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Comparative study of speed, agility and endurance running performance on hard and wet soil surface

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Abstract

Beside Training effect and advantages of Anthropometric and somatotype characteristics, psychological ratio etc., the suitable surface plays an important role in executing highest possible performance in running event. The surfaces may be of different nature like soil, sandy, cinder and synthetic etc. The availability of synthetic surface are not always feasible every where. In our country the soil surface is commonly used for conducting track & field events. The soil surface may be dry, wet and in between dry and wet (medium) in nature. Dry soil surface is known too high advantage for running performance where the frictional force and the rebound effect are fully utilized. On the country the wet soil surface are seemed to pulled down running performance availability.

Sometime due to adverse climate condition (Rain etc.) even the dry surface becomes wet.

Now the question arises that upto what degree of wetness of soil surface may hampered the speed, Agility and endurance performance of the athletes. In order to investigate such queries, this study is behind undertaken.

The performance of 50m (fifty mts) sprint, 4 X 30 ft shuttle run and 600 yrd Run on dry soil as well as wet soil surfaces (about 2 inch) of 25 students out of 50 (fifty) of the physical Education department N.B. S. Mahavidyalaya Bishnupur, Bankura, W.B. were recorded. The average age was 22 years ranging from 21 to 25 years.

The result revealed significant difference on the performance of athletes in 50mt, Dash, 4 X 30ft shuttle run and 600 yrd run between dry and wet surface, in which it is noticed that performances in dry soil surface are found to be better than that at wet soil surface.

Keywords: Running performance variables, college students, wets and dry surface

Introduction

In fact many sports are nothing but artificial forms of cultivating a skill that one was essential in day to day life running, throwing, catching, e.g.: caping etc.

From the beginning of civilization, therefore, games and sports have been used to train the young in warlike and survival activities. As skill in these pursuits improved and man gradually protected the art and science of communal living, competitive sports played an important part in the ceremonials, festivals and pageantry in each succeeding era.

As sports has developed into a distinct scientific discipline in itself and each nation is lying with the other to produce top class players to win laurels in international competitions, considerable research is devoted to identify factors that will be predictive of achieving high level of skill in a given sport with proper coaching.

Athletics are required to execute their performance over the suitable surface. The surface may be of different nature like muddy, sandy, cinder and synthetic etc. which may be hard, soft and in between hard and soft in nature. Depending on the hard and softness on the surface, the application of the newton's third law of motion comes into action which in-turn becomes advantages or disadvantages in executing the performance by the athlete. Hard surface are known to be advantage for the running performance where the effect of 3rd laws of motion are fully utilized.

Sometime due to the adverse climatic condition (Rain. etc.) even the hard soil surface become soft.

Now the question arises that upto what degree of wetness of soil surface may hampered the speed, Agility and endurance performances of the athletes in order to investigate such queries,

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this study is being undertaken.

Significance of the study

It is in common view that the various types of surface effect differ from in respect to physical, physiological, psychological and performance aspects. Many environmental and weather factors may be responsible for such reason.

The result of the study may be helpful to learn the various types of surface effect on performance of college male students.

The relative knowledge may be helpful to physical education teachers and coaches in different training in sports field.

Methodology

Twenty five Physical Education department students out of fifty of N.B.S. Mahavidyalaya, Bishnupur, Dist.-Bankura were studied as subjects for this study. The performance of 50 mts sprint, 4X30 ft shuttle run and 600 yrd run of the subjects were recorded on hard and wet soil (about 2 inch wet) surface within the gap of 5 days.

Average age of the subjects as 22 years ranging from 21 to 25 years.

In order find out the existence of significant difference of 50mts sprint. 4 X 30mt shuttle run and 600 yrd run of the subjects were recorded on hard and wet soil surface. The students 't' test was applied where the level of significance was set at 0.05 level of confidence, which is presented in table-1 and diagram 1.

Result

Table 1: Significant of difference of means of running performance on hard and wet surfaces

| Sl. No. | EVENT | Hard Surface Mean \pm | Wet Surface | Mean Diff. | S.A | 't' | |
|---------|---------------------|-------------------------|------------------|------------|------|-------|---|
| 1. | 50 mt Dash | 6.94 \pm 0.26 | 7.25 \pm 0.29 | 0.29 | 0.78 | 3.717 | * |
| 2. | 4X30 ft Shuttle Run | 9.80 \pm .66 | 10.44 \pm 0.81 | 0.64 | .027 | 3.092 | * |
| 3. | 600 yrd run | 1.66 \pm 0.25 | 1.87 \pm 0.45 | 0.21 | .103 | 2.03 | * |

't' required to be significant of 0.05 level of confidence at 49 df = 2.01.

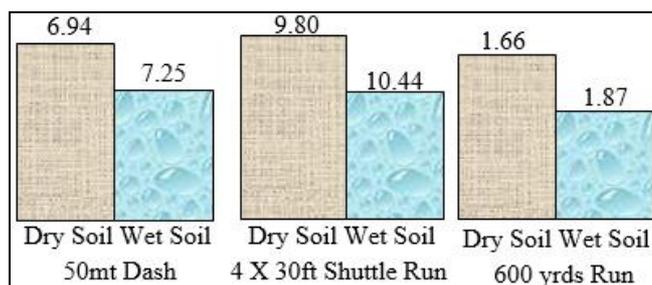


Diagram 1: Difference of performance in running events 50 mt-dash, 4 X 30 ft shuttle run and 600 yards in hard and wet surface

Discussion

The compactness of the wet soil surface (about 2 inches) in comparatively low then that of the hard soil surface, where the rebound effect as well as frictional force of the soil are not sound, which usually hampered the performance ability of the athletes, probably due to such reason the running performance ability (50mts sprint, 4 X 30 ft shuttle run X 600 yrd run) on the wet surface are found to be lower than that of the hard soil surface.

Conclusion

It may be concluded that hard soil surface required are essential executing highest possible performances in sprinting event.

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