



Versatile lupins on the rise

A high-speed, flexible robotic packing solution helps an Australian food manufacturer meet rising global demand.

Text & Photos: ABB

Around the world, lupins – part of the legume family that includes the likes of soybeans, peas and lentils – are experiencing incredible growth in consumer demand. They are a rich natural source of protein and fiber, are easily digestible, cholesterol-free and provide a convenient and healthy option for consumers who have celiac disease or simply want to follow a gluten-free diet.

In Australia, lupins play a vital role in the ecological balance of agriculture. West Australian manufacturer, Lupin Foods Australia, specializes in a range of foods based on Australian sweet lupin, which has been developed to meet the growing demand.

Lupin Foods Australia, a wholly-owned subsidiary of global farmer cooperative CBH Group, now exports packaged lupin

products to markets as wide-reaching as South East Asia, the Middle East, North Africa and Western Europe. The company has been carving out its niche in the health food market since 2006, with offerings including Lupin Tempe, Lupin Dahl, Lupin Falafel and Lupin Carrot Cake.

When Lupin Foods Australia required a robotic solution to streamline its packing processes, it called on local ABB Authorized value provider and robotic automation specialist Robotic Solutions WA to design a system that could simultaneously lower palletizing costs and keep up with rising output levels.

Lupin Foods Australia General Manager, David Fienberg says the company contacted Robotic Solutions WA due to their track record of innovation and their use of equipment combined with a solid reputation from ABB.

"We looked at many robots and control systems and found Robotic Solutions' offering was the most capable of adapting to our environment and growing with our business. ABB has a very strong name in Western Australia and around the world – in a diverse range of industries – and we were therefore confident that the support we'd receive would be more than sufficient to meet our needs," he explains.

Lupin Foods Australia also required a high-speed, efficient system with the capacity to adapt as the business grew.

"We developed a solution that allows us to produce 900 20-kilogram bags per hour, and stack them in such a way as to minimize our freight costs. The system has allowed us to remove wooden pallets from our process entirely, and therefore take advantage of the full capacity of our shipping containers. It also eliminates damage to our bags," Fienberg says.

Lupin Foods Australia has enjoyed a number of operational improvements since employing the ABB robot, including increased packing speed and productivity, mitigation of health and safety risks and simplified worker training.

"The ABB robot is very quick, its maintenance is extremely low, and the addition of PLCs makes it really simple to use. The equipment is reliable, and we are able to adapt it to the business as we go," says Fienberg.

"Accessing high-quality food manufacturing labor has traditionally been a real challenge for us in Western Australia. However, using the solution we've developed around the robot, training is now simple. While it has given us the ability to reduce



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David Woodhouse, Robotic Solutions WA Director

our labor requirements, we have also been able to mitigate health and safety risks associated with lifting 20 kilogram bags – because injuries to staff are the last thing we'd ever want," he adds.

Robotic Solutions WA specializes in robot-based automation solutions for palletizing, materials handling, assembly, welding, painting and inspection in a variety of manufacturing sectors. The company offers in-house system design, engineering, manufacturing and testing facilities, and also provides all necessary training, technical support and aftersales service.

Robotic Solutions WA Director, David Woodhouse says the company has been an ABB Authorized value provider for eight years.

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According to Woodhouse, Lupin Foods Australia specified a high-speed system that was reliable, user-friendly and locally supported. "We provided them with a turn-key system which included the system design, the robot, the gripper, the bag pick-up conveyor, everything inside the robot cell, all the safety fencing, and technical aftersales support and training," he explains.

The resulting solution is based on an ABB IRB 460 high-speed robotic palletizer; the compact, 4-axis robot is designed specifically for end-of-line and bag palletizing, occupies 20 percent less floor space, and runs 15 percent faster than its nearest rivals.

"The ABB IRB 460 robot is ideal for this application – it is a very fast, light-

weight palletizing robot that can achieve very fast cycle times. We're currently palletizing 15 bags per minute but there is scope there to go a lot faster if required," Woodhouse says.

He points out that the Lupin Foods Australia application is unique due to its absence of wooden pallets.

"We don't have a pallet as such. The robot picks and places a plastic slip-sheet onto the roller conveyor. The robot then picks, clamps and places the bags onto the slip-sheet unit the stack is complete. The stack is then conveyed out of the robot cell and placed into a shipping container. And since we were able to use a standard gripper design, Lupin Foods Australia now has the option to introduce traditional palletizing down the track, if the business requires it."

Also unique is the speed at which the robot is working, and the flexibility of the robotic system. Lupin Foods Australia is able to select any of its different product types using the PLC, and the robot will alter the way it positions the bags to suit their size, including the number of bags it places per slip-sheet, and the number of layers per container, constantly working to maximize container space.

"We feel we have been able to provide a reliable and flexible system that not only allows the customer to keep their costs down, but truly offers the ability to be tailored to the client's needs," says Woodhouse.

"We will definitely continue to use ABB robots in our future systems."

Click here to see the solution at Lupin Foods, Australia.