Why FIFA Spends Millions On World Cup Grass

eslvideo.com Quiz by: sabok

1. What is the main challenge for World Cup grass?

○ a.) Making it look pretty

○ b.) Keeping it the same at every stadium

○ c.) Growing it quickly

2. How much has FIFA invested in grass testing?

○ a.) $1 million

○ b.) $5 million

○ c.) $10 million

3. What does John Sorochan use to simulate a soccer player's weight?

○ a.) A real soccer player

○ b.) A 3D printed foot

○ c.) A soccer ball

4. What is the Flex device used for?

○ a.) To measure grass height

○ b.) To test soccer balls

○ c.) To measure the grass surface

5. What type of grass is used in warmer cities?

○ a.) Kentucky bluegrass

○ b.) Ryegrass

○ c.) Bermuda grass

6. How do researchers simulate different stadium conditions?

○ a.) By using real grass

○ b.) By building a simulator dome

○ c.) By changing the weather

7. What do they use to monitor the grass's root health?

○ a.) Soil probes

○ b.) Watering cans

○ c.) High-speed cameras

8. How long does it take to harvest enough grass for one pitch?

○ a.) One hour

○ b.) One day

○ c.) One week

9. What is added to the sand to help stabilize the grass?

○ a.) Water

○ b.) Artificial fibers

○ c.) Fertilizer

10. What do crews do before a World Cup game to prepare the field?

○ a.) Paint the lines

○ b.) Water the grass

○ c.) Remove the goals

Gap-fill

Complete these sentences with the words in the box.

Wordbank

moisture **inside** **sand** **sunlight** **speed** **penetrate** **sensors** **researcher** **challenges** **farms** **passion**

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1. This 3D printed foot is helping scientists solve one of the World Cup's biggest logistical _____. Making the grass pitch feel the same at every stadium.

2. Here at the University of Tennessee, turf grass _____ John Sorochan has spent the last 7 years preparing North America to host the world's biggest sporting event.

3. As the robotic cleat slams into the turf, _____ measure how the surface responds.

4. The ball has to roll and bounce the same way, too. Even small differences in the grass can change the ____ of the ball or the angle of a bounce.

5. Without natural _____, the grass can weaken, recover more slowly, and be less resilient throughout the tournament.

6. So, FIFA built a a simulator dome that has grow lights to simulate those five stadiums, so we can grow grass _____ with LED lights to simulate the sun.

7. The actual game pitches are grown on 11 ____ across North America. They're planted on top of plastic sheets to protect the grasses roots, so they can be transplanted into stadiums.

8. What happens is the roots hit that plastic and they don't _____ the plastic, so they grow laterally.

9. Once the convoy of 27 trucks arrives, workers spend two days installing the pitch on top of a base layer of ___ using rakes and asphalt rollers to level and stabilize the surface.

10. Crews mow daily, monitor _____, and re-roll the surface after every match.

11. And that's the nice thing about this is the people that are all involved love what they're doing. It's not work for them. This is a _____.

Transcript

This 3D printed foot is helping scientists solve one of the World Cup's biggest logistical challenges. Making the grass pitch feel the same at every stadium. >> We're simulating a 168-lb soccer player, which is the average weight of the last two men's World Cups. >> Here at the University of Tennessee, turf grass researcher John Sorochan has spent the last 7 years preparing North America to host the world's biggest sporting event. >> A World Cup pitch is one that's going to be uniform, consistent, aesthetically pleasing, and hopefully not talked about at the end of the game. >> But that's easier said than done. The 2026 World Cup will be played across 16 cities in Mexico, the United States, and Canada, with different climates, elevations, and stadium designs, all of which affect how grass grows and performs. >> Grass is a living organism. You abuse it, it will die. >> And once the tournament begins, there are no do-overs. The field has to withstand weeks of matches while remaining safe, consistent, and camera-ready for billions of viewers around the world. That's why FIFA has invested more than $5 million into John's grass testing operation. [music] So, how is World Cup grass created? And what does it take to keep 16 pitches tournament-ready across three countries? It's a month before the 2026 World Cup kickoff, and John and his staff of more than a dozen researchers are still busy in their Tennessee lab. Since 2021, they've run more than 170 tests to solve a crucial problem. How do you make a field in Vancouver play the same as one in Miami? All World Cup fields have to have a natural grass surface because FIFA wants every pitch to feel the same. >> So when a team plays in Miami for instance on Bermuda grass, and they go to their next game in Boston on Blue Rye, it's going to be the same feel of foot. >> To make that possible, John invented the Flex device, a kind of crash test dummy for soccer fields that measures how firm, consistent, and safe a surface really is. >> All 16 stadiums will have one of these. >> As the robotic cleat slams into the turf, sensors measure how the surface responds. >> And we can go across an entire pitch and look at 77 locations and come up with like a heat map and look at the variability of that surface. >> If one area is too soft, too hard, or too slippery, stadium crews can adjust the field before players ever step on it. >> Players are going to get hurt no matter what sometimes, but we want to lessen that likelihood that it's a result of the interaction with the surface. >> Keeping players safe is only part of the challenge. The ball has to roll and bounce the same way, too. Even small differences in the grass can change the speed of the ball or the angle of a bounce. Something Argentina's players complained about after a 2024 game in Atlanta. So they use this machine to fire soccer balls at the turf at different speeds and angles, recreating everything from a simple pass to a shot

on goal. >> Comes in at a 17° angle and we don't want it to come up at more than 14° angle and as it goes in. So as we launch it, what we would normally have is high-speed cameras, radar guns, >> The measurements help crews fine-tune how each field is mowed, watered, and maintained so the ball comes off the surface at a consistent speed and angle. But keeping the grass the same gets a lot harder when there's no sunlight. >> The hardest climates and conditions are going to be the indoor stadiums, right? We have to rely on 100% grow light situations cuz there's going to be no sunlight to help them grow. >> Without natural sunlight, the grass can weaken, recover more slowly, and be less resilient throughout the tournament. To tackle that problem, FIFA helped build this multi-million-dollar research facility. >> So, FIFA built a a simulator dome that has grow lights to simulate those five stadiums, so we can grow grass inside with LED lights to simulate the sun. >> Each of these 12 bays mimics a different World Cup stadium. Some recreate fully enclosed venues like Atlanta's Mercedes-Benz Stadium, while others replicate partial sunlight conditions like at SoFi in Los Angeles. That helps researchers see how different grasses perform long before they're installed in a World Cup venue. They track things like ball bounce and root health, while soil probes monitor what's happening beneath the surface. And just like at a real World Cup field, >> [music] >> they can simulate wear and tear. >> If you look down and it's got a roller that we put soccer cleat studs on it, and when we go back and forth on the grass, we can simulate the cleat marks and the traffic. And this is how we simulate traffic under individual plots. >> The goal isn't just to figure out which grass grows best. It's to learn how each field should be managed, such as lighting and treatment schedules, and how the pitch will recover between matches. After years of research, the team landed on a game plan. Kentucky bluegrass and ryegrass for cooler climates and indoor stadiums, and Bermuda grass for cities with warmer weather. >> Which should be mowed at a slightly lower height, and it and it grows different than the cool season grass, but they're very common grasses you might have on a golf course, home lawn, or sports field anywhere. But [music] we've just intensified the management to make it fit for for World Cup soccer. >> The actual game pitches are grown on 11 farms across North America. They're planted on top of plastic sheets [music] to protect the grasses roots, so they can be transplanted into stadiums. >> What happens is the roots hit that plastic and they don't penetrate the plastic, so they grow [music] laterally. This is an example of a small piece of the sod growing on plastic. So, this is the green grass on top and you can see the abundance of roots on the bottom because they couldn't go into below that plastic. So, you haven't stressed the plant by cutting off its roots. >> Harvesting enough for one pitch takes about a day. >> You roll it up off of the plastic

and you can cut it like a pizza and all those roots are intact. >> Refrigerated trucks arrive at [music] farms in the middle of the night to avoid traffic. After [snorts] being harvested in North Carolina, one pitch is hauled 12 hours north to New Jersey. It's headed to MetLife Stadium, home to the World Cup [music] final, which will make it the most scrutinized field in the tournament. In 2022, 1 and 1/2 billion people watched the Cup final. Roughly 18% of the entire world population. Once the convoy of 27 trucks arrives, workers spend two days installing the pitch on top of a base layer of sand using rakes and asphalt rollers to level and stabilize the surface. [music] >> So, as it rains, that sand can drain really well. >> The following week, a Zamboni-like machine will inject millions of artificial [music] fibers deep into the sand. So, the natural grass roots can intertwine with them. >> They come in with a machine and stitch in these fibers. >> [music] >> They act like rebar to stabilize the sand. 95% of the surface is going to be natural grass and those fibers are below the canopy of the grass. So, when a player runs and slides, they're not touching any [music] of the fibers. There's a lot of layers that go into it. It's kind of like a parfait. >> Crews mow daily, monitor moisture, and re-roll the surface after every match. >> So, if you watch a a World Cup game, you'll see just before the game, >> [music] >> they'll have the sprinklers on and water the whole field and and get the grass wet. They'll turn the irrigation on again at half time just before the players come out, get the grass wet again, and that helps the ball skip so it doesn't bounce too high, and it helps with [music] the performance playability of the game, the speed of the game, and the quality of the game. >> And some of John's students will be there helping manage the fields in person. >> We've had a student that started working on this as a high school student. Now, he's a freshman at the University of Tennessee, and this summer he's going to go work in Houston for one of the host cities. And that's the nice thing about this is the people that are all involved love what they're doing. It's not work for them. This is a passion. >> [music] [music]