MillerCoors Showcase Barley Farm

Silver Creek Valley, Idaho

Status | Project | Contact
Ongoing | Water management | Marco Ugarte, Ph.D., CSCP

MillerCoors Showcase Barley Farm is a state-of-the-art farm in the Silver Creek Valley, Idaho encompassing precision irrigation techniques. This location is a unique, high desert spring creek system surrounded by fertile ground that provides top-quality barley to our brewing operations.

By implementing Best Management Practices (BMPs), the farm has cumulatively saved beyond 400 Million gallons of water in three years of operation while reducing the operational cost from $51/acre to $20/acre due to decreased water pumping demand on the farm. The Showcase Barley Farm has delivered economic, environmental, and social results against our Water Stewardship Strategy through developing strategic partnership with local growers, global Non-Governmental Organisations, and local utility companies.

Lessons Learned

- Water and energy savings can be made whilst barley yields are maintained or, in some situations, increased.
- The body of work from their Showcase Barley Farm has allowed MillerCoors to document the business, environmental, and social case for Barley BMPs as feasible alternatives to improve resource stewardship in the Agricultural Supply Chain.
- The key to success is to provide education, training, and awareness to strengthen the dialogue between companies and their long-standing partners; while incorporating additional stakeholders such as the Federal Government in order to scale-up projects (i.e. SBF) and acknowledge the interdependence among companies from a full crop-rotation standpoint.

The issue

Case background/context

MillerCoors is a beer-brewing company based in the United States. The company recognized that with increasing consumer and retailer consciousness they needed to meet the challenge of improved sustainability and resource stewardship. This challenge provided an opportunity to develop innovative solutions for the sustainable production of beer and to become a leader on these activities within their field.

The first step of the MillerCoors Sustainability Strategy was the commissioning of a business-wide water footprint; tracking water use within all nodes of the beer production commodity chain. The result was that 90% of total water used in the production of their beer was consumed within the agricultural supply chain (ASC) for the cultivation of barley. The biggest opportunities to drive change and reduce resource intensity, in terms of water consumption, were therefore situated outside the boundaries of the MillerCoors' breweries, and rather with the farmers who were growing the barley.

The importance of reducing the water intensity demand of barley production for MillerCoors was supported by the fact that 75% of the total barley that they source through the Growers Direct program is produced within four States (Idaho, Colorado, Montana, and Wyoming) that are often considered Water Stressed.

In order to reduce the water intensity of beer producing operations, MillerCoors set out to design and develop a representative barley farming operation able to accurately describe the challenges and opportunities of Sustainable Farming in the United States.

The objective of the showcase farm was to test multiple water conservation practices in the production of barley to understand whether and how barley yield could be improved while improving water savings. Considering that water delivery is through pumping, the potential to save water can also result in reduction of energy. The aim is to leverage and implement applicable research findings to MillerCoors barley growers to move their production activities towards being less resource intensive. This will virtually reduce the water footprint of individual farms while affording MillerCoors the opportunity to reduce their overall water footprint across the supply chain.

The expected outcomes of the initiative were to:

- Establish a water resource intensity baseline for the most common barley farming processes.
- Establish a financial process baseline that could accurately describe the energy and water nexus from barley farming.
- Explore the potential for significantly reducing resource intensity whilst simultaneously improving crop yields.

The response

The main objective of the case

In 2011, MillerCoors launched The Showcase Barley Farm in the Silver Creek Valley, Idaho; located on soils for top-quality barley production and within proximity of a unique high-desert creek ecosystem. The Showcase Barley Farm came into being as the result of a partnership with The Nature Conservancy (TNC), a global nonprofit organization that manages a large nature reserve surrounding the headwaters of Silver Creek. Given that MillerCoors has historically sourced a portion of its barley from the Silver Creek Valley, a strategic partnership with barley growers and TNC was established in 2008 to grow the crops required while sustaining the surrounding ecosystems which included restoring wetland habitat, conserving water, and monitoring stream flows and water temperatures at Silver Creek.

The 4000 acre (1620 hectares) Showcase Barley Farm tested different conservation irrigation activities including the implementation of precision irrigation, and the establishment of efficient sprinkler systems.

In order to support the uptake of more sustainable barley production practices, in terms of water management, MillerCoor undertook two additional activities. The first was the establishment of a Water Conservation Fund that allowed TNC to match the investments of farmers interested in retrofitting irrigation systems to improve water efficiency. Further incentives for retrofits to increase water efficiency were provided through energy conservation programs established by local utility companies. Idaho Power, for example, contributed 40% of the cost of farming equipment retrofits for several growers.

A second activity was the consolidation of the findings from the Showcase Barley Farm into the MillerCoors Barley Farming Sustainability Guide in 2013. This publication encompasses the lessons learned from this strategic initiative since project inception. Moreover, testimonials and applicable research pieces from the guide have been integrated into the Growers Newsletter: Better Barley, Better Beer.

The results

Outcomes

Water savings

The major outcome of research on the showcase farm was the ability to make significant water savings, whilst simultaneously maintaining or improving the per hectare barley yield, through the implementation of precision irrigation techniques. These included:

- In year one 125 million gallons of water were saved; the equivalent of average water used in one brewery for one month. From a local perspective, the water savings equated to a 9% reduction in total water use for a farm that uses more than a billion gallons of water a season.

- In 2012, the project was expanded and the end guns were shut off on five additional pivots. This precision irrigation technique saved 4 million gallons of water per pivot.

- Overall water flow has been reduced from 1,200 gallons per minute per pivot to 700-800 gallons per minute per pivot.

- Since project inception, the Showcase Barley Farm has reduced water use by a cumulative amount of more than 400 million gallons of water.

Energy savings

As pumping water and irrigation activities for barley production are also energy intensive, the reduction in irrigation for barley production has resulted in significant energy savings on the showcase farm. These include:

- Energy costs were reduced by more than 50%; from $50 per acre to $21 per acre. These savings became significant as farms with equivalent acreage spend approximately $120,000 per year on energy costs.

References

MillerCoors, (2015). *Sustainable Agriculture.* http://www.millercoors.com/GBGR/Partnering-With-Our-Suppliers/Sustainable-Agriculture.aspx

SabMiller, (2014). *Growing Better Barley, More Sustainably.* http://sabmiller.com/home/stories/growing-better-barley-more-sustainably