

Design and Construction of an Experimental Setup to Enhance Mineral Weathering through the Activity of Soil Organisms

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Materials

Name	Company	Catalog Number	Comments
Acryl sheet plates	WSV kunststoffen BV	N/A	Used for holding columns, funnels, irrigation tubes and pipes.
Adapter ring	Tameson	FL2S-FM-B-014G-034G	Used ot make the system to connect the PU hose to the tap.
Cable ties	Gamma	456196	Used for holding the mesh system.
Citric acid	Nortembio (amazon.nl)	B01BDLOGW2	Used for cleaning pipes and funnels.
CytoFLEX flow cytometer	Beckam Coulter	CytoFLEX	
Dishwasher soap	BOOM	77000307.9010	Used for cleaning the jerrycans.
Eight relay expansion module	Control by web	X-12s	Used to control the valves of hte irrigation system.
End cap	Wildkamp	819906	Used to close one end of the main tube of the irrigation system.
Fridges	HorecaGemak	DIA-BVL031/6P	Used for storing the jerrycans.
Funnels	Praxisdienst	135864	Used for directing the leachate from the columns to the jerrycans. 75 mm diamater.
Hand punch	Wildkamp	719928	Used to cut holes for small tubes in the main tube of the irrigation tube.

HDPE Jerrycan 10 L	Glas-shop.be	105157	Come with lid. Used to collect the leachate.
HDPE Jerrycan 5 L	Glas-shop.be	105156	Come with lid. Used to collect the leachate.
Hexagon nut	Fabory	51080.100.001	Used to block acryl sheets on metal screws.
Label printer	Brother	PT-H107B	Used for printing labels to stick on acryl sheets.
Ldpe irrigation pipe	Wildkamp	15382585	Used to make main tube of the irrigation system.
Luggage scale	United Entertainment	8718274546996	Used to weigh jerrycans.
Mesh 10 µm	Franz Eckert	PES-10/2	Used for the mesh system.
Mesh 20 µm	Franz Eckert	PES-20/13	Used for the mesh system.
Metal screws	Schroeven goothandel.nl	100975401010	Used to install acryl sheets.
Micro hose for drip irrigation	Wildkamp	15119128	Used to make small tubes of the irrigation system.
Middle ring	self-made with 3D printer	self-made with 3D printer	Used for holding the columns a few centimeters above the funnels.
Nosepiece	Wildkamp	15045986	Used to connect the solenoid valve to the irrigation pipe.
Nylon mesh	Sefar	N/A	1 mm mesh used for the top of the columns to prevent earthworms' escape.
Plastic beads	lyondelbasell	TRC 352N C12507	Used for the mesh system.
Plug-in fitting with 2 connections	Tameson	F24V5	Used at the end of the system to end the PU hose.
Polycarbonate enclosure	RS	498-5387	Used to house the electrical components of the irrigation system.
Power cable	RS	775-6075	Used to connect the valves.
pp coupling	Wildkamp	719780	Used to make the system to connect the PU hose to the tap.
Pressure regulator	Wildkamp	719943	Used to make sure all small tubes were releasing same amount of water.
PTFE tape	GAMMA	237001	Used ot wrap the end of hte irrigation pipe.
PU hose	Tameson	PU-8-1198-50-1	Used to connect all the valves with eath other and to the tap.
PVC pipes	Rubbermagazijn	99001230	Used for connecting the funnels to the jerrycans.
PVC tubes	Wildkamp	91700	Used to make the columns.
Rail power supply	RS	145-7873	Used to supply power to the eight relay expansion module.
Rubber bands	PasschierTerpo	8714603820621	Used to hold the mesh for earthworms.
Solenoid valve	Tameson	CM-DA014B020E-024DC	Used for opening and closing of the waterflow.
Sprinklers	self-made with 3D printer	self-made with 3D printer	Used for evenly distribute the water over the columns.
Stainless steel plates	24/7 tailor steel	N/A	Used as a frame for the set-up above the fridge.
T-piece plug in fitting	Tameson	F25DT	Used to connect the solenoid valve to the PU hose.
TPU 95A material	MakerPoint	1756	Used to print components with 3D printer.
Washer carriers	Fabory	50095.100.001	Used to put below hexagon nut.

Web Enabled Controller	Control by web	X-400-I(9-28 VDC)	Used for allowing online control of the irrigation settings.
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