

## EXECUTIVE SUMMARY

# FIFA STUDY INTO PLAYER-SURFACE INTERACTION ON NATURAL AND FOOTBALL TURF

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Following a visit to Nordic countries by FIFA representatives and members of FIFpro, several issues were raised by players regarding playing on football turf compared to natural grass pitches. These were predominantly related to player-surface interaction (turning, sliding, tackling, kicking and fatigue). In the summer of 2010, a field trial was conducted to assess possible differences between player-surface interaction on FIFA 2 Star pitches and high-quality natural pitches (defined by the Sports Turf Research Institute). Thirty semi-professional outfield players from three countries (United Kingdom, Spain and Germany) volunteered to participate in the study. The number of volunteers was based on power calculations obtained from data from pilot studies. All wore adidas Copa Mundial football boots. Six natural pitches and three football turf pitches were selected in Spain, Holland and Norway.

While the peer-reviewed academic papers have yet to be published, the descriptions of the three research themes below include the initial findings. It is important to note, however, that the final outcome can only be concluded once the papers have been published.

### Ankle dynamics

Boot-pitch interaction during a rapid (V-cut) turning manoeuvre was analysed using high-speed video cameras. Three parameters of the lower limb and foot movement were measured: turn time in performing the V-cut, exit speed from the cut and slip pattern of the boot on the surface. No statistical differences were found in any of these parameters when comparing natural pitches to football turf.

### Player/surface/kicking dynamics

This test involved players kicking the ball at a specific section of the goal from a short run-up. The parameters measured included the ankle of the kicking foot in relation to the longitudinal axis of the sole of the foot and the surface, pronation of the standing foot and the backward inclination of the standing leg in relation the surface. No statistical differences were found in any of these parameters when comparing natural pitches to football turf.

### Fatigue

This test involved the volunteers undertaking a number of activities (sprinting, jogging and turning) that simulated the demands of a football game and was completed over a 95-minute session. Parameters (heart rate, lactate acid, sprint and turn times) were measured before, during and after the test. No statistical differences were found in any of these parameters when comparing natural pitches to football turf.