

SOCCKER GAME CHARACTERISTICS AND PLAYERS' PERCEPTION ON ARTIFICIAL TURF AND NATURAL GRASS

Clemens Müller, Thorsten Sterzing, Alexander Kunz and Thomas L. Milani

Department of Human Locomotion, Chemnitz University of Technology, Chemnitz, Germany

email: clemens.mueller@phil.tu-chemnitz.de, web: www.tu-chemnitz.de

INTRODUCTION

In recent years 3rd generation artificial turf becomes more popular in soccer. Biomechanical studies show that different surfaces alter the movement of players with regard to plantar pressures and ground reaction forces [1,2]. The influence of artificial turf on game characteristics are controversially discussed in the media and by coaches and players. Game characteristics can be investigated by video or computer based methods but also by use of observation forms. In addition to that it is important how players perceive these potentially altered game characteristics. FIFA reported for 2-Star surfaces the similarity of game characteristics on artificial turf (AT) and natural grass (NG) for top level game play [3]. For sub-elite level of play, Andersson et al. (2008) reported differences in playing style and also in players' perceptions between both surface types. They observed more short passes and fewer sliding tacklings on AT. Players perceived AT to allow lesser ball control and to require greater physical effort. In general, there is a lack of studies that investigate the game characteristics on AT compared to NG on amateur level. Thus, the purpose of this study was to carry out (a) a game analysis and (b) a players questionnaire comparing soccer on AT and NG at amateur level.

METHODS

(a) 26 games (13 AT, 3rd generation, 13 NG) of 5th to 7th German soccer league were monitored by a soccer expert positioned at the midline when observing the games. Items of the following game categories were recorded on an observation form: Passing/kicking, playing aggressiveness, and net playing time. Passing was categorized as low (<0.5m) or high (>0.5m) and short (<10m) or long (>10m). Additionally, kicks on goal and clearances were recorded separately. Playing aggressiveness referred to sliding tacklings and fouls committed. Independent t-tests were used to compare the variables recorded on both surfaces ($p < 0.05$). (b) 95 soccer players, experienced on both surface types, were questioned about their general perception of game characteristics on AT compared to NG. The quantity of short passes, long passes, sliding tacklings, and fouls on AT should be stated as more, equal or less compared to NG. Here, descriptive statistics were applied.

RESULTS AND DISCUSSION

There was no difference in net playing time (AT: 45.45min to NG: 45.56min), which allowed to directly compare the absolute values of items observed on both surfaces. The total number of passes showed no significant difference between the two surfaces (total number of passes AT: 451.5 ± 74.6 , NG 495.9 ± 77.9). Also, the different passing categories did not differ due to surface type. However, the majority of players perceived short passes to occur more frequently on

AT, whereas long passes were perceived to occur less frequently on AT (Fig.1). The quantity of goal kicks was increased on AT compared to NG ($p < 0.05$).

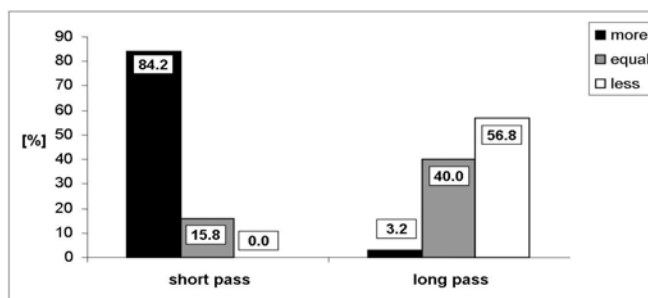


Figure 1: Passing – players' perception questionnaire

In the category playing aggressiveness a lower number of sliding tacklings was performed on AT than on NG. The number of fouls was similar on both surfaces (Fig.2). These findings were well reflected by players' perception.

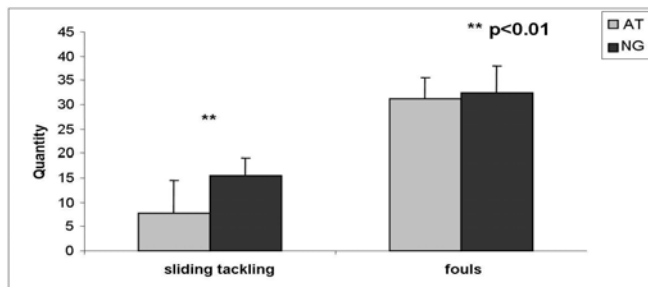


Figure 2: Playing aggressiveness – game analysis

CONCLUSIONS

In contrast to Andersson et al. (2008) no different passing behaviour was observed between both surface types in our study. Fewer sliding tacklings happened on AT compared to NG. Generally, game characteristics seem to be fairly similar for the observed surface type and level of play. It is noteworthy that there are discrepancies between game characteristics observed in the game analysis data compared to players' perceptions. This might be based on prejudices towards AT resulting from experience with earlier generations of AT.

ACKNOWLEDGMENT

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