

Log Book for science fair

Blooming to the beat

Does noise affect plant growth?

By:Hanaa and Heba Adil

Date	What we did:
November 28,2025	We found our topic and made a Canva presentation. We started the log book.
December 4,2025	<p>We researched on our topic and put the references in.This is what we added;</p> <p>https://livetoplant.com/investigating-the-impact-of-impulse-noise-on-plant-growth</p> <p>Does noise effect plants growth</p> <p>https://flowergardennews.com/does-noise-affect-the-growth-of-plants.htm</p> <p>https://www.bing.com/searchq=does%20noise%20do%20a%20positive%20affect%20to%20plant%20growth&qs=n&form=QBRE&sp=-1&lq=0&pg=does%20noise%20do%20a%20positive%20affect%20to%20plant%20growth&sc=1247&sk=&cvid=D3E3C6C2F4C34C0EB8433338A9B27544</p> <p>https://www.bing.com/search?q=does%20noise%20do%20a%20positive%20affect%20to%20plant%20growth&qs=n&form=QBRE&sp=-1&lq=0&pg=does%20noise%20do%20a%20positive%20affect%20to%20plant%20growth&sc=12-47&sk=&cvid=D3E3C6C2F4C34C0EB8433338A9B2754</p>

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<https://www.bing.com/ck/a?!&&p=e7816375ff311c2c61958a827706b527516c5b0ecd0089bf66853dc2ebee61bcJmltdHM9MTc2NDgwNjQwMA&pn=3&ver=2&hsh=4&fclid=0318c149-300f-6b80-0653-d49931bb6aba&u=a1aHR0cHM6Ly9mbG93ZXJnYXJkZW5uZXdzLmNvbS9kb2VzLW5vaXNILWFmZmVjdC10aGUtZ3Jvd3RoLW9mLXBsYW50cy5odG1s&ntb=1>

<https://www.bing.com/searchq=what%20does%20excessive%20mean&qs=n&form=QBRE&sp=-1&ghc=1&lq=0&pq=what%20does%20excessive%20mean&sc=12-24&sk=&cvid=265BED8EA36B4BCA8B4706198E9D6BC4>

https://www.google.com/searchq=does+noise+effect+plants+growth+if+so+does+it+effect+in+a+positive+or+a+negative+way&rlz=1CAJEHJ_enCA1189&oq=does+noise+effect+plants+growth+if+so+does+it+effect+in+a+positive+or+a+negative+way&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIHCAEQIRiPAjIHCAIQIRiPATiBCTM2Njg3ajBqN6gCB7ACAfEFJDzAjpMjMnM&sourceid=chrome&ie=UTF-8&safe=active&ssui=on&zx=1764960673561&no_sw_cr=1

<p style="text-align: center;">Log Book for science fair</p> <p style="text-align: center;">Blooming to the beat</p> <p style="text-align: center;">Does noise affect plant growth? By:Hanaa and Heba Adil</p>	
December 4, 2025	We put some Research in our canva presentation.This is what we added; Noise can have negative and positive affects on plants.The negative side is that too much noise can disrupt the needs for the plant. On the other hand the positive side is that some noise can improve nutrient absorption and photosynthesis.
December,4,2025	Hanaa did the introduction which is: Have you ever wondered if your noise can do something good?
December,4,2025	Hanaa put the hypothesis which is: Our hypothesis is that we don't think that plant growth gets affected by noise.
December,4,2025	Hanaa put the question on the canvas presentation which is: Does noise affect plant growth?
December,4,2025	Hanaa put the materials on our canva presentation which is: 3 types of plants (3 each).
December,5,2025	<p style="text-align: center;">We added some Research which is:</p> <p style="text-align: center;">Speaking kindly will affect the plants in a positive way while yelling or screaming at them will affect in a positive way</p> <ul style="list-style-type: none"> ● If you put some calm music on it can affect plants in a positive way but with harsh loud not in rhythm music then it can lead to negative affects. ● How do plants hear?Plants don't have ears but they can sense and react to sound vibrations through specialized cell structures,triggering internal chemical signals that affect some factors of plants.

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December,5,2025	<p>Heba added references which are:</p> <ul style="list-style-type: none">• https://www.thespruce.com/plants-a-to-z-5116344• https://www.google.com/searchq=Does+noise+effect+plants+growt+h%3F&rlz=1CAJEHJ_enCA1191&oq=&gs_lcrp=EgZjaHJvbWUqCQgAEEUYOxjCAzIJCAAQRRg7GMIDMgklIARBFGDsYwgMyCQgCEEUYOxjCAzIJCAMQRRg7GMIDMg8IBBAuGAMYjwEYtAIY6glyEQgFEAAYAxhCGI8BGLQCGOoCMhEIBhAAGAMYQhiPARi0AhjqAjIRCAcQABgDGEIYjwEYtAIY6gLSAQkyNzc2ajBqMTWoAgiwAgHxBVJEGSG4WkGN&sourceid=chrome&ie=UTF-8&safe=active&ssui=on• https://www.provenwinners.com/leafjoy/easy-indoor-plant• https://www.bing.com/searchq=how%20%20does%20%20loud%20noise%20effect%20plants%20in%20a%20bad%20way%3F&qsn&form=QBRE&sp=-1&lq=0&pq=how%20%20does%20%20loud%20noise%20effect%20plants%20in%20a%20bad%20way%3F&sc=0-49&sk=&cvid=19DC6FA94AD64868AE6EE497B554202D
December,5,2025	<p>Hanaa put credits which are:</p> <ul style="list-style-type: none">• Family• Mrs.Abdelmoneim•

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[GIYDSNt9UJkHWLp7cAJ4AZABAjgBcgABuAugAQQxOC4xuAEDyAEAAEBAECmAlVoAK6D6gCCsICEBAAGAMYjwEY6gIYtALYAQHCAhAQLhgDGI8BGOoCGLQC2AEBwgINEAAYgAQYigUYQxixA8ICEBAAGIAEGloFGEMYsQMYgwHCAgoQABiABBiKBRhDwgIOEAAYgAQYigUYsQMYgwHCAg4QLhiABBixAxjHARjRA8ICCxAAGIAEGLEDGIMBwgIIEAAYgAQYsQPCAhEQLhiABBiKBRiNBhixAxIDAcICERAAGIAEGloFGJECGLEDGIMBwgILEAAYgAQYigUYkQLCAGsQLhiABBixAxIDAcICBRAuGIAEwgIREC4YgAQYsQMYgwEYxwEY0QPCAggQLhiABBixA8ICCxAuGIAEGloFGLEDwglEC4YgAQYigUYsQMYlwUY3AQY3gQY4ATYAQKYAxa6BgQIARgKugYGCAIQARgUkgcEMTMuOKAHuYEBsgcEMTEuOLgHmA_CBwYzLTYuMTXIB7EDgAgB&scient=gws-wiz-serp&safe=active&ssui=on](https://www.gardeningknowhow.com/ornamental/flowers/does-noise-affect-plant-growth.htm)

- [How Does Music effect a Plant's Growth? - California Learning Resource Network](#)

Dec,16,2025

Hanaa added some Research:
What does calm noises do to the plants? It Enhances Germination Rates which means that using calm sounds helps seeds sprout faster because it encourages them to take in more food and water.Improves nutrient absorption which means

Dec,16,2025

Heba changed our title from nature calls to blooming to the beat

January,2,2026

Heba edited some of the Research:
Improves nutrient absorption which means that some sound frequencies can enhance nutrient uptake and photosynthesis.

January,3,2026

Hanaa edited some of the Research:

- What does calm noises do to the plants? It Enhances Germination Rates which means that using calm sounds helps seeds sprout faster because it encourages them to take in more food and water. Improves nutrient absorption which means that some sound frequencies can enhance nutrient uptake and photosynthesis.

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Jan,3,2026	<p>We added what's next: Now people can stop playing music that affects plants in a bad way and start playing calm music.</p>
January,3,2026	<p style="text-align: center;">We added Research:</p> <ul style="list-style-type: none"> ● Attracting Pollinators means that natural sounds like the songs of birds attract pollinators which is really essential for plants. ● Now people can stop harming plants.
Jan,3,2026	<p style="text-align: center;">We added a few references:</p> <ul style="list-style-type: none"> ● https://www.bing.com/searchq=can%20you%20explain%20what%20Regulates%20Hormone%20Levels%20means%20in%20plants%20in%20a%20really%20easy%20way&qsn&form=QBRE&sp=-1&lq=0&pg=can%20you%20explain%20what%20regulates%20hormone%20levels%20means%20in%20plants%20in%20a%20really%20easy%20way&sc=0-82&sk=&cvid=94C0ED1934DC4CF381AD80A92C578D30 ● https://www.bing.com/searchq=How%20do%20plants%20have%20stress%20can%20you%20explain%20in%20a%20really%20easy%20way&qsn&form=QBRE&sp=-1&ghc=1&lq=0&pg=how%20do%20plants%20have%20stress%20can%20you%20explain%20in%20a%20really%20easy%20way&sc=0-62&sk=&cvid=4F3FC33EF07A4AF89AEBFF2D39D3A83C ● https://www.bing.com/searchq=can%20you%20explain%20what%20Regulates%20Hormone%20Levels%20means%20in%20plants&qsn&form=QBRE&sp=-1&lq=0&pg=can%20you%20explain%20

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[what%20regulates%20hormone%20levels%20means%20in%20plants&sc=0-61&sk=&cvid=92E2E40851E944C5901F9A047E44AF45](https://www.researchgate.net/publication/328111155_what_regulates_hormone_levels_means_in_plants&sc=0-61&sk=&cvid=92E2E40851E944C5901F9A047E44AF45)

- <https://www.bing.com/searchq=how%20does%20calm%20noises%20effect%20plants%20in%20a%20good%20way%3F&qs=n&form=QBRE&sp=-1&lq=0&pq=how%20does%20calm%20noises%20effect%20plants%20in%20a%20good%20way%3F&sc=749&sk=&cvid=1FC36D8F8A3445418DA6EA3BE7F2D301>
- [What is a catchy title for a science project about the effect of music on plant growth? - Quora](https://www.quora.com/What-is-a-catchy-title-for-a-science-project-about-the-effect-of-music-on-plant-growth?m=1)
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC7671032/#:~:text=Sound%20stimuli%20can%20influence%20germination,the%20yield%20of%20some%20crops.&text=Furthermore%2C%20sound%20waves%20can%20improve,increase%20their%20tolerance%20to%20drought.>

Jan,4,2026

Hanaa edited the Research:What does calm noises do to the plants? It Enhances Germination Rates which means that using calm sounds helps seeds sprout faster because it encourages them to take in more food and water.

- Improves nutrient absorption which means that some sound frequencies can enhance nutrient uptake and photosynthesis.
- Regulating Hormone Levels means controlling the amount of hormones produced and released by the plant.

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	<ul style="list-style-type: none"> • Attracting Pollinators means that natural sounds like the songs of birds attract pollinators which is really essential for plants. • Reduced stress means that gentle sound can help plants cope with stress. Plants have lots of stress like Water Stress, Nutrient Deficiency and Temperature Extremes.
Jan,4,2026	<p style="text-align: center;">We added some references:</p> <ul style="list-style-type: none"> • https://www.bing.com/searchq=easy%20maning%20of%20stomata%20in%20plants&q=n&form=QBRE&sp=-1&ghc=1&lq=0&pq=easy%20maning%20of%20stomata%20in%20plants&sc=12-32&sk=&cvid=1C2258085C4B46ED8433F4ACD03C989E • https://www.bing.com/searchq=what%20are%20heat%20shock%20proteins%20in%20plants&q=n&form=QBRE&sp=-1&ghc=1&lq=0&pq=what%20are%20heat%20shock%20proteins%20in%20plants&sc=7-38&sk=&cvid=57B3519569074F4EBBCEE94D23AC2230 • https://www.bing.com/searchpglt=41&q=what+does+cope+means&cvid=1aa359eabb464183b1dc8af7235a3df4&gs_lcrp=EgRIZGdlKgYIABBFGDkyBggAEEUYOTIGCAEQABhAMgYIAhAAGEAyBggDEAAYQDIGCAQQABhAMgYIBRAAGEAyBggGEAAYQDIGCAcQABhAMgclCBDrBxhA0qEINTYzNWowajGoAgCwAgA&FORM=ANNTA1&PC=ASTS
Jan,4,2026	<p>We got our plants!We have a tropical plant and an Aloe and Howorthia plant.</p>

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Jan,5,2026

We edited some of the Research:What does calm noises do to the plants? It Enhances Germination Rates which means that using calm sounds helps seeds sprout faster because it encourages them to take in more food and water.

- What does calm noises do to the plants? It Enhances Germination Rates which means that using calm sounds helps seeds sprout faster because it encourages them to take in more food and water.
- Improves nutrient absorption which means that some sound frequencies can enhance nutrient uptake and photosynthesis.
- Regulating Hormone Levels means controlling the amount of hormones produced and released by the plant.
- Attracting Pollinators means that natural sounds like the songs of birds attract pollinators which is really essential for plants.
- Reduced stress means that gentle sound can help plants cope with stress. Plants have lots of stress like Water Stress, Nutrient Deficiency and Temperature Extremes.

Jan,5,2026

We added more references:

- https://www.google.com/searchsca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&q=how+much+do+you+need+to+water+a+Aloe+and+Haworthia+plant&source=inms&fbs=AlljpHxU7SXXniUZfeShr2fp4giZjSkgyzz55RrRWAIniWd7mJPXhEhDEeWHIPqI2VGXBFq6sApA8rJTRA1MWJgB90OY1XWgQCwUIVdnj2wM2n6NWKr1KYIJamXJfoWDHynSDfwa601gmFqIYyC4YIgyYGYdhtJhzFH1QOzY9I0Rgy8QcTcVbJu0OgxmtmHWTIpzZNMcyEmvAPkZ4hFeBCFsMvsJnp0ZOITTpZXIGf9YU2LL1p0&sa=X&ved=2ahUKEwi1vKTR8fSRAXXEHDQIHavYI5QQ0pQJegQIDRAB&biw=1366&bih=633&dpr=1&safe=active&ssui=on
- https://www.google.com/searchq=how+much+do+you+need+to+water+a+tropical+plant&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&biw=1366&bih=633&ei=99baeChNNic0PEPsdazsAk&ved=0ahUKEwigf7S8fSRAXVYDjQIHtFrBpYQ4dUDCBE&uact=5&oq=how+much+do+you+need+to+water+a+tropical+plant&gs_l

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[p=Egxnd3Mtd2l6LXNlcnAiLmhvdyBtdWNolGRvIHlvdSBuZWVkiHRvIHdhdGVyIGEdHJvcGljYWwgcGxhbnQyCBAhGKABGMMESNMXUIEFWO4VcAF4AZABAjgB7wGgAbYlqgEFMy40LjG4AQPIAQD4AQGYAgmgArIjWglKEAAYsAMY1gQYR8ICBhAAGAcYHsICChAAGAcYCBgKGB7CAgsQABiABBiGAXiKBclCCBAAGIAEGKIEwglFEAAY7wXCAGgQABiiBBiJBclCCChAhGKABGMMEGAqYAwCIBgGQBgOSBwU0LjQuMaAHjSWyBwUzLjQuMbgHognCBwcyLTUuM y4xyAdOgAgA&scclient=gws-wiz-serp&safe=active&ssui=on](https://www.google.com/search?q=Does+little+noise+effect+plant+can+you+explain+in+an+easy+way&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&ei=2u5bacCwHqTi0PEP1L_QkQE&ved=0ahUKEwjAhfbK8PSRAXUkMTQIHdQfNBIQ4dUDCBE&uact=5&oq=Does+little+noise+effect+plant+can+you+explain+in+an+easy+way&gs_lp=Egxnd3Mtd2l6LXNlcnAiPURvZXMgbG10dGxllG5vaXNlIGVmZmVjdCBwbGFudCBjYW4geW91IGV4cGxhaW4gaW4gYW4gZWFzeSB3YXllhx5Q2ANYlhpwAXgBkAEAmAGQAqABkwqgAQUxLjcuMbgBA8gBAPgBAZgCCKAC8AfCAgoQABiwAxjWBBhHwglIEAAYogQYiQXCAGgQABiABBiiBMICBRAAGO8FmAMAIAYBkAYlkgcDMi42oAfHLrIHazEuNrgH1wfCBwcyLTEuNi4xyAdjgAgA&sclient=gws-wiz-serp&safe=active&ssui=on)

- https://www.google.com/search?q=Does+little+noise+effect+plant+can+you+explain+in+an+easy+way&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&ei=2u5bacCwHqTi0PEP1L_QkQE&ved=0ahUKEwjAhfbK8PSRAXUkMTQIHdQfNBIQ4dUDCBE&uact=5&oq=Does+little+noise+effect+plant+can+you+explain+in+an+easy+way&gs_lp=Egxnd3Mtd2l6LXNlcnAiPURvZXMgbG10dGxllG5vaXNlIGVmZmVjdCBwbGFudCBjYW4geW91IGV4cGxhaW4gaW4gYW4gZWFzeSB3YXllhx5Q2ANYlhpwAXgBkAEAmAGQAqABkwqgAQUxLjcuMbgBA8gBAPgBAZgCCKAC8AfCAgoQABiwAxjWBBhHwglIEAAYogQYiQXCAGgQABiABBiiBMICBRAAGO8FmAMAIAYBkAYlkgcDMi42oAfHLrIHazEuNrgH1wfCBwcyLTEuNi4xyAdjgAgA&sclient=gws-wiz-serp&safe=active&ssui=on
- https://www.google.com/search?q=Does+no+noise+effect+plant&rlz=1CAOUAQ_enCA1196&oq=Does+no+noise+effect+plant+&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIGCAEQRRhAMgYIAhBFGEDSAQkxNDk2NWowajeoAgCwAgA&sourceid=chrome&ie=UTF-8&sei=oO1baY2PN4ak0PEPueLzyA8&safe=active&ssui=on
- https://www.google.com/search?q=Does+so++much+noise+effect+plant+can+you+explain+in+an+easy+way&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&ei=wO5bad2nl_yv0PEP87TV4_Qk&ved=0ahUKEwjdh8i-8PSRAXX8FzQIHxNaNZwQ4dUDCBE&uact=5&oq=Does+so++much+noise+effect+plant+can+you+explain+in+an+easy+way&gs_lp=Egxnd3Mtd2l6LXNlcnAiP0RvZXMgc28gIG11Y2ggbm9pc2UgZWZmZWNoIHBSYW50IGNhbiB5b3UgZXhw

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[bGFpbiBpbiBhbiBIYXN5IHdheUidHVCXBVjlGnABeAGQAQCYAdoBoAGKCaoBBTEuNS4xuAEDyAEAAEBmAlFoAKIBsICChAAGLADGNYEGEfCAggQABiiBBiJBclCBRAAGO8FwgIKECEYoAEYwwQYCpgDAIlgGAZAGCJIHBTauMy4xoAeRjrlHBTauMy4xuAf0BclHBTItMi4zyAcsgAgA&sclient=gws-wiz-serp&safe=active&ssui=on](https://www.google.com/search?q=Does+no+noise+effect+plant+can+you+explain+in+an+easy+way&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&ei=oe1bab_pMKmh0PEPx9bT0Ao&ved=0ahUKEwj_vei17_SRAXWpEDQIHUfrFKoQ4dUDCBE&uact=5&og=Does+no+noise+effect+plant+can+you+explain+in+an+easy+way&gs_l=Crp=EgZjaHJvbWUyBggAEEUYOTIJCAEQIRgKGKABMgclAhAhGI8C0gEJMzYyNTNqMGo3qAIAAsAIA&sourceid=chrome&ie=UTF-8&sei=Fe5baZWIF-aY0PEPxqC5yAI&safe=active&ssui=on)

- https://www.google.com/search?q=Does+no+noise+effect+plant+can+you+explain+in+an+easy+way&sca_esv=9ab8c0c46cd95f09&rlz=1CAOUAQ_enCA1196&ei=oe1bab_pMKmh0PEPx9bT0Ao&ved=0ahUKEwj_vei17_SRAXWpEDQIHUfrFKoQ4dUDCBE&uact=5&og=Does+no+noise+effect+plant+can+you+explain+in+an+easy+way&gs_l=Crp=EgZjaHJvbWUyBggAEEUYOTIJCAEQIRgKGKABMgclAhAhGI8C0gEJMzYyNTNqMGo3qAIAAsAIA&sourceid=chrome&ie=UTF-8&sei=Fe5baZWIF-aY0PEPxqC5yAI&safe=active&ssui=on
- https://www.google.com/search?q=differences+between+Aloe+and+Howorthia+and+Tropical+plant&rlz=1CAOUAQ_enCA1196&og=differences+between+Aloe+and+Howorthia+and++Tropical+plant&gs_l=Crp=EgZjaHJvbWUyBggAEEUYOTIJCAEQIRgKGKABMgclAhAhGI8C0gEJMzYyNTNqMGo3qAIAAsAIA&sourceid=chrome&ie=UTF-8&sei=Fe5baZWIF-aY0PEPxqC5yAI&safe=active&ssui=on
- <https://livetoplant.com/investigating-the-impact-of-impulse-noise-on-plant-growth/>
- https://www.google.com/search?q=how+many+times+do+you+have+to+water+Aloe+and+Haworthia+and+tropical+plant&sca_esv=8f86c1cd49cc125e&rlz=1CAJEHJ_enCA1196&ei=WCVgadLIJcef0PEPvclRkQ&ved=0ahUKEwjS8e2O9fyRAxXHDzQIHT3hOgUQ4dU

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[DCBE&uact=5&oq=how+many+times+do+you+have+to+water+Al+oe+and+Haworthia+and+tropical+plant&gs_l=EGxnd3Mtd2I6LXNIcnAiSWhvdyBtYW55IHRpbWVzIGRvIHdvdSBoYXZIIHRvIHdhdGVyIEFsb2UgYW5kIEhhd29ydGhpYSBhbmQgdHJvcGljYWwgcGxhb nRI4yJQ9A5Y9R9wAHgAkAEAmAGLAaAB_wegAQM4LjO4AQPIAQD4AQGYAgKgArwBwglEECEYCpgDAOIDBRIBMSBAiAYBkgcDMS4xoAfGFbIHAzEuMbgHvAHCBwcvLjEuMC4xyAcLgAgA&scient=gws-wiz-serp&safe=active&ssui=on](https://www.youtube.com/watch?v=5oq=how+many+times+do+you+have+to+water+Al+oe+and+Haworthia+and+tropical+plant&gs_l=EGxnd3Mtd2I6LXNIcnAiSWhvdyBtYW55IHRpbWVzIGRvIHdvdSBoYXZIIHRvIHdhdGVyIEFsb2UgYW5kIEhhd29ydGhpYSBhbmQgdHJvcGljYWwgcGxhb nRI4yJQ9A5Y9R9wAHgAkAEAmAGLAaAB_wegAQM4LjO4AQPIAQD4AQGYAgKgArwBwglEECEYCpgDAOIDBRIBMSBAiAYBkgcDMS4xoAfGFbIHAzEuMbgHvAHCBwcvLjEuMC4xyAcLgAgA&scient=gws-wiz-serp&safe=active&ssui=on)

Jan,7,2026

Hanaa added the errors:It was really hard to get the plants for our experiment. Most stores did not have any because it was out of season.

Jan,7,2026

Heba put variables:Controlled Variable: That I water it everyday.

- Independent Variable: The volume, Temperature and the light.
- Responding Variable: The plants growing and being affected.

Jan,8,2026

Hanaa added some Research:Sometimes no noise can affect in a negative way. Plants need noise to guide things like finding water, attracting pollinators, and defending against threats.

Jan,8,2026

We added the Materials

- 2 types of plants (3 each)
- Measuring tape
- One paper
- One pencil
- Mist sprayer(to water the plants)

Log Book for science fair

Blooming to the beat

Does noise affect plant growth?

By:Hanaa and Heba Adil

January,9,2026

- https://www.google.com/search?sca_esv=1307f981479751f5&rlz=1CAJEHJ_enCA1196&udm=2&fbs=ADc_l-aN0CWEZBOHjofHoaMMDiKpaEWjvZ2Py1XXV8d8Kvll3p-ML-906rRL_m6h4jR-tdCeKlwp94h-QiJ4IjfObsqU79yRFgWBtc5FGpXu1cRI7c5CVyH9p38GbPIW3Yb-gV9nXNaYIY1Ncj95U-k7-AuPer57rDH9ympzQg4j8ubr95WFK9UsLuXZtTXdDJVsjRUDwXtlbpAw9U8_F5B9pqdUPtGjJQ&q=impulse+meaning&sa=X&ved=2ahUKEwiusS-kP-RAXWyBDQIHSW9CGAQtkgLegQIERAB&biw=1366&bih=633&dpr=1&aic=0&safe=active&ssui=on
- https://www.google.com/search?q=impact+meaning+simple&sca_esv=1307f981479751f5&rlz=1CAJEHJ_enCA1196&udm=2&biw=1366&bih=633&aic=0&ei=Lk9hadzZLRDJ0PEP7YLEKQ&ved=0ahUKEwjcqO2Tkf-RAXWwJDQIHW0BMQUQ4dUDCBI&uact=5&oq=impact+meaning+simple&gs_l=ip=Egtn3Mtd2l6LWltZyIVaW1wYWN0lG1IYW5pbmcmc2l2cGxIMgUQABiABDIFEAAYgAQyBhAAGAUyHjIGEAAAYBRgeMgYQABgFGB4yBhAAGAgYHjIGEAAAYCBgeMgYQABgIGB5lwRVQzwZYvBNwAXgAkAEAmAFMoAH1A6oBATE4AQPIAQD4AQGYAgigAq4FwglNEAAYgAQYsQMYQxiKBclCBhAAGAcYHsICChAAGIAEGEMYigXCAGQQABgemAMAIAYBkgcBOKAHgSuyBwE3uAejBclHBTMtMy41yAeWAYAIAA&scient=gws-wiz-img&safe=active&ssui=on
- https://www.bing.com/search?pglt=41&q=who+to+spell+Howorthia&cvid=8712a6b059d943ddaa8a2b353a3e9c75&gs_lcrp=EgRIZGdlKgYIABBFGDkyBggAEEUYOTIHCAEQ6wcYQNIBCDU0MThqMGoxqAIAAsAIA&FORM=ANNTA1&PC=ASTS

January,14,2026

We added a Aloe and Howorthia VS Tropical plant
We added this to see how much to water the plants here is what it says:

Aloe and Howorthia:Water only when it is BONE dry.Water less in winter
and more in summer
Tropical Plant:Water only when almost dry to prevent root rot. Water the

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By:Hanaa and Heba Adil

plant until it is moist or 1-2 inches inside the soil.Water less in winter and more in summer.You can do a weekly schedule but it might damage the plants.You can water smaller pots every 4-7 days.Medium pots every 6-10 days.and larger pots every 10-14 days.

January,16,2026

Heba added some references
[who to spell Howorthia - Search](#)

January,16,2026

Heba edited the materials:

- 2 types of plants (3 each we used Aloe and Haworthia and Tropical plant)
- Measuring tape
- One paper
- One pencil
- Mist sprayer(to water the plants)

January,23,2026

Heba put results on:



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Plants	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia
Sound	High		Medium		Low	
Jan,9	15 cm	7 cm	13.7 cm	7.5 cm	13 cm	5.3 cm
Jan,16	17.5 cm	9 cm	17 cm	8.5 cm	16 cm	8 cm
Jan,23	14 cm	8.5 cm	13 cm	7 cm	11 cm	6.8 cm

This is the measurements we took on every friday

January,23,2026

We edited the errors. Here is what it says:

- It was really hard to get the plants for our experiment.
- Most stores did not have any because it was out of season.
- We should have added more time for the plants to have a bigger affect.
- The last week of our experiment it was very cold so the sun was barely out so the height dropped.
- We should have done this experiment not in winter or done the experiment when there was no snow.

January,24,2026

Hanaa edited the hypothesis:

We believe that plant growth gets affected by noise because noise is an important and natural factor in human life and it may affect growth in many ways that we may not know much about. Plants are living things with different traits.

January,24,2026

Heba edited the research;

- Noise can have negative and positive affects on plants.The negative side is that too much or loud noise can disrupt the needs of the plant. On the other hand the positive side is that low-pitched noise or silence can improve nutrient absorption and photosynthesis.
- Speaking kindly with the plants while yelling or screaming at them will affect in a positive way
- If you put some calm music on, it can affect plants in a positive

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By:Hanaa and Heba Adil

way but exposing them to harsh, loud or not in rhythm music could lead to negative affects.

- How do plants hear? Plants don't have ears but they can sense and react to sound vibrations through specialized structures which can trigger signals that affect some growth factors of plants.
- What do calm noises and quiet noises do to the plants? It enhances the process rates which means it helps seeds sprout faster because it encourages them to take in more food and water.
- Improves nutrient absorption which means that some sound frequencies can enhance nutrient uptake and photosynthesis.
- Control chemicals levels means controlling the amount of chemical produced and released by the plant.
- Attracting pollinators means that natural sounds like the songs of birds attract pollinators which are really essential for plants.
- It reduces stress and means that gentle sound can help plants cope with stress. Plants have lots of stress like water stress, nutrient deficiency and temperature extremes.
- Sometimes no noise can have a negative affect. Plants need noise to guide things like finding water, attracting pollinators, and defending against threats.

January,24,2026

We added on How to water Aloe and Howorthia vs Tropical Plant:

For Tropical plant

- Water only when almost dry to prevent root rot. Water the plant until it is moist or 1-2 inches inside the soil.
- Water less in winter and more in summer
- You can do a weekly schedule but it might damage the plants
- You can water smaller pots every 4-7 days. Medium pots every 6-10 days and larger pots every 10-14 days.

For Aloe and Howrthia

- Water only when it is BONE dry.
- Water less in winter and more in summer

<p style="text-align: center;">Log Book for science fair</p> <p style="text-align: center;">Blooming to the beat</p> <p style="text-align: center;">Does noise affect plant growth? By:Hanaa and Heba Adil</p>	
January,25,2026	We edited the what's next: Loud music can affect plants in a negative way. We encourage people to start playing clam music or no music as some music can affect plants in a positive way. .
January,25,2026	Hanaa added some results: The lowest noise level plant grew more than the high and medium noise level. The high noise level plant grew less than we expected.
January,25,2026	Hanaa edited the conclusion: <ul style="list-style-type: none"> • We learned that some noise is good for plants. Too much noise can be affected in a negative way. No noise can affect in a negative but sometimes positive way. Some noise affects plants in a positive way.
February,6,2026	WE FOUND OUT THAT WE WON!!!
February,7,2026	We fixed acknowledgment in the correct spelling which is acknowledgment and we changed effect to affect.
February,8,2026	We changed barley into barely.
February,8,2026	Hanaa researched a bit. She added some references: How Does Noise Pollution Affect Plants? - Green Packs
Feb,12,2026	Hanaa added some references: Types of Water Stress (Drought, Salinity) - ClassNotes.ng Nutrient Deficiencies Definition - Intro to Botany Key Term Fiveable
February,12,2026	We added more Research <ul style="list-style-type: none"> • Water stress means when there is too much salt in water that they are given or they don't get enough water • Nutrient deficiency means that plants don't get enough nutrients that they need. • Temperature extremes means that the temperature needs to be balanced in order for the plants to grow. When it's too hot plants can get stressed and stop growing. When it's too cold they can freeze and die.

<p style="text-align: center;">Log Book for science fair</p> <p style="text-align: center;">Blooming to the beat</p> <p style="text-align: center;">Does noise affect plant growth? By:Hanaa and Heba Adil</p>	
February,13,2026	<p>We added some Errors</p> <ul style="list-style-type: none"> • We should have continued to take care of the plants after the science fair.
Feb,13,2026	<p>We added Why we chose this project</p> <p>We chose this project because whenever it is the summer and you're driving in the car you see trees wilting or plants dying. We always wondered why that happened. So we thought maybe noise?</p>
February, 14,2026	<p>We added References</p> <ul style="list-style-type: none"> • https://soundcy.com/article/what-are-frequencies-in-sound
Feb,18	<p>Note Frequency Chart (Pitch to Note) What is Sound and How do we Hear it? - Let's Talk Science Sound - 40+ Examples, Types, Characteristics, Applications Frequency - Simple English Wikipedia, the free encyclopedia</p>
Feb,18	<p>We added some research</p> <ul style="list-style-type: none"> • Some noise can reduce stress and means that gentle sound can help plants cope with stress. Plants have lots of stress like water stress, nutrient deficiency and temperature extremes. • Sometimes no noise can have a negative affect. Plants need noise to guide things like finding water, attracting pollinators, and defending against threats. • Water stress means when there is too much salt in water that they are given or they don't get enough water • Nutrient deficiency means that plants don't get enough nutrients that they need. • Temperature extremes means that the temperature needs to be balanced in order for the plants to grow.When it's too hot plants can get stressed and stop growing. When it's too cold they can freeze and die. • When there is noise pollution in a plant's habitat, it can affect its growth and development.

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Blooming to the beat

Does noise affect plant growth?

By:Hanaa and Heba Adil

February ,18, 2026	We added What Noises Affects plants in a positive way <ul style="list-style-type: none">● Classical music often benefits noise● Quran● Positive tones● Calm sweet tones
February,24,2026	We added What Noises Affects plants in a positive way <ul style="list-style-type: none">● low frequency noise
February,24,2026	We added What Noises Affects plants in a negative way <ul style="list-style-type: none">● Screaming or yelling● Not rhythm noises● Unstable noises● High frequency noises
February,24,2026	We added more Research <ul style="list-style-type: none">● Noise pollution are harmful sounds or un-wanted sounds● How does sound travel? Sound travels through the air in waves called sound waves.
February,24,2026	We added in what are frequencies through sound Humans can only hear from 20 Hz to 20,000 Hz.
Feb,24,2026	We added some research They also need to warn their neighbour plants
February,24	We added some new information <ul style="list-style-type: none">● Noise can have negative and positive affects on plants.The negative side is that too much or loud noise can disrupt the needs of the plant. On the other hand the positive side is that low-pitched noise or silence can improve nutrient absorption and photosynthesis.● The negative affects will also affect the soil and the bugs or animals living under it● Speaking kindly with the plants while yelling or screaming at them

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Does noise affect plant growth?
By:Hanaa and Heba Adil

will affect in a positive way

- If you put some calm music on, it can affect plants in a positive way but exposing them to harsh, loud or not in rhythm music could lead to negative affects.
- How do plants hear? Plants don't have ears but they can sense and react to sound vibrations through specialized structures which can trigger signals that affect some growth factors of plants.

February,25,2026

We added more research
Some noise can boost a plant's defence.

February,25,2026

We added on What noises Affect plants in a negative way?
Harm sounds

February,25,2026

We added some results:



March,1,2026

We made a script

March,1,2026

We edited the introduction:
Have you ever wondered if your noise can make an impact?
In this project, we will be presenting about frequencies and the negative and positive impacts of noise on plants. We are also including an experiment in this project.

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Does noise affect plant growth?

By:Hanaa and Heba Adil

March,1,2026	<p>We edited the hypothesis: We believe that plant growth is affected by noise because noise is an important and natural factor in living organism's life, and it may affect growth in ways we do not yet understand. Plants are all around us so they will have some impact even though they are living things with different traits.</p>
March,1,2026	<p>We edited the research:</p> <p>How do plants hear?</p> <ul style="list-style-type: none">● Plants don't have ears, but they can sense and react to sound vibrations in the air and soil through specialized structures that trigger signals that affect some plant growth factors.● When sound waves travel, they create tiny movements. Plants can sense these movements through their leaves, stems and roots.● Very loud sounds create strong vibrations that can affect how plants grow.● Speaking kindly to plants can have a positive affect, while yelling, screaming, and non-rhythmic noises can have a negative affect.● If you play calm music, it can positively affect plants, but exposing them to harsh, loud, or out-of-rhythm music could have negative affects. <p>What do loud noises do to the plants?</p> <ul style="list-style-type: none">● Exposing plants to harsh, loud, or out-of-rhythm music could have negative affects.● Research suggests that loud noise can stress plants leading to slow growth. This may lead to slower growth, smaller leaves and thinner stems.● Extremely loud and long-term constant vibration (like near

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machinery or construction) can damage plant cells overtime. It affects how nutrients move inside the plant and reduce healthy growth.

- Long-term stressed plants may use their energy to survive instead of growing taller.
- The negative affects will also affect the soil and the bugs or animals living under it which contributes to slower growth.

Real-World Examples of noisy environments

- Plants growing near highways, near airports, near factories or construction sites may experience constant vibration stress.
- Over time this can affect plants' height, leaf size and overall health.
- However, plants can adapt well and many will use the energy they receive towards survival rather than growth.

What do calm or natural sounds do to the plants?

- Low-pitched noise can improve nutrient absorption and photosynthesis.
- It enhances the process rates, improves nutrient absorption, controls chemical levels, and attracts pollinators. Controlling chemical levels means controlling the amount of chemicals produced and released by the plant. Attracting pollinators means that natural sounds, like birdsong, really are essential for plants.
- It improves nutrient absorption, meaning that certain sound frequencies can enhance nutrient uptake and photosynthesis.
- It enhances the process rates, meaning it helps seeds sprout faster by encouraging them to take in more food and water.
- Some noise can reduce stress and means that gentle sound can help plants cope with stress. Plants have lots of stress like water stress, nutrient deficiency and temperature extremes. Water stress means when there is too much salt in water that they are given or they don't get enough water

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- Nutrient deficiency means that plants don't get enough nutrients that they need.
- Temperature extremes means that the temperature needs to be balanced in order for the plants to grow. When it's too hot plants can get stressed and stop growing. When it's too cold they can freeze and die.

Do no noise or complete silence have an affect?

- Plants are naturally adapted to grow in environments they are placed in. They do not need sound to grow. They mainly need sunlight, water, air and soil nutrients to grow. However, some of these essentials bring in gentle natural sounds.
- Some studies suggest that plants need these gentle natural noise to slightly stimulate growth. However, plants do not sound vibrations to warn each other or defend themselves.
- They depend on the chemical and sometimes physical signals, not sound, to communicate. E.g. When a plant is attacked by insects, it releases chemicals into soil or air which is detected by neighboring plants and they start protecting themselves.

What noises will affect the plants in a positive way?

- Classical music often benefits noise
- Quran
- Positive tones
- Calm sweet tones
- low frequency noise
- Bird song
- Flowing water

What noises affect plants in a negative way?

- Screaming or yelling
- Not rhythm noises because harsh sounds make plants die.
- Unstable noises
- High frequency noises

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- Harm sounds

What are frequencies in sound?

- Frequencies in sounds are the number of vibrations per second that a sound wave completes. These are measured in Hertz(Hz). These vibrations are produced by a source, such as musical instruments. They travel through the air to reach our ears. The frequency of a sound determines its pitch. Higher frequencies correspond to higher-pitched sounds, while lower frequencies produce lower-pitched sounds. For example, a high-pitched whistle might have a frequency of around 10,000 Hz, whereas a deep bass note could be as low as 50 Hz.
- Humans can only hear from 20 Hz to 20,000 Hz.

WHY WE CHOSE THIS PROJECT

We chose this project as we noticed trees wilting or plants dying near

highways and minimal or no greenery near industrial sites and wondered

why that happens? So we thought maybe noise could be a factor.

This project helped us to be aware of the affects of noise pollution on

living organisms typically plants. The experiment helped us to dig deeper

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into concepts like vibrations, growth and stress responses of the plants.

Details about our plants

Aloe and Haworthia:

- It is a slow-growing succulent plant adapted to dry environments and survive harsh conditions.
- They store water in their leaves and grow slowly to conserve energy typically grow a few cm per year.
- The instructions suggest:
- Water only when it is BONE dry.
- Water less in winter and more in summer

Tropical plant:

- It often grows fast typically to several cm per week and are adapted to warm, humid conditions.
- The instructions suggest:
- Water only when almost dry to prevent root rot. Water the plant until it is moist or 1-2 inches inside the soil.
- Water less in winter and more in summer
- You can water smaller pots every 4-7 days. Medium pots every 6-10 days and larger pots every 10-14 days.

March,1,2026

We added some percentage increase and some data charts:

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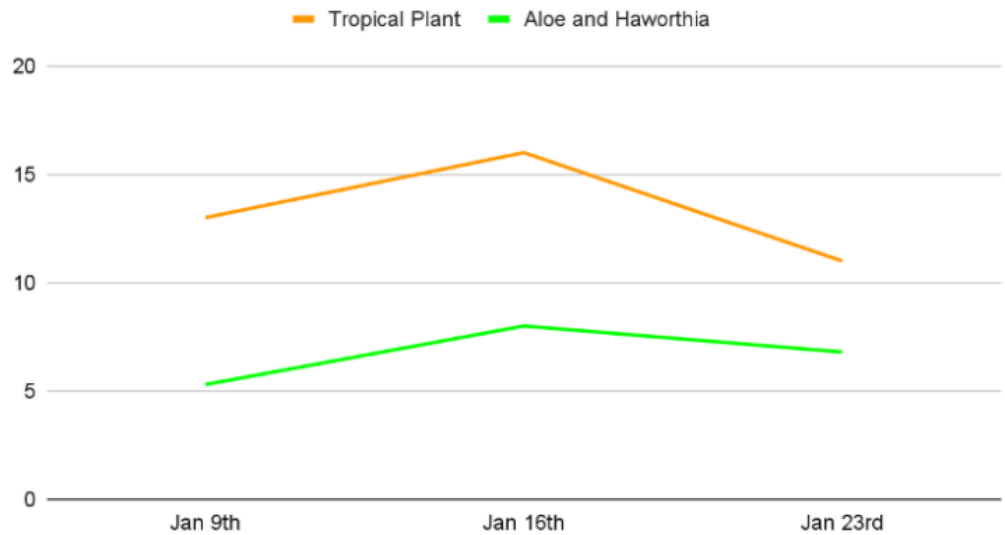
Does noise affect plant growth?

By:Hanaa and Heba Adil

Height comparisons in percentages from the last measurement.

Plants	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia
Sound	High		Medium		Low	
Jan,9	15 cm	7 cm	13.7 cm	7.5 cm	13 cm	5.3 cm
Jan,16	16.66% increase	28.57% increase	24.08% increase	13.3% increase	23.07% increase	50.9% increase
Jan,23	20% decrease	5.55% decrease	23.5% decrease	17.64% decrease	31.25% decrease	15% decrease

Low Noise



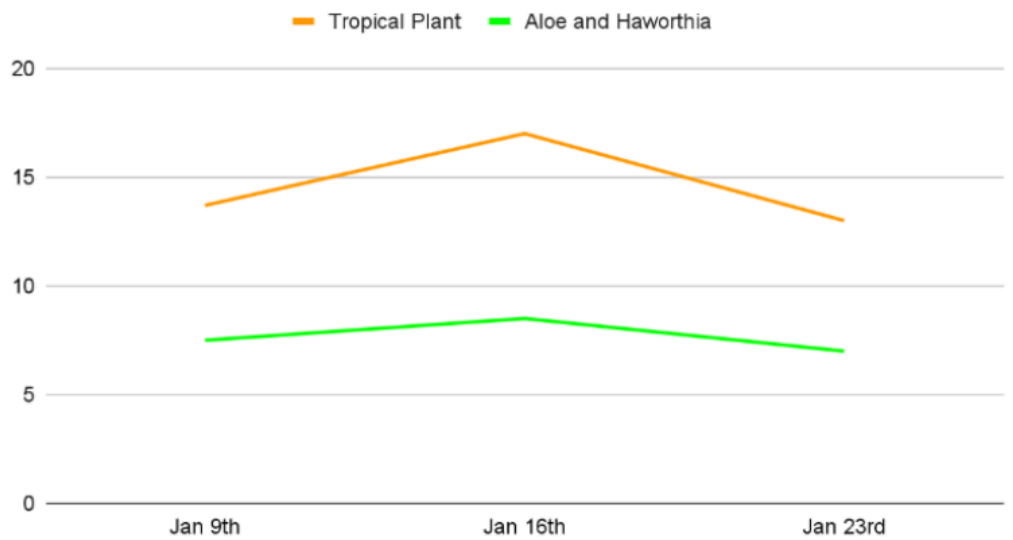
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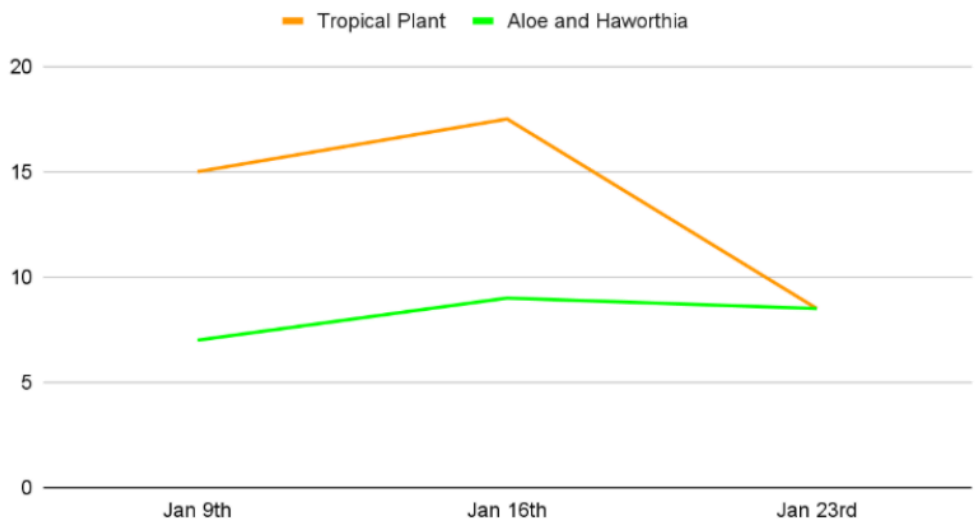
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Medium Noise



High Noise



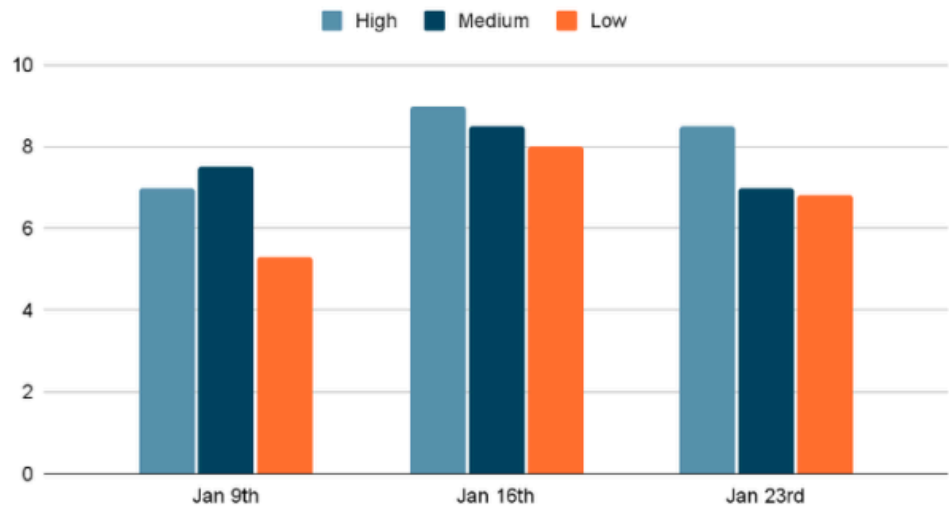
Log Book for science fair

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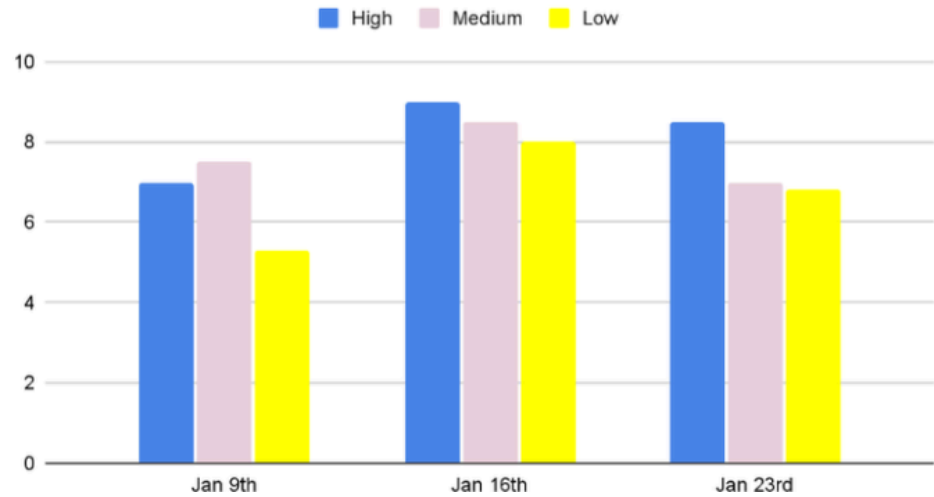
Does noise affect plant growth?

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Aloe and Haworthia



Tropical Plant



March,1,2026

We explained the conclusion further :)We learned that some sounds can have some effect on plant growth. But it depends on the following:

- Type, volume and duration of the sound.
- Type of the plant (Plant species have different sensitivities to vibrations).
- The change in the exposure to the basic needs of the plant

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	<p>(sunlight, water, air and nutrients).</p> <ul style="list-style-type: none">● Loud noise can affect in a negative way causing stress in plants and slows growth.● No noise will allow normal plant growth.● Soft sounds or gentle noise stimulates growth slightly.
March,1,2026	<p>We explained the observations/analysis further :The least noise level plants grew better and had minimal broken leaves or crinkly leaves.</p> <ul style="list-style-type: none">● The highest noise level plants showed burnt/crinkly leaves while the medium noise level plants only had some.● The last week of our experiment had cloudy weather which affected our experiment as one of the essential need (sunlight) was missing which affected the height of all the plants in the experiment.● We compared the experiment by how much it grew.
March,1,2026	<p>We edited the Whats next :</p> <ul style="list-style-type: none">● Long periods of experiments and research further can help in finding the different species of plants that can sustain higher noise vibrations. For example, which plants are more suitable to survive constant noise in industrial areas (Like succulents in our experiment were able to withstand loud sounds), and which plants would be better for residential areas.● Which frequency of vibration can help plants grow better and that could be applied to plants/trees/crops to improve growth.
March,1,2026	<p>We edited the errors :</p> <ul style="list-style-type: none">● It was really hard to get the plants for our experiment. Most stores did not carry many options in winter.● We should have added more time for the experiment to notice a more significant effect.● The last week of our experiment it was very cold and cloudy which impacted the height of all plants.● Substantial outcomes could be observed if this experiment was completed in spring or summer.

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March,1,2026

We edited the citations/references:

- https://www.google.com/search?q=differences+between+Aloe+and+Howorthia+and+Tropical+plant&rlz=1CAOUAQ_enCA1196&oq=differences+between+Aloe+and+Howorthia+and++Tropical+plant&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIJCAEQIRgKKGKABMgclAhAhGI8C0gEJMzYyNTNqMGo3qAIAAsAIA&sourceid=chrome&ie=UTF-8&sei=Fe5baZWIF-aY0PEPxC5yAl&safe=active&ssui=on-gardenia
- <https://livetoplant.com/investigating-the-impact-of-impulse-noise-on-plant-growth/> -live to plant
- https://www.google.com/search?q=how+many+times+do+you+have+to+water+Aloe+and+Haworthia+and+tropical+plant&sca_esv=8f86c1cd49cc125e&rlz=1CAJEHJ_enCA1196&ei=WCVgadLIJcef0PEPvcLrKQ&ved=0ahUKEwjS8e2O9fyRAxXHDzQIHT3hOgUQ4dUDCBE&uact=5&oq=how+many+times+do+you+have+to+water+Aloe+and+Haworthia+and+tropical+plant&gs_lp=Egxnd3Mtd2l6LXNlc nAiSWhvdyBtYW55IHRpbWVzIGRvIHlvdSBoYXZlIHRvIHdhdGVyIEFsb2UgYW5kIEhhd29ydGhpYSBhbmQgdHJvcGJjYWwgcGxhbnRI4yJQ9A5Y9R9wAHgAkAEAmAGLAAAB weqAQM4LjO4AQPIAQD4AQGYAgKgArwBwglEECEYCpgDAOIDBRIBMSBAiAYBkgcDMS4xoAfGFbIHazEuMbgHvAHCBwcljEuMC4xyAcLgAgA&sclie nt=gws-wiz-serp&safe=active&ssui=on-promix
- [https://sarahmerron.com/noise-pollution-and-howling-dogs/#:~:text=The%20effects%20of%20noise%20pollution%20on%20the,okay%2C%20so%20maybe%20plants%20don't%20have%20ears!-Sarah Merron](https://sarahmerron.com/noise-pollution-and-howling-dogs/#:~:text=The%20effects%20of%20noise%20pollution%20on%20the,okay%2C%20so%20maybe%20plants%20don't%20have%20ears!-Sarah%20Merron)
- [https://pmc.ncbi.nlm.nih.gov/articles/PMC7671032/#:~:text=Sound%20stimuli%20can%20influence%20germination,the%20yield%20of%20some%20crops.&text=Furthermore%2C%20sound%20waves%20can%20improve,increase%20their%20tolerance%20to%20dr ought.-National Library of Medicine](https://pmc.ncbi.nlm.nih.gov/articles/PMC7671032/#:~:text=Sound%20stimuli%20can%20influence%20germination,the%20yield%20of%20some%20crops.&text=Furthermore%2C%20sound%20waves%20can%20improve,increase%20their%20tolerance%20to%20dr ought.-National%20Library%20of%20Medicine)
- [https://www.bing.com/search?q=can%20you%20explain%20what%20Regulates%20Hormone%20Levels%20means%20in%20plants&qsn&form=QBRE&sp=-1&lq=0&pg=can%20you%20explain%20what%20regulates%20hormone%20levels%20means%20in%20plants&sc=0-61&sk=&cvid=92E2E40851E944C5901F9A047E44AF45-National Library of Medicine](https://www.bing.com/search?q=can%20you%20explain%20what%20Regulates%20Hormone%20Levels%20means%20in%20plants&qsn&form=QBRE&sp=-1&lq=0&pg=can%20you%20explain%20what%20regulates%20hormone%20levels%20means%20in%20plants&sc=0-61&sk=&cvid=92E2E40851E944C5901F9A047E44AF45-National%20Library%20of%20Medicine)
- [How to care for the Haworthia succulent | Plants 101 - The Sill](#)
-The Sill

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Does noise affect plant growth?

By:Hanaa and Heba Adil

- [How Does Noise Pollution Affect Plants? - Green Packs](#) -Green Packs
- [Types of Water Stress \(Drought, Salinity\) - ClassNotes.ng](#) -ClassNotes
- [Nutrient Deficiencies Definition - Intro to Botany Key Term | Fiveable](#) -Fiveable
- <https://soundcy.com/article/what-are-frequencies-in-sound>-Soundcy
- <https://iere.org/what-sounds-help-plants-grow/>-Iere
- <https://maweb.org/how-does-noise-pollution-affect-plants/>-Maweb
- [The Effect of Quranic Verses on Plant Growth by Amena Awadh on Prezi](#)-Prezi
- [Note Frequency Chart \(Pitch to Note\)](#)-Muted.io
- [What is Sound and How do we Hear it?- Let's Talk Science](#)-Let's talk Science
- [How Does Music Affect a Plant's Growth? - California Learning Resource Network](#)-California learning resource network
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- -National Library of Medicine
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Log Book for science fair

Blooming to the beat

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By:Hanaa and Heba Adil

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-

March,1,2026

We edited the acknowledgement:

- Mrs. Abdelmoneim (our teacher)
- Our family (who helped us get the plants in winter and set-up the different areas to ensure controlled variables are about the same in each location).
- Our friends (Arya Ahmed and Manasa Nassif to help with the video and citations).
- The judges at our School Science Fair who gave us suggestions and insights to improve the project.

March,1,2026

We edited the Results

- The lowest noise level plant grew slightly more than the high and medium noise level.
- The high noise level plant grew less than we expected.
- Due to the uncontrolled change in the natural environment (cloudy weather), there was an overall decline in the heights of all three specimens.

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This is our height measurements we took on every Friday for a month:

Plants	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia
Sound	High		Medium		Low	
Jan,9	15 cm	7 cm	13.7 cm	7.5 cm	13 cm	5.3 cm
Jan,16	17.5 cm	9 cm	17 cm	8.5 cm	16 cm	8 cm
Jan,23	14 cm	8.5 cm	13 cm	7 cm	11 cm	6.8 cm

Height comparisons in percentages from the last measurement.

Plants	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia	Tropical Plant	Aloe and Haworthia
Sound	High		Medium		Low	
Jan,9	15 cm	7 cm	13.7 cm	7.5 cm	13 cm	5.3 cm
Jan,16	16.66% increase	28.57% increase	24.08% increase	13.3% increase	23.07% increase	50.9% increase
Jan,23	20% decrease	5.55% decrease	23.5% decrease	17.64% decrease	31.25% decrease	15% decrease

March,1,2026

We added everything to the cysf platform.

