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THE MOTOR ABILITIES CHANGE OF SOCCER PLAYERS DURING THE SUMMER PREPARATION PERIOD

Abstract
Condition training is a complex and comprehensive process of implementing several programs for developing and maintaining functional and motor abilities. The subject of this research is the impact of the conducted training plan and program during the summer preparation period on motor abilities changes with soccer players of FC “RAD” in Belgrade. The sample of subjects consisted of twenty senior players, FC “RAD” in Belgrade. The first test (T1) was carried out at the beginning of the preparatory period, while the second test (T2) was carried out at the end of the preparatory period. Motor skills that affect the efficiency of expression in soccer, speed, strength, agility, flexibility and endurance were evaluated by selected tests. In the preparatory period 55 field training and 14 training sessions in the gym were realized. The obtained results indicate the major or minor changes that took place during the summer preparation period. The changes that occurred as a consequence of training are different depending on the test. In the preparation period, between T1 and T2 the greatest positive change 6.70% was recorded in the Yo-Yo intermittent recovery test level 1, while negative -11% in the series of vertical jumps test and these changes are statistically significant.

Key words: SOCCER / TESTING / MOTOR SKILLS / TRAINING / PREPARATION PERIOD /

INTRODUCTION

Soccer is a phenomenon that unites the whole world and it is one of the most popular sports (Bangsbo, 1994b). It is played by women, children and adults at different levels of training. Soccer popularity and widespread playing is owed to relatively few material and technical requirements.

The preparatory period is a part of the annual macro-cycle, during which the athletes are exposed to the training process; they do not appear in official competitions, but are preparing themselves for what lies ahead during the competition period. The competition period is a part of the annual cycle of training in which the athletes train, take part in official competitions, when they need to express stable physical fitness and achieve optimal competitive results.

For successful performance of specific tasks during games, athletes must possess appropriate abilities. Abilities of the players are classified into four groups: technical, tactical, psychosocial and motor (Bangsbo, 1994a). In order to be able to display the first three of these abilities, a soccer player must possess a high level of condition preparation. Condition training in soccer implies soccer player’s psychosomatic conditions, i.e., the functional state of soccer player’s body, in which motor abilities are well-developed and neural reserves are sufficiently
preserved. The task of condition training is the transformation of functional and motor abilities. It is important to choose the methods and means for achieving the highest level of positive adaptable changes. Studies have shown that, in the past few years, significant changes have occurred in athletes’ conditional preparation. They can be observed both in elite soccer players, who compete in the world highest quality leagues, as well as among players in lower-level soccer competitions.

The average distance covered during the match in elite players ranges from 10 to 12 km (Ekblom, 1986, Reinzi et al., 2000). The distance during the game can be analyzed through several levels of intensity (Ekblom, 1994): walking (6 km/h), jogging (8 km/h), running at low speed (12 km/h), running at medium speed (15 km/h), running at high speed (18 km/h) sprint (30 km/h) and other activities (jumping, changing direction, stopping, duel game, etc.). These data suggest that there can be many variations concerning the intensity of movement in the distance covered during the game.

However, although the low intensity movements are dominant in the course of the match, during participation in game actions, the dominate activities are those of sub maximal and maximal intensity (Reilly, Bangsbo, & Franks, 2000). During the game, a player makes between 1400 and 1600 intensity and direction changes, which indicates a movement shift every 3.5 to 4 seconds (Verheijen, 1998), which differs slightly from the fact that players sprint averagely every 90 seconds and have high intensity efforts every 30 seconds (Reilly, Bangsbo, & Franks 2000). These data illustrate the interval character of soccer games, as well as the need for high level of specific endurance, which enables the players to move with different intensity during a longer period of time.

On the other hand, although players usually spend only about 1 km in sprint, they make up to 100 sprints during the game, while most of them are 10 meters in length, and only a small number of the sprints are over 30 meters, in which the maximum speed is prominent (Ekblom, 1994).

Condition training is a complex and comprehensive process of implementing several programs for developing and maintaining functional and motor abilities, as well as morphological characteristics (Stefanovic, & Jakovljevic, 2004). The main task of all programs is improvement of trainings and results, improvement of general, targeted and specific abilities and characteristics that are essential for successful participation in training and competition activities. Testing in sport is conducted to determine motor abilities and morphofunctional characteristics of individuals, i.e., to check the impact of the training program and obtain objective information about each individual (Reilly, & Thomas, 1976). According to the results it is possible to plan a shorter or longer training period in accordance with the latest scientific research. Motor abilities, important for a successful soccer practice can be assessed using specific field tests intended for soccer players, as well as other field tests by which the validity and reliability are confirmed. Field tests are designed in such away to be similar to the character of the activities that the players perform in the game. In addition to these reasons, the tests have an important role in the process of identifying and developing talents in soccer.

By determining the changes in physical capacity during a certain period (half-season, a season or a longer period), reliable indicators of training programs impact for soccer players may be obtained, the state of each individual involved in the program can be observed (Bangsbo, Mohr & Krustrup 2006). The importance of studying this problem is reflected both in the improvement of training programs, and for other professional and scientific analysis. Based on the studies that dealt with this problem (Heller, Procza, Bunc, 1992, Casajus, 2001, Clark, Edwards, Morton & Batterly 2008) it may be concluded that this issue arises interest. The authors of these works have not used field tests only, but a combination of field and laboratory tests.

By determining the changes in motor skills, in this case during the preparatory period, reliable indicators of training programs impact in soccer players can be obtained, and the insight into the morphofunctional and motor abilities of each individual involved in the program can be made (Bangsbo, 1994). Bearing in mind the advantages, it can be concluded that field tests are suitable for motor abilities of soccer players. In this study, only the field tests and motor abilities important for the efficiency in soccer were used and evaluated.
METHOD

Problem, subject, goals and tasks of research

Problem of the research refers to changes in motor abilities during the summer preparation period resulting from the application of different methods and tools used in training (Helgerud, Engen, Wisløff & Hoff 2001). The preparation period consisted of general, focused and specific resources for the development of motor abilities.

The subject of the research is the impact of the conducted training plan and program during the summer preparation period on the change of motor abilities of FC “RAD” soccer players in Belgrade.

The research goals were focused on:

- the analysis of training during the preparation period,
- the research of characteristics of motor abilities changes during the preparation period,
- the research of correlations of changes in motor abilities and training programs during the preparation period.

The research tasks were:

- to choose the appropriate group of subjects,
- to assess subjects motor abilities in two separate tests,
- to establish a database for statistical analysis,
- to conduct a statistical data analysis,
- to conduct a qualitative analysis of the results.

Hypotheses of the research

In accordance with the results of previous researches, based on the objectives of this research, we formed two hypotheses:

H1 - motor abilities of players are changing during the summer preparation period

H2 - training programs for developing motor abilities affect the character of change in motor abilities.

Sample of subjects

Sample of subjects consisted of twenty seniors (hereinafter referred to as subjects) of FC “Rad” from Belgrade who compete in Super league, of average age 20.83 (±2.48) years, average body height 181.70 (±6.88) cm and body mass 76.76 (±7.53) kg. They were tested in two separate tests during summer preparation period. Before the tests all the subjects had medical examination and health problems were not reported. Before the tests, they had warm up exercises that lasted 15 minutes. The first test (T1) was performed at the beginning of the preparation period (end of the first week of the preparation period). The second test was performed at the end of the preparation period (10 days before the beginning of autumn competition half season). Both tests were performed on artificial grass in light sports equipment adjusted to the weather conditions, at the same time of the day, between 10 and 12 o’clock.

Tests selection

Tests were selected in such way to evaluate motor abilities that influence efficiency in soccer (Hof, 2005, Neto, Nunes and Hespanhol, 2007): speed strength, agility, endurance. The following tests were used: 10-metre standing start sprint (10S), 20-metre crouch start sprint (20FS), 30-metre standing start sprint (30S), half squat vertical jump (VJ), vertical jump and half squat (VJH), vertical jump with arms swing (VJS), series of vertical jumps (7SJ), running with movement direction change (ZZ), ball carrying with movement direction change (ZZB) and YO-YO intermittent test of recovery level 1.

Data processing

The acquired data were processed by descriptive and comparative statistics technique. Mean values and standard deviations were calculated for all mentioned variables. For the determination of statistic importance of acquired changes, Microsoft Excel was used, and out of statistic procedures we used T test with the statistic importance level p<0.05.
RESULTS AND DISCUSSION

Tests results in monitoring periods (T1 and T2) are presented in table 1. Mean values and standard deviations were presented for selected tests. The results indicate that the biggest changes in the period between T1 and T2 were acquired in the test for players’ endurance evaluation (Yo–Yo intermittent test of recovery level 1) and in test Vertical jump. The smallest positive changes were acquired in the test 30-metre standing start sprint during the same monitoring period. The only significant results decrease in this period compared with T1 was acquired in the test Series of vertical jumps (7SJ). Statistically significant changes between T1 and T2 were registered in Yo–Yo intermittent test of recovery level 1 and series of vertical jumps (p<0.05). It is necessary to mention that two days before the second test the players had trainings with the accent on aerobic and anaerobic abilities. Considering the periodic character of training process, tests were planned before these trainings. But, it was not possible due to technical difficulties, so as a result of the subjects’ tiredness, some results were worse than expected.

Table 1  Arithmetic mean and standard deviations for the applied tests in measuring periods (T1 and T2). Symbol * marks statistically significant difference between the two tests (p<0.05).

<table>
<thead>
<tr>
<th>Tests</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 S</td>
<td>1.740(±0.065)</td>
<td>1.750(±0.057)</td>
</tr>
<tr>
<td>20 LS</td>
<td>2.420(±0.084)</td>
<td>2.410(±0.082)</td>
</tr>
<tr>
<td>30 S</td>
<td>4.170(±0.128)</td>
<td>4.160(±0.123)</td>
</tr>
<tr>
<td>VS</td>
<td>32.20(±4.059)</td>
<td>33.40(±3.743)</td>
</tr>
<tr>
<td>VSP</td>
<td>38.70(±4.388)</td>
<td>38.50(±4.612)</td>
</tr>
<tr>
<td>VSZ</td>
<td>45.20(±4.364)</td>
<td>45.90(±4.745)</td>
</tr>
<tr>
<td>7 SS</td>
<td>36.30(±3.329)</td>
<td>32.70(±3.309) *</td>
</tr>
<tr>
<td>CC</td>
<td>5.07(±0.217)</td>
<td>5.00(±0.182)</td>
</tr>
<tr>
<td>CCL</td>
<td>6.54(±0.172)</td>
<td>6.46(±0.264)</td>
</tr>
<tr>
<td>YO-YO</td>
<td>2042(±433.71)</td>
<td>2179(±402.24)</td>
</tr>
</tbody>
</table>

The test results suggested certain changes, which occurred during the summer preparation period. In different tests, bigger or smaller changes of the results were obtained.

In the test 10-metre standing start sprint (10S), a significant difference between test (T1) 1.740 seconds, and (T2) 1.750 seconds was noted; i.e. a reversible character of changes. The difference of scores between T1 and T2 was (-0.57%).

In the test 20-metre crouch start sprint, the results indicated the improvement for the observed periods of measuring. Figure 2 shows that the average time is different for each test as follows: 2.420 seconds (T1), and 2.410 seconds (T2). Besides, change of the results of 0.41% between T1 and T2 can be seen.

The results of these two tests (10S and 20LS) indicate that there are no significant differences between these results and the results obtained in studies carried out with elite players.

In the test 30-metre standing start sprint (30S), there is a slight difference between the tests (T1) 4.170 seconds and (T2) 4.160 seconds. The difference of scores between T1 and T2 was 0.24%. Changes in results were not statistically significant.

The results of the test half squat vertical jump (VJ), showed improved outcomes for the different periods of measurement. The mean values found by tests were: 32.20 cm (T1) and 33.40 cm (T2). The results showed an increase between T1 and T2 to 3.73%. The results of the test half squat vertical jump (VHJ) showed the opposite character of changes in the test results for the different periods of measurement. The mean values found by tests were: 38.70 cm (T1), 38.50 cm (T2), which was the deterioration of - 0.52%. The results of the test vertical jump with
arms swing (VSZ) indicated the improvement of results for the different periods of measurement. The mean values found by tests were: 45.20 cm (T1) and 45.90 cm (T2). Changes between tests T1 and T2 were 1.55%. Changes of the obtained results of the tests for the assessment of explosive muscles legs strength were not statistically significant.

In the test series of vertical jumps, there was a negative character of changes of the results obtained from the different periods of measurement. The mean values found by tests were: 36.30 cm (T1) and 32.70 cm (T2). The change between T1 and T2 was negative and amounted to -11.00%. The change of the obtained result was statistically significant.

In the test running with movement direction change, mean results were: 5.070 seconds (T1) and 5.000 seconds (T2). The change of scores between T1 and T2 was 1.4%. Changes in the results between the T1 and T2 were not statistically significant (p <0.05). In the test ball carrying with movement direction change, recorded results showed a similar character changes as well as in the previous test, for the different periods of measurement. The results were: 6.540 seconds (T1) and 6.460 seconds (T2). The change of scores between T1 and T2 was 1.23%. Changes in the results of the tests running with movement direction change with and without the ball were not statistically significant.

In the Yo–Yo intermittent test of recovery level 1, the mean results of the tests were: 2042 m (T1) and 2179 m (T2). The change between tests T1 and T2 was 6.70%. The change between T1 and T2 was statistically significant (p <0.05). The results obtained in the test were similar to those obtained in studies conducted with elite players (Krusterup, Mohr, Amstrup, Rysgaard, Johansen, Steensberg, Pedersen, 2003).

Analysis of training program

The summer preparation program of the seniors of FC “Rad” for the competitive season of 2008-2009 was realized from 14th July to 17th August 2009, in five training phases, with each phase lasting for 7 days, as follows:

- basic general training period 1 - from 14th to 20th July 2008 in Belgrade, where at the end of a micro cycle one control match with a team from the Czech Republic was played,
- main (high intensity) preparation period 1 - from 28th July to 3rd August 2008 in Slovenia, where three control matches with a team from Israel, and national teams of Bahrain and Slovenia were played,
- main (high intensity) preparation period 2 - from 4th to 8th August 2008 in Belgrade, where a control game with a team Srem from Sremska Mitrovica was played,
- pre competitive period - from 11th to 17th August 2008 in Belgrade, where at the end of the period a match of the first round of the new season was played.

In this period (from 14th July to 17th August 2008) a total of 55 field training with the general scope of time 91:46:50 (hour: min: sec) of training process was realized, with the total running of 277.70 km. The average volume of running was 4.970 m per a separate training, while the individual training on average lasted 1:39:02 (hrs: min: sec).

Additionally, 14 training sessions in the gym were realized in this period. Work duration in the gym was 11:09:00 (hour: min: sec), and individual training lasted 51min on average.

In total, during the preparation cycle for the period from 14th July to 17th August 2008 a total of 69 training sessions with the summed time volume of 102:55:50 (hrs: min: sec) was realized. Trainings were realized during the period of 32 days (not counting the days for a break, vacations, travel), and the average daily duration of training (including matches) was 3:20:50 (hours: minutes: seconds). In table 2 the structural indicators of the amount of training work compared to the realized training phases were displayed.
Table 2. Structural indicators of the amount of training work compared to the realized training phases.

<table>
<thead>
<tr>
<th>Period</th>
<th>No. of trainings</th>
<th>Overall training and matches</th>
<th>Average training duration</th>
<th>Sum of duration volume</th>
<th>Average of work volume (m)</th>
<th>Sum of work volume (km)</th>
<th>No. of trainings</th>
<th>Average training duration</th>
<th>Sum of duration volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic OPP 1</td>
<td>14.07.- 20.07.</td>
<td>11</td>
<td>12</td>
<td>1:45:00</td>
<td>21:00:00</td>
<td>5.450</td>
<td>65,40</td>
<td>3</td>
<td>0:50</td>
</tr>
<tr>
<td>Basic OPP 2</td>
<td>21.07.- 27.07.</td>
<td>11</td>
<td>12</td>
<td>1:50:47</td>
<td>22:09:00</td>
<td>6.680</td>
<td>80,16</td>
<td>3</td>
<td>0:55</td>
</tr>
<tr>
<td>High intensity RR 1</td>
<td>28.07.- 03.08.</td>
<td>9</td>
<td>3</td>
<td>1:35:14</td>
<td>19:03:00</td>
<td>4.260</td>
<td>51,12</td>
<td>3</td>
<td>0:59</td>
</tr>
<tr>
<td>High intensity PP 2</td>
<td>04.08.- 10.08.</td>
<td>10</td>
<td>2</td>
<td>1:36:00</td>
<td>19:02:00</td>
<td>4.360</td>
<td>52,32</td>
<td>3</td>
<td>0:59</td>
</tr>
<tr>
<td>Pre competitive</td>
<td>11.08.- 17.08.</td>
<td>6</td>
<td>1</td>
<td>1:28:50</td>
<td>10:32:50</td>
<td>4.100</td>
<td>28,70</td>
<td>2</td>
<td>0:30</td>
</tr>
<tr>
<td><strong>SUM</strong></td>
<td><strong>32</strong></td>
<td><strong>47</strong></td>
<td><strong>55</strong></td>
<td><strong>1:39:02</strong></td>
<td><strong>91:46:50</strong></td>
<td><strong>4.970</strong></td>
<td><strong>277,7</strong></td>
<td><strong>14</strong></td>
<td><strong>0:51</strong></td>
</tr>
</tbody>
</table>

Table 3 displays the basic indicators of general, focused and specific training work, compared to the realized training phases.

Table 3. Presence of general (running without the ball), focused (soccer-specific movements and technique drills) and specific (parts of the game or game) training work, compared to the realized training phases.

<table>
<thead>
<tr>
<th>Period</th>
<th>No. of trainings</th>
<th>General</th>
<th>Focused</th>
<th>Specific</th>
<th>General</th>
<th>Focused</th>
<th>Specific</th>
<th>Presence of focused specific work in training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic OPP 1</td>
<td>14.07.- 20.07.</td>
<td>1800</td>
<td>1650</td>
<td>2000</td>
<td>33.02</td>
<td>30.27</td>
<td>36.69</td>
<td>3650 66.96</td>
</tr>
<tr>
<td>Basic OPP 2</td>
<td>21.07.- 27.07.</td>
<td>2200</td>
<td>2148</td>
<td>2332</td>
<td>32.93</td>
<td>32.15</td>
<td>34.91</td>
<td>4480 67.06</td>
</tr>
<tr>
<td>High intensity PP 1</td>
<td>28.07.- 03.08.</td>
<td>343</td>
<td>2323</td>
<td>1594</td>
<td>8.05</td>
<td>54.53</td>
<td>37.41</td>
<td>3917 91.94</td>
</tr>
<tr>
<td>High intensity PP 2</td>
<td>04.08.- 10.08.</td>
<td>326</td>
<td>1785</td>
<td>2249</td>
<td>7.47</td>
<td>40.94</td>
<td>51.58</td>
<td>4034 92.52</td>
</tr>
<tr>
<td>Pre competitive</td>
<td>11.08.- 17.08.</td>
<td>300</td>
<td>1800</td>
<td>2000</td>
<td>7.31</td>
<td>43.90</td>
<td>48.78</td>
<td>3800 92.68</td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>994</strong></td>
<td><strong>1941</strong></td>
<td><strong>2035</strong></td>
<td><strong>17.75</strong></td>
<td><strong>40.35</strong></td>
<td><strong>41.87</strong></td>
<td><strong>3976</strong></td>
<td><strong>82.22</strong></td>
</tr>
</tbody>
</table>
Presence of general work-rate was present to a great extent only in the first two weeks, with 1800 and 2200 meters per training session i.e., with 33.03 and 32.93 % of overall training work respectively. In the same period focused and specific work (together) were represented with 66.96 and 67.06 %. In other periods, general work was represented in small volume i.e., with 8.05; 7.47 and 7.31 % of overall training work.

Focused and specific work (together) dominated during the preparation, especially in the last 3 weeks of work, with 3917, 4034 and 3800 meters per training, which makes 91.94; 92.52 and 92.68 % of overall training work.

Table 4. Indicators of the training structure in function of specific work elements, i.e., technique and tactics of the game of soccer compared to the realized training phases.

<table>
<thead>
<tr>
<th>MINUTES OF WORK</th>
<th>% of TRAINING WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic OPP 1</td>
<td>0:23</td>
</tr>
<tr>
<td>Basic OPP 2</td>
<td>0:20</td>
</tr>
<tr>
<td>High intensity</td>
<td>0:05</td>
</tr>
<tr>
<td>PP 1</td>
<td>0:20</td>
</tr>
<tr>
<td>Pre competitive</td>
<td>0:13</td>
</tr>
</tbody>
</table>

SUM per elements

| 13:26:00        | 14:23:00   | 8:58:00 | 12:50:00 | 13:16:00 | 63:48:00 |

55 field trainings were realized in the preparation period. According to structural indicators, 63:48:00 (hour:min:sec) i.e., 1:22:00 (hour:min:sec) time per training was spent on the elements of specific work, on average, that being 81.94% of overall training work.

Structural indicators of training work show that:

- 13:26:00 (hour:min:sec), i.e. 16 minutes per training on average was spent on technique with ball, which makes 16.18% of overall training work,
- 14:23:00 (hour:min:sec), i.e. 17 minutes per training on average was spent on specific movements technique, which makes 18.40% of overall training work,
Figure 1: Structure of training loading compared to the applied microcycles represented by percentages of presence of general (running without the ball), focused (soccer-specific movements and technique drills) and specific (parts of the game or game) of the realized training work.

Change of acquired results analysis

Changes that appeared as a result of training are different depending on the test. In the preparation period, between T1 and T2, the biggest positive changes were recorded in YO-YO intermittent test of recovery level 1, while negative ones, -11%, in test series of vertical jumps (7SJ) and these changes are statistically significant.
Figure 2: Relative differences in the applied tests between T1 and T2 measurings.

Researches carried out on elite soccer players (Bangsbo 1994b; Helgerud, Engen, Wisloff & Hof. 2001; Wisloff, Helgerud & Hof 1998) indicate the importance of YO-YO intermittent test of recovery level 1. These researches prove the connection between teams’ success in a competition and VO2max. By comparing the change of 6.70% in this test, it can be concluded that this ability was mostly developed in trainings with the accent on 5 vs. 5 game or 4 vs. 4 game as well as running without the ball. Also, control matches and trainings focused on the development of technical and tactic abilities, according to their intensity and character, may have the impact on such change.

In tests Running with movement direction change, Ball carrying with movement direction change, the change of 1.4% and 1.23% was acquired. These results changes can be credited to the positive impact of strength trainings that were applied for overall 11:09:00 (hour:min:sec) and training for technique development, that made 40.35% of the realised training plan.

In tests where legs muscles strength was evaluated, the recorded differences indicate to significantly smaller changes compared to endurance. Individually, the tests recorded the following changes: Half squat vertical jump 3.73%, Vertical jump and half squat -0.52%, Vertical jump with arms swing 1.55% and certainly the most worrying thing and the test where the biggest difference between T1 and T2 was noticed, Series of vertical jumps -11%. According to these data, it can be concluded that strength trainings did not influence the strength tests results to the extent as with the endurance trainings. It should be mentioned that the results acquired in several studies show that the trainings focused on the development of endurance inhibit the abilities that require strength display.

In sprint tests, the following changes were recorded: 10-metre standing sprint -0.57%, 20-metre crouch start sprint 0.41% and 30-metre sprint 0.24%. These results changes, considering the length of running track, can be credited mostly to speed trainings, speed trainings with the ball and strength trainings. The studies showed that with top soccer players, the thing that is very important is the relation between sprint up to 30 metres, maximum strength of legs extensors and vertical jump height.

CONCLUSION

The principal aim of this paper was to investigate the character of motor abilities changes in the preparation period. It was conducted on a sample of 20 senior soccer players of the FC „Rad“ from Belgrade. The battery of tests for assessment of strength, speed, agility and endurance was applied. The tests were conducted at the beginning and at the end of
preparation period. The data were elaborated by descriptive and discriminative statistic procedures.

The research results indicated to improvement of majority of motor abilities in the observed measurement periods.

The obtained results indicate that motor abilities of soccer players vary during summer preparation period. The character of such changes is different. Training programs affect the character of motor abilities changes, but these changes are not always proportional.

The greatest positive changes in the preparation period were obtained in the endurance tests, while the negative ones occurred in the test Series of vertical jumps.

Of all the changes resulting from training, only the changes in Yo–Yo intermittent test and Series of vertical jumps were statistically significant.

The analyzed training program for the preparation period indicates to different work-rate trainings. The most represented were the trainings focused on the specific work elements (technique, tactics and game).

Taking into account the occurrence of trainings in preparation period, as well as the character of results changes for this period, it can be concluded that the training sessions affected most endurance, and slightly less speed and strength.

The obtained changes of the results of selected tests confirm the presented hypothesis. The character of the changes is different, as well as the influence of training for the observed measurement period.

Of all the trainings oriented to motor abilities development, soccer players were most affected by endurance training 4 vs. 4 and 5 vs. 5 in several series, intensity ranging from 90 % to 95 % of maximal pulse.

The tests was performed in order to establish motor abilities changes in the course of preparation period. The test results were to serve as indicators of training process impact on soccer players and to assist in better insight in the current state of each individual. The explanation for “insignificant” changes between the two tests can be found in the facts that the previous season lasted longer due to barrage competitions, so that the players were ready to a great extent for the preparations, and in the second test, the players came under the fatigue due to the training process in the precedent two days.

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