ± 0,1</td>
<td>8,1 ± 0,3</td>
<td></td>
</tr>
<tr>
<td>II End of the preparatory period</td>
<td>3,7 ± 0,1</td>
<td>2,5 ± 0,1</td>
<td>1,9 ± 0,1</td>
<td>8,0 ± 0,3</td>
<td></td>
</tr>
<tr>
<td>III The end of the competitive period</td>
<td>3,7 ± 0,2</td>
<td>2,4 ± 0,1</td>
<td>1,8 ± 0,1</td>
<td>8,1 ± 0,3</td>
<td></td>
</tr>
</tbody>
</table>

The magnitude and significance of the difference

| II – I | 0,1 sec | - | 0,1 sec | 0,1 sec |
| III – II | - | 0,1 sec | 0,1 sec | 0,1 sec |
| III – I | 0,1 sec | 0,1 sec | 0,2 sec | - |

Note: 1 - running 30 m from the course (sec); 2 - 15 m run from the high start (sec); 3 - running 15 m from the course (sec); 4 - 60 m run from the high start (sec).
Analyzing the results of physical training at the beginning of the preparatory period, the end of the preparatory and competitive period, they differ significantly, this affected the team’s performance in the championship.

If you compare the number of points scored by the team in the first round and in the second, it decreased significantly. As a result, the team that was in second place in the standings after the first round of the championship, dropped to sixth place by the end of the championship.

Thus, speed-power endurance to some extent affects the result of the team. Thus, the data on the level of development of speed-power qualities at the end of the competitive period emphasized their inconsistency with modern requirements for footballers.

Before proceeding to a direct description of the main direction of the experimental method of training football players, it is necessary to dwell on some fundamental issues concerning the choice of means, methods and conditions of sports training, taking into account the leading factors of competitive football.

Today it is becoming obvious that before preparing an athlete for competitions, you need to know the conditions of martial arts. It is necessary to include features of requirements to separate functions and systems of an organism of the football player, features of power supply and activity of the neuromuscular device, and also use of the basic technical arsenal of technical and tactical receptions applied during competitions.

Only on this basis it is necessary to build all the technology of the training process. Therefore, a methodologically correct approach will be in the organization of training, which will be based on the idea of competitive activities of football players.

V.N. Platonov notes: "that every sport requires the development of certain skills and motor skills, physical qualities (endurance marathoners, strength athletes), each sport forms and develops its characteristic qualities and motor skills only in the process of special activities" [11].

This approach is especially important also because only in competitive activities there is a maximum stress of psychophysical functions of the athlete and
only extreme conditions of sports confrontation can reveal the functional stability, effectiveness of the athlete and their reliability in responsible competitions.

However, the improvement of "leading" bodies and systems that perform the main load in a particular sport, in training close to competitive activities, will in turn contribute to a more stable functioning of these systems, which will ultimately have a decisive impact on sports efficiency and efficiency of technical and tactical actions.

Pedagogical observations conducted by specialists from different countries have shown that the competitive activity of football players is characterized by the following parameters: the volume of fast running - from 600 m to 2000 m, the number of technical and tactical actions performed by athletes - 80-160 [1].

Technical, tactical and motor activities of football players will be effective only if these volumes are either reproduced at the competitive level or significantly exceeded during training sessions.

This is stated in a number of works by leading experts in the field of football [9, 10]. According to them: "one of the main directions in the training of highly qualified players is the implementation of such volumes of speed and strength endurance, which are dictated by the conditions of competitive activity and increase the efficiency of technical and tactical actions in long tournament competitions."

In this regard, it is recommended to have in the training process the amount of speed and power work, which is equal to 2000-3000 meters. Similar recommendations have been repeatedly expressed by other experts [3, 4].

In accordance with this statement, the content of the experimental training method, substantiated in the work, suggested:

1. increase the amount of speed work in training and competitive games, as well as in complex game exercises;

2. achieve a relatively stable speed of all jerks and accelerations during matches.

Therefore, in the development of experimental methods, we sought to ensure that the speed and power nature of the work in its scope took one of the leading places in the structure of the means of training players.
Based on the above theoretical considerations, an experimental technique was developed and applied, the content of which is considered below. Its features were significant in terms of volume of load, aimed at the development of basic physical qualities, as well as to improve their stability in training and competition. For this purpose, exercises of speed and strength with variable intensity, performed by different methods, were used.

The preparatory period was built on the basis of the principles of sports training. It was divided into two stages (general-preparatory and special-preparatory) with retracting, basic, and control-preparatory mesocycles.

The nature of the dynamics of means throughout the preparatory period changed as follows: decreased the partial volume of the general and increased the volume of the special direction of speed and strength exercises.

The content of sports training included exercises of both general and special exercises of experimental methods, which involves speed-power work of varying duration. This included exercises of repeated-variable nature, with accelerations, during which it is necessary to perform basic technical and tactical actions. At the same time, the nature and duration of rest between exercises changed according to the principle of increasing rigid rest intervals.

Based on the general trends in the dynamics of the volume and intensity of loads in the preparatory period, as well as the specifics of competitive activities of the player, the distribution of loads took into account not only their volume but also intensity, which was assessed and adjusted by heart rate.

According to bioradiotelemetric studies, the heart rate of football players during training and control games is in the range of 110-204 beats / min [8,12]. It is possible to consider that at competitions in extreme conditions the heart rate reaches higher indicators. Therefore, it was considered necessary to plan the maximum intensity of speed and strength exercises at a level corresponding to a heart rate of 200-220 beats / min. Variations in heart rate could vary depending on the nature of the work and the stages of preparation. On average, the impact of the load led to fluctuations in heart rate in the range from 140 to 220 beats / min.

During the whole preparatory period, depending on the direction of training,
there is a change in the intensity of exercises for different types of training. At the same time, exercises of general influence were performed with heart rate at the level of 144-160 beats / min, and in exercises of special nature the heart rate increased to 173-200 beats / min. Performing exercises of technical and tactical nature was at a heart rate of 144 to 200 beats / min.

It should be noted that the exercises of general influence were performed by football players throughout the preparatory period with a small range of heart rate fluctuations in microcycles. Exercises of special speed and strength orientation were performed with a gradual increase in intensity, which by the end of the general preparatory stage reached maximum values and stabilized.

The whole period was divided into three major stages.

The first stage is retracting (two weeks). The direction of the loads at this stage is mainly aerobic, the amount of exercise loads is medium and low. The ratio of specific and non-specific exercises - 45% : 55%.

The second stage is general preparatory (seven weeks). The direction of the loads at this stage is mainly mixed and aerobic. The magnitude of the load changes in waves: from medium (in the first, third, fifth week) to large (in the second, fourth, sixth week). The seventh week is unloading. The ratio of specific and non-specific exercises - 60% : 40%.

The third stage is special preparatory (seven weeks). The direction of loads at this stage is mainly mixed (with the advantage of the speed-power component). The magnitude of the load varies: from medium (in the first, third, fifth and sixth week) to large (in the second and fourth week). Seventh week (pre-competition) - a small load. The ratio of specific and non-specific exercises - 70% : 30%.

**Conclusion.** A method of training qualified football players has been developed and experimentally substantiated, aimed at increasing the level of speed-power endurance. Its defining features are the following:

a) increase in the preparatory period from 20% to 45% of the partial volume of speed-power exercises, performed mainly in repeated mode;

b) the use in intergame cycles of at least 80% of special training tools, half of which should consist of speed-power exercises. It is advisable to perform them in an
interval mode, using reduced rest intervals.

The optimal ratio of loads depending on their specialization at each of the three stages of the preparatory period is determined:

a) retracting stage - 45% of specialized exercises;
b) general preparatory stage - 60% of specialized exercises;
c) special preparation stage - 70% of specialized exercises.

Further research should be aimed at improving the methodology for developing special endurance of football players at the stages of the annual training cycle.

References:


