

Improving Irrigation Efficiency in Pears: Caudle Case Study

Video transcript. *By Tianna DuPont, WSU Extension Specialist, Tree Fruit*

Tianna DuPont: Thank you so much for both hosting this project and for hosting me a little bit today. With the challenges we've had with the industry with both cork and fruit size we really wanted to look at how we can improve our irrigation efficiency. Dr. Lee Kalcsits is looking at our irrigation recommendations, but we also wanted to look at how we can implement that in the orchard. We've got some old irrigation systems in some of these pear blocks and sometimes we have trouble with pressure, or clogging filters, or not putting enough water on. So, we wanted to be able to think about what are the common challenges and then how can we fix them so that folks can implement improved irrigation. So, we looked for some challenging blocks and you guys had one that you were kind enough to let us work in. So, tell me a little bit about what were some of the key challenges in this block?

Larry Caudle: Well, we had a lot of issues, but our biggest challenge was probably the runoff on a 12-hour set. We can't run a 24-hour set because of the hillsides and our fruit size was not good for the most part. We had pockets where it was ok, but not real good. We had dry spots in the block from sprinklers hitting the trees and not getting past. And then just having issues with equipment trying to get on the hillsides after a set. We're spraying every 10 days to 2 weeks, so we have to coordinate the water around that.

Tianna DuPont: What was the standard irrigation set up in this block?

Larry Caudle: We had the old rainbird impact sprinklers on basically a 36 by 36 spacing, and they just weren't real efficient.

Tianna DuPont: So, we had Troy Peters from WSU and Chet Walker from S and W come out and do some assessments and come up with a design the we implemented on half the block so we could compare. Tell me about the new system.

Larry Caudle: The new system are micro sprinklers, there are 10 sprinklers, they're on an 18 by 18 spacing. So, the uniformity of the watering in just fantastic compared to the old system. We're not getting the dry spots; the trees look better. We noticed a difference in the ways the trees looked in the first year. We're excited to see in the next several years what it's going to look like.

Tianna DuPont: Do you have very much runoff with that new system?

Larry Caudle: We don't have any runoff. We had roads getting washed out where we had to haul in dirt, that problem's been eliminated.

Tianna DuPont: How long does it take you to get across the block with the new system?

Larry Caudle: If we need to, we can get around the 8-acre block in 2 and a half days. That's about twice as fast as we need to, but on a hot late summer if we need to get across it real quick, we can do it. It's a great advantage.

Tianna DuPont: I think you told me it's easier to get back into that block, it doesn't take as long to dry out for equipment.

Larry Caudle: Definitely less water more often, it seems to make it easier for us to get equipment on it in a timely fashion. And safety, hillsides get wet, safety come first.

Tianna DuPont: Rene, what was the impact on the fruit? Did anything change?

Renee Caudle: The fruit size was the main thing we noticed. The fruit size increased about one size overall. Our packing returns showed us that we had a significant increase the first year, but a major increase the second year. I believe that the increase in returns would pay for the new system in just a couple years. Definitely worth it.

Tianna DuPont: Thank you. I think it was really useful to look at one of these common challenges of hillsides with runoff and try and look at a potential system to fix it. I really appreciate you hosting the block out here.