



ag management strategies

FIELD REPORT

DELMARVA

WATERMELONS

OVERVIEW

In a recent Mid-Atlantic Ag Management Strategies project, it was demonstrated once again that the P2i (Plant to Irrigation) process brought forth an exceptional outcome that is hard to ignore—the highest yield in this operation’s history, with each acre producing nearly 68,000 pounds of watermelons! That is way beyond the original yield target to improve yield by 10% from 50,000 to 55,000 pounds per acre.

Since the historical regional average yield is about 50,000 pounds per acre, it takes about 7 gallons of irrigated water to produce 1 pound of watermelon. That is because traditional irrigation practices add about 13 acre inches of water annually, which is the same as adding 353,000 gallons of water to each acre. This equates to more than 12.7 million gallons of water for this 36 acre field. However, administering irrigation in a more precise manner, via P2i, has a positive effect on yield, profits and stewardship.

AGRONOMIC DISCOVERIES

During the course of the season, our analytical analysis identified that the plant’s MARZ (Most Active Root Zone) was limited to the top 12 inches of soil depth. Yet the MARZ was not static, and changed daily. On several days it was located at 4 inches and 8 inches. This is important because the plant’s needs and thus the irrigation events/applications were tailored to this precise root location daily.

OUTCOMES WITH IMPACT

YIELD: As in this case, it’s not unusual to discover that the yield exceeded the historical average by 36% and the targeted goal by 24%. Since P2i precisely administers irrigation water per the request of the plant and the environment in which it is experiencing (i.e. Plant Empowerment Cycle), it becomes abundantly clear that watermelons (and all crops for that matter) do indeed respond positively (i.e. yield) to improvements in Plant Water Health (PWH) and Soil Water Health (SWH). It is through the balancing of water and oxygen below the soil surface and the timely application of water, that these outcomes are achieved.

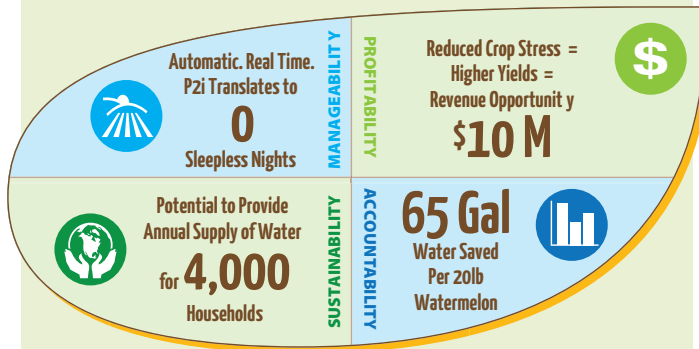
REVENUE: Compared to a traditionally managed field, the P2i process increased the revenue by almost \$70,000. At an

average market value of \$.11/pound, the increased yield would equate to \$2,000 per acre.

WATER AND STEWARDSHIP: When irrigation events are directed from the plant itself, rather than a traditional prescription irrigation model, the water use efficiency improved by nearly 50%, from about 7 gallons of water/lb to less than 4 gallons/lb of production. In this case, 90,000 gallons of water were given back to the community.

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DELMARVA – WATERMELON YIELD & USE EFFICIENCY



- **MANAGEABILITY.** 0 Sleepless Nights. P2i connects the plant’s irrigation needs automatically in real time—no need to outguess the weather.
- **PROFITABILITY.** \$10 million. When crop stress is reduced, it translates into higher yields. The additional revenue opportunity from P2i could generate more than \$10 million for the Delaware and Maryland watermelon industry.
- **ACCOUNTABILITY.** Giving Back 1.25 gallons per serving. With 65 gallons of water saved per 20 pound watermelon, the water use efficiency improved by an estimated 3.26 gallons per pound of watermelon.
- **SUSTAINABILITY.** 4,000 households. If every acre of watermelon production in Delaware and Maryland applied P2i to their production practices, the improved water use efficiency could be estimated to represent about 440 million gallons of water which would provide an annual supply of water to 4,000 households.



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Ag Management Strategies are driven by the individual objectives of each customer. Results may vary according to a range of factors including, but not limited to, the kind and variety of crop, soil type, and environmental conditions.

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