UCR FIELD PERFORMANCE INDICATOR:
HOP, ROLL, AND DEFLECTION EVALUATION OF SOCCER PLAYING SURFACE
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Equipment:

A. FIFA-Approved soccer ball
B. Velocity Acceleration Ramp (VAR)--Ramp 3 meters (10 ft.) long elevated 2.1 meters (7 ft.)
C. Ball Hop Indicator (BHI)--Stationary frame with free-swinging arm at 2 centimeter intervals
D. Ball air pressure gauge
E. Miscellaneous--two 30-meter tapes; stakes for tapes, carrying case

Procedure:

For all evaluations, a soccer ball inflated to 0.6 kg.sq.cm. (8.5 psi) is released from the top of the VAR with $V_r$, valve pointing down the ramp, and rolls along the acceleration gradient increasing velocity, leaving the ramp at its maximum velocity, $V_m$. Ball strikes BHI at $V_a$ at the apex of the first hop after leaving the VAR.

Roll and deflection are measured by allowing the ball to roll free down a straight line marked with a measuring tape until velocity is expended $V_s$ and it stops. Distance from foot of VAR and deflection from the line are measured and recorded. Evaluations are repeated a minimum of ten times (ten ball hop and ten roll/deflection). High readings and low readings are thrown out, the remaining eight averaged. Measurements are taken in a minimum of three sites on the playing field.

Test Sites:

A. UCR Turfgrass Research Facility--Common Bermudagrass; Tifway II; Santa Ana; DeAnza zoysiagrass; kikuyugrass; perennial ryegrass; Kentucky bluegrass; tall fescue; bare ground.
B. UCR Intramural Playing Field--two or more good turf areas and two or more worn areas.
C. Rose Bowl--hybrid bermudagrass
D. Cultural practices evaluated--mowing height, rolling, water management

World Cup Venues:

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<th>Citrus Bowl</th>
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<tr>
<td>Cotton Bowl</td>
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