

BURRO



Carry, Follow, Tow, Scout, Patrol.



The future of labor is here.



Meet Burro

Carry, Follow, Tow, Scout, Patrol.

The solution to labor challenges

Introducing Burro, the only fully autonomous robot platform that works alongside people to force multiply their work, while constantly learning to do more. Burros are outfitted with computer vision, artificial intelligence and high-precision GPS for robust, reliable autonomy. Burro tirelessly completes many tasks, from carrying harvests to towing, mowing (in development), scouting, spraying and patrolling. Just like the 100s of Burros working in the field today, our Pop Up Autonomy™, enables Burro to immediately work for you with very little training.





Labor is the #1 challenge facing growers today

With costs rising and worker availability falling, labor is impacting the grower's bottom line. This is especially true with table grapes, berries and nursery crops, where over 50 percent of revenue goes to labor, and that number is rising.

Solution: Burro, a multi-use autonomous platform for work outdoors and indoors

Burro is the autonomous solution to optimizing farming activities. Our plug-and-play Burro robots work alongside people to help them work more productively today, while laying the foundation for more autonomy tomorrow. Hundreds of Burros working in the field have consistently generated an up to 40 percent reduction in labor depending on the application.



Carry: Burro excels at reducing worker fatigue, and eliminating costly non-productive walk time associated with moving fruit out of the field.

Follow: Burro sees and follows workers from location to location while carrying up to 500 pounds of produce, packing materials, tools and more.

Tow: When outfitted with a Tow Kit, Burro can retrace routes while towing trailers outdoors or indoors. Stay tuned for details on our mowing attachment in development now.

Scout: With Bitwise Agronomy's Superhuman crop scouting on-board, Burro navigates while taking images of each plant and using AI to count grape clusters or blueberries. Burro pushes results online for real-time yield estimates.

Patrol: Guard Dog can be used for indoor or outdoor security. With this hardware and autonomy, Burro patrols 24/7 while sending text alerts to your phone when intruders are seen. Guard Dog autonomously returns to its docking station for charging when needed.



Crew results

Burro supporting table grapes harvest

Crews generated up to 40% gains, depending on layout, fruit volume and other factors.
Gains observed in A/B comparisons during 2020-2022 harvest seasons:

Burro Crew Metrics vs. Traditional (Crew vs. Crew)							Overall Output Gains / Day (Boxes)				
Grower	Layout	Pack Style	Burro (Box/Hr/Person)	Traditional (Box/Hr/Person)	Gains/hr/Person	%	Hours	Gains/Day/Person	People/Robot	Crew Gain/Day	Gains/Day/Burro
*****	Central Pack	Central Pack/Mixed (Clam+Bag)	7.6	5.2	2.5	48%	8	20	8	494	160
*****	Central Pack	Central Pack/Euro Bag	8.9	7.0	1.9	27%	8	15	4	412	61
*****	Central Pack	Central Pack/Mixed (Clam+Bag)	7.2	6.3	0.8	15%	8	7	4	155	26
*****	Central Pack	Central Pack/Styro	7.2	6.3	0.8	10%	7	4	12	244	50
*****	4 people/Burro (2 teams), half rows	NA	6.7	5.9	0.9	15%	8	7	4	NA	28
*****	Full rows - raised drip line - passing boxes under line, 3-6 people/Burro	NA	5.9	4.8	1.1	24%	7	8	4	190	32
*****	Full Rows - teams of 6 with 3 people in a row and 3 packers	NA	5.5	4.4	1.0	24%	8	8	8	384	64
*****	Half Rows - teams of 6 with 3 people in a row and 3 packers	NA	6.5	5.2	1.3	26%	8	10	8	499	83

Burro supporting blueberry harvest

Crews generated up to 40% gains by replacing walk time to and from the field, plus wait time at the QC stand/trailer.
Gains observed in A/B comparisons during the 2022-2023 harvest seasons:

Burro Crew Metrics vs. Traditional (Crew vs. Crew)							Overall Output Gains / Day (Pounds)					
Grower	Layout	Pack Style	Burro (Lbs/Hr/Person)	Traditional (Lbs/Hr/Person)	Gains/hr/Person	%	Hours	Gains/Day/Person	People/Robot	Crew Size	Crew Gain/Day (24 People)	Gains/Day/Burro (Lbs)
*****	Traditional Hand Harvest	15# Totes	29.7	20.6	9.1	44%	8	73	8	24	1747	582
*****	Traditional Hand Harvest	15# Totes	47.2	39.3	7.9	20%	8	63	8	24	1517	506
*****	Traditional Hand Harvest	15# Totes	42.4	30.7	11.7	38%	8	94	8	24	2246	749
*****	Traditional Hand Harvest	15# Totes	19.4	16.0	3.4	21%	8	27	8	24	656	219
*****	Traditional Hand Harvest	15# Totes	25.9	23.6	2.3	10%	8	19	8	24	444	148
*****	Traditional Hand Harvest	15# Totes	23.5	20.5	2.9	14%	8	23	8	24	559	186
*****	Traditional Hand Harvest	15# Totes	21.6	16.1	5.5	34%	8	44	8	24	1058	353
*****	Traditional Hand Harvest	15# Totes	23.7	15.9	7.8	49%	8	62	8	24	1498	499

Hardware

Sensors	Stereo cameras & RTK GPS
Communication	4G Modem
Computing	Intel CPU and Nvidia GPU
Batteries	Swap-able AGM & LFP chemistry available
Battery Capacity*	6-14+ miles / 10+ hours*
Drive Type	4 Wheel drive
Max Speed	5 MPH / 2.25 M/S
Horsepower	5 HP
Payload	Up to 500lbs**
Max Towing Capacity	Up to 2000 lbs**
Attachment Compatibility	24V Unregulated power, USB 3.0, and standardized mounting holes for attachments/implements

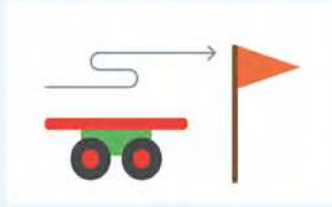
* Depending on batteries selected and how Burro is used

** Depending on terrain



POP-UP AUTONOMY™

Burro is easy to set up and easy to use. Burro is always ready to support your crews.



INDOOR/OUTDOOR AUTONOMOUS ROUTES

Burro is fully operational indoors or outdoors, supporting you wherever you work.



ONLINE DASHBOARD & DATA ONLINE

Track your fleet's location and operational status from the convenience of your desk or mobile device.

Burro is the platform for custom applications

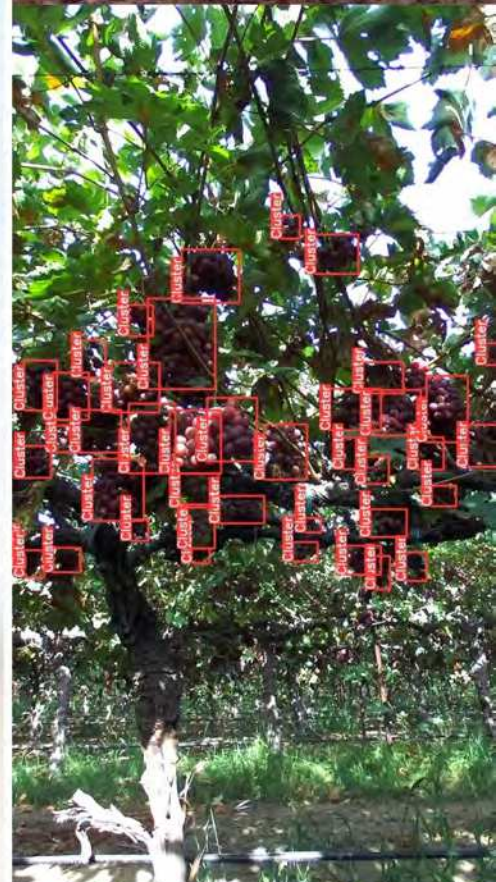
Autonomous farming begins with Burro's collaborative applications that unlock practical technology for agricultural operations. This powerful and versatile platform empowers partners to develop innovative solutions that address a wide range of needs and challenges.



Bitwise Agronomy Crop Scouting helps farmers evaluate their crop by using cutting edge AI technology to "see" like humans, but better. With Bitwise on-board as a digital implement, crop scouting is more accurate, more consistent and analyzed at superhuman speeds.



The BloomX mechanical arms mimic the buzz of the bumblebee. When installed, Burro autonomously navigates your field while BloomX bio-mimics pollination so you can focus on higher-level tasks.





BURRO

Carry, Follow, Tow, Scout, Patrol.

2X TOP-10
NEW PRODUCT
WINNER



WORLD AG EXPO®
2022 & 2023

**ORDER BURROS TODAY
FOR DELIVERY THIS SPRING.**

Ask us about our flexible purchase options.

CONTACT US
via email: SALES@BURRO.AI
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Engineered & Assembled in the USA
Patent Pending

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