OpenAg MVP Bill of Materials

This document will show the current and ideal bill of materials for the MVP. As you can see, the current build is $329.57 without tax, which is about $30 over the targeted budget of $300. The current ideal build is listed with links, and totals out at $241.05, without tax. With tax, it would be around $258. This leaves over $40 for an aeroponic expansion.

Current Build BOM:

1) Enclosure, Total: $54.20
   a) Reflectix 16in x 25ft mylar - $16.25
   b) (2) 24in x 24in x 1/2in plywood - $10.36
   c) (8) 3/4in Side Out Elbow PVC fittings - $12.80
   d) (3) 3/4in x 10ft PVC pipe - $6.84
   e) 75pc 6-32 thread x 1-1/2in bolt and nut set - $4.58
   f) Duct tape - $3.37

2) Lighting, Total: $61.43
   a) (4) Plastic Pull Chain Lamp Holder - $13.16
   b) (2) 6ft extension cords - $3.14
   c) Indoor digital timer - $9.97
   d) Red Winged Wire Connector - $3.18
   e) (2 packs of 2) GE Soft White Bright Stick - $31.98

3) Brain and Power, Total: $131.55
   a) Plastic wire connectors - $1.51
   b) 4in square gang box - $0.99
   c) 4in 2 outlet cover - $0.99
   d) 6 outlet surge protector - $7.98
   e) (2) outlets - $4.16
   f) Raspberry Pi 3B Project Kit - $84.99
   g) SI7024 Temp/Humidity Sensor - $9.95
   h) 5 pack 12v power adapter - $13.99
   i) 4 channel relay - $6.99

4) Growing Setup, Total: $82.39
   a) Bus Tub - $8.54
   b) Bus Tub Lid - $7.81
   c) Aquarium Air Pump - $6.77
   d) Air hose and connectors - $6.02
   e) Air stone set - $1.98
   f) (10) Net pots - $2.32
   g) Rock wool - $14.99
   h) pH down - $13.99
   i) Nutrient - $13.99
   j) (2) Computer fans - $5.98

5) Total for entire BOM: $329.57
Ideal Build BOM:

1) Enclosure, Total: $46.91
   a) Reflectix 16in x 25ft mylar - $16.25
      i) https://www.amazon.com/Reflectix-ST16025-Staple-Insulation-Inch/dp/B00BQSYRO/ref=sr_1_3?ie=UTF8&qid=1496639530&sr=8-3&keywords=Reflectix
   b) 24in x 24in x ½ in plywood - $5.18
      i) Local hardware store purchase (Lowes)
   c) (8) Side out elbow PVC fittings - $12.80
      i) https://www.lowes.com/pd/LASCO-3-4-in-Dia-90-Degree-PVC-Sch-40-Side-Outlet-Elbow/3344664
   d) (3) 3/4in by 10ft PVC pipe - $6.84
      i) https://www.lowes.com/pd/Charlotte-Pipe-3-4-in-x-10-ft-200-SDR-21-PVC-Pipe/3133103
   e) 75pc 6-32 Thread 1-1/2in bolt and nut set - $4.85
   f) Duct tape - $0.99
      i) https://www.amazon.com/3M-COMPANY-1005-BLK-IP-1-5x5YD-Black/dp/B0018PFWCW/ref=sr_1_5?ie=UTF8&qid=1496640170&sr=8-5&keywords=duct+tape

2) Lighting, Total: $44.14
   a) Lamp holder - $1.23
      i) https://www.amazon.com/Leviton-9875-Porcelain-Incandescent-Lampholder/dp/B00002N7IM/ref=sr_1_13?ie=UTF8&qid=1496640315&keywords=lamp+holder
   b) (2) 6ft extension cords - $3.14
      i) https://www.lowes.com/pd/Project-Source-6-ft-13-Amp-125-Volt-3-Outlet-16-Gauge-White-Indoor-Extension-Cord/3555632
   c) Wing wire connectors - $1.98
   d) (2 packs of 2) GE Soft White Bright Sticks - $28.80
      i) https://www.amazon.com/GE-Lighting-32309-Replacement-1520-Lumen/dp/B017WY4IWM/ref=sr_1_1?ie=UTF8&qid=1496640773&sr=8-1&keywords=GE%2Bbright%2Bstick&refinements=p_n_feature_keywords_five_browse-bin%3A7801675011&th=1
   e) 4 socket adapter - $8.99
      i) https://www.amazon.com/Fancierstudio-Socket-Adapter-Holder-Splitter/dp/B00HZV2938/ref=pd_sim_60_11?encoding=UTF8&pd_rd_i=B00HZV2
3) Brain and Power, Total: $93.55
   a) 4in square gang box - $1.05
   b) 2 gang electrical cover (cheaper in store, store price listed) - $0.99
      i) https://www.lowes.com/pd/Raco-2-Gang-Square-Metal-Electrical-Box-Cover/50053659
   c) (2) Outlets - $1.18
   d) 6 outlet surge protector - $3.97
   e) Raspberry Pi 3 B - $35.99
   f) Raspberry Pi breakout board + ribbon, assembled - $7.95
   g) Raspberry Pi power supply - $7.50
   h) Breadboard and jumper wires - $3.99
      i) https://www.amazon.com/Breadboard-CandyQ-400-point-Experiment-Jumper/dp/B01I9132GK/ref=sr_1_3?ie=UTF8&qid=1496642248&sr=1-3&keywords=breadboard
   i) SI7024 Temp/Humidity Sensor - $9.95
      i) https://www.amazon.com/gp/product/B01M0BJ139/ref=oh_aui_detailpage_o00_s00?ie=UTF8&psc=1
   j) 5 pack 12v power adapters - $13.99
      i) https://www.amazon.com/gp/product/B00FEQB4E1/ref=oh_aui_detailpage_o00_s00?ie=UTF8&psc=1
   k) 4 channel relay - $6.99
      i) https://www.amazon.com/gp/product/B00KTEN3TM/ref=oh_aui_detailpage_o00_s00?ie=UTF8&psc=1

4) Growing Setup, Total: $56.45
   a) Bus tub - $7.08
i) [https://www.walmart.com/ip/Crestware-22-1-2-x-15-3-4-x-7-Polypropylene-Bus-Tub-Gray-BT7GY/728306287](https://www.walmart.com/ip/Crestware-22-1-2-x-15-3-4-x-7-Polypropylene-Bus-Tub-Gray-BT7GY/728306287)

b) Bus tub lid - $7.81

c) Aquarium air pump - $6.77

d) Aquarium air hose and fittings - $6.02

e) Air stone pack - $1.98
   i) [https://www.walmart.com/ip/Hagen-Elite-Cylinder-Air-Stone/19229844](https://www.walmart.com/ip/Hagen-Elite-Cylinder-Air-Stone/19229844)

f) (10) 2in net pots - $1.50
   i) [https://www.1000bulbs.com/product/91006/GROW-HG2NETCUP.html?gclid=CjwKEAjw387JBRDPtJePvOej8kASJADkV9TLQ4VP273TvVj3RxGr6j0sXFozFjQiDOi8aeLeyZ6EERoCBGHw_wcB](https://www.1000bulbs.com/product/91006/GROW-HG2NETCUP.html?gclid=CjwKEAjw387JBRDPtJePvOej8kASJADkV9TLQ4VP273TvVj3RxGr6j0sXFozFjQiDOi8aeLeyZ6EERoCBGHw_wcB)

g) Rock wool - $5.95
   i) [https://www.amazon.com/Grodan-Rockwool-Propagation-Lightning-Quantity/dp/B00XQECSPM/ref=sr_1_4?s=lawn-garden&rps=1&ie=UTF8&qid=1496643185&sr=1-4&keywords=rockwool&refinements=p_85%3A2470955011](https://www.amazon.com/Grodan-Rockwool-Propagation-Lightning-Quantity/dp/B00XQECSPM/ref=sr_1_4?s=lawn-garden&rps=1&ie=UTF8&qid=1496643185&sr=1-4&keywords=rockwool&refinements=p_85%3A2470955011)

h) pH down - $9.93
   i) [http://www.horticulturesource.com/product_info.php?products_id=21891&gclid=CjwKEAjq387JBRDPTJePvOej8kASJADkV9TL-auhmO9yFAfL4XykFsly3e1wvtfzvdvxLNPJSQ0RoCQqHw_wcB](http://www.horticulturesource.com/product_info.php?products_id=21891&gclid=CjwKEAjq387JBRDPTJePvOej8kASJADkV9TL-auhmO9yFAfL4XykFsly3e1wvtfzvdvxLNPJSQ0RoCQqHw_wcB)

i) Nutrient - $7.42
   i) [https://www.amazon.com/General-Hydroponics-FloraBloom-Fertilizer-16-Ounce/dp/B003Y36AOA/ref=sr_1_6?ie=UTF8&qid=1496643488&sr=8-6&keywords=hydroponic+nutrients&refinements=p_89%3AGeneral+Hydroponics](https://www.amazon.com/General-Hydroponics-FloraBloom-Fertilizer-16-Ounce/dp/B003Y36AOA/ref=sr_1_6?ie=UTF8&qid=1496643488&sr=8-6&keywords=hydroponic+nutrients&refinements=p_89%3AGeneral+Hydroponics)

j) (2) computer fans - $1.99
   i) [https://www.amazon.com/DC-12V-Brushless-Cooling-Fan/dp/B06XQBH9MW/ref=sr_1_128?s=pc&ie=UTF8&qid=1496643643&sr=1-128&keywords=computer+fans](https://www.amazon.com/DC-12V-Brushless-Cooling-Fan/dp/B06XQBH9MW/ref=sr_1_128?s=pc&ie=UTF8&qid=1496643643&sr=1-128&keywords=computer+fans)

5) Total for Ideal BOM: $241.05