

Answer on Question#38422 – Biology – Other

Question

If we sown grains of wheat in the flat bottom bowl under normal conditions (enough water, sunshine..) and we placed that bowl on a constant-rotating surface... so, a surface that constantly rotates in one direction, how would the grown plant look like when it finally grew and we stopped the machine that rotates the surface underneath? Would the stems be directed towards the outside of the bowl... like this:

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or towards the center of the circle like this:

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I need to know how do centripetal and centrifugal forces act in this example, that's what I need help with.

Answer

What's bothering me is the fact that when something is spinning... for example a person, me, on a roundabout, I tend to "fall" to the outer side of the ring, and not towards the center of the roundabout... if I was clear enough. I wonder if that's the same thing this wheat problem. Help is greatly appreciated! Best regards.

Botanists call a plant's response to gravity geotropism. In the early 1800s experimenters explored geotropism by growing plants on a rotating wheel, thereby exposing them to both the earth's gravity and centrifugal forces. The plants grew against the vector of the resultant force-that is, against the direction of the combined forces.

