

INFLUENCE OF STUDS SHAPE AND
DIFFERENT PITCH CONDITIONS ON
RUGBY ATHLETE SPRINTING
PERFORMANCE

SHARUL NIZAM BIN TURIMAN

MASTER OF SCIENCE

UNIVERSITI MALAYSIA PAHANG
AL-SULTAN ABDULLAH



SUPERVISOR'S DECLARATION

We hereby declare that We have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Master of Science

A handwritten signature in black ink, appearing to read 'Nasrul Hadi bin Johari', written over a horizontal line.

(Supervisor's Signature)

Full Name : Dr Nasrul Hadi bin Johari

Position : Senior Lecturer

Date : 21 September 2023

A handwritten signature in black ink, appearing to read 'Zulkifli bin Ahmad', written over a horizontal line.

(Co-supervisor's Signature)

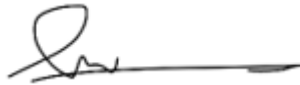
Full Name : Dr. Zulkifli bin Ahmad

Position : Senior Lecturer

Date : 21 September 2023

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I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang Al-Sultan Abdullah or any other institutions.



(Student's Signature)

Full Name : SHARUL NIZAM BIN TURIMAN

ID Number : MMH20003

Date : SEPTEMBER 2023

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SHARUL NIZAM BIN TURIMAN

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ABSTRAK

Kebolehan pemain untuk memecut adalah penting dalam sukan ragbi dengan tujuan untuk mengejar atau mengelak daripada ditangkap oleh pihak lawan, justeru penggunaan but sukan yang sesuai dapat meningkatkan keupayaan memecut pemain. Walaubagaimanapun, but komersil yang berada dipasaran tidak direka untuk pasaran rantau asia tenggara semata-mata, Hujan lebat dan suhu yang tinggi boleh menjejaskan keadaan permukaan padang sukan dengan teruk. Kajian ini bertujuan untuk menyiasat pengaruh stud pada but sukan terhadap prestasi memecut pemain ragbi junior pada jarak 40m pada permukaan padang yang normal, bertakung air dan berlumpur. Permukaan padang diuji dengan prosedur “Speedy Moisture Test” untuk mencari perbezaan dari segi peratusan kandungan air dalam tanah bagi menentukan setiap jenis permukaan padang, dan hasil ujian tersebut menunjukkan bahawa setiap jenis permukaan padang mempunyai perbezaan dari segi peratusan kandungan air. Tiga puluh enam pemain melakukan ujian memecut menggunakan but dengan stud berbentuk kon, segitiga dan bilah. Peralatan “Fully automatic timing gates” diletakkan pada jarak 0m dan 40m trek. Data yang diperolehi daripada eksperimen telah direkodkan untuk dianalisis menggunakan pendekatan analisis Cohenn’s d, pearson correlation dan ANOVA berulang. Berbanding dengan permukaan padang normal, analisis menunjukkan prestasi larian pecut pemain menurun sebanyak 1.26% pada permukaan padang lopak dan sebanyak 16.51% pada permukaan padang berlumpur. Pemain ragbi pada kategori BMI normal juga memecut lebih laju pada kadar 9.3% hingga 13.06% berbanding pemain overweight dan obesity. Selain itu analisis menunjukkan pemain ragbi posisi “Forward” memecut lebih pantas dengan memakai but dengan stud bilah. Keputusan analisis pada permukaan padang bertakung air menunjukkan pemain dalam kategori BMI berat badan berlebihan dan posisi “Forward” memecut lebih pantas dengan memakai but dengan stud kon dan bilah. Walau bagaimanapun, untuk permukaan padang berlumpur kajian juga mendapati bahawa pemain dalam pada semua posisi dan kategori BMI yang menggunakan but dengan stud kon dan segitiga mempunyai prestasi pecut yang lebih baik jika dibandingkan dengan stud bilah. Kajian ini menunjukkan rangka kerja prestasi memecut pemain ragbi pada permukaan padang yang berbeza dan berharap maklumat yang diperolehi dapat memberikan pandangan teknikal kepada pemain dan jurulatih ragbi dalam memilih but yang sesuai.

ABSTRACT

In rugby, a player's sprinting prowess emerges as a pivotal determinant for bridging the gap to adversaries and eluding their pursuit. Hence, a proper rugby boot assumes paramount importance in enhancing sprinting capabilities. However, the tropical climate conditions in Malaysia, with high temperatures, humidity and heavy rainfall, possess the potential to rapidly degrade rugby pitch conditions, thereby exerting a pronounced impact on sprinting performance. This study investigated how different boot studs affected junior rugby players' sprinting performance on different pitch conditions, namely normal, puddle, and muddy surfaces. A cohort of 36 rugby players completed the sprinting tests with different boot stud shapes, i.e. cone, triangular, and blade shapes. For precise categorization of pitch attributes, a Speedy-Moisture test was carried out to quantify the proportion of soil water content. The sprinting trials are methodically orchestrated, incorporating fully automated timing gates sited strategically at the 0m and 40m demarcations along the track. The experiment data was examined statistically using Cohen's *d* effect size method, Pearson correlation, and ANOVA. The investigation revealed that the player's sprinting performance declined by 1.26% on the puddle pitch surface and by 16.51% on the muddy pitch surface compared to a regular normal pitch. In addition, rugby players in the normal BMI category also sprinting faster at a rate of 9.3% to 13.06% compared to overweight and obese players. Intriguingly, an intricate dissection of puddle pitch condition discloses that players with overweight BMI and in the forward position sprint faster when wearing boots with cone and blade studs. In contrast, on muddy pitch surfaces, the players in all positions and BMI groups wearing cone and triangle studs outperformed the blade studs. In essence, this study demonstrated the sprinting evaluation framework on various pitch conditions. Furthermore, it imparts invaluable technical insights to rugby players and coaches in selecting appropriate boots, particularly within Malaysia's distinctive climatic and pitch conditions.

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