From: Russell Spitz
To: "Walter Nelson"
Cc: "Rooney, Bill"
Subject: RE: Sweet sorghum in Florida
Date: Sunday, October 04, 2009 9:09:55 AM

Thanks for your thoughts.

As most yields to date are on 30" rows and in row spacing of 3.44" if there is cannibalization it should be because of the 3.44" in row spacing, correct?

By using 15" row spacing and in row spacing of 4.5" we should improve the plant spacing and therefore the yields should increase by the increase in plants of approximately 50% per acre.

Your comments please.

Russell W. Spitz

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From: Walter Nelson [mailto:wnelson@ceres.net]
Sent: Friday, September 25, 2009 9:22 AM
To: Russell Spitz
Cc: Rooney, Bill
Subject: Sweet sorghum in Florida

Thank you for sending this Russell. Some thoughts:

We have been seeing yields of 25-40 wet tons/acre per cut depending on the maturity of the hybrid. With the length of the season and growing conditions in Florida, I felt would be possible to consider two crops or cuts. Due to some of the limitations in doing two cuts or crops, I believe a reasonable estimate for Florida would be 40-70 wet tons/acre per year total for sweet sorghum. While I have heard of estimates/yields of up to 100 wet tons/acre per year in Florida as you suggest, this number strikes me as rather high and might not be a "typical" yield you may expect in a production system.

The ability to harvest on narrower rows is indeed a good capability to have and it is reasonable to assume that testing sweet sorghums at different plant populations and row spacing will allow you to optimize the planting density for a given hybrid and realize higher average yields. The challenge with increased plant populations is that you can reduce stem thickness and possibly reduce sugar yield per stalk/plant. The only way to know what this yield improvement will be for a given hybrid would be through testing, so I can't really say whether a 30% improvement estimate is high or low.

Please let me know if you have other questions, and good luck with your meetings next week!

Best regards,

Walter

-----Original Message-----
From: Russell Spitz [mailto:rs@visionpowersystems.com]
Sent: Thursday, September 24, 2009 10:29 AM
To: Rooney, Bill; Walter Nelson
Subject: Re:

As discussed, Vision is meeting with its equity partner, TPG, on Monday the 28th at 2:00 pm pst.

I will inquire of TPG at the start of the meeting if they wish to talk to Bill concerning yields.

Understanding that with Mother Nature and agricultural crops such as sweet sorghum, there are variations in location, time of year, temperatures, etc. it does appear for our central to southern Florida locations to use 25-35 T/A/P winter/spring and 40-60 T/A/P summer/fall for sweet sorghum yields to date.

The most interesting aspect here and one I wish both of you would thoroughly contemplate is that the yields everyone refers to, including the most recent hybrid test yields by Dr. Rooney are based on 30" or larger row spacing because that was the spacing required by the existing harvesting equipment or for convenience.

The row spacing and resulting yields were not based on location, sunlight, temperature and water availability, it was to accommodate the existing harvesting equipment.

As with all aspects of Vision's business model and starting with a clean canvas, Vision was driven to be the low cost producer and in the case of sweet sorghum yields, how does Vision maximize yields to take advantage of Florida's sunlight, temperatures and water? You change the harvester!

This is the same business logic Vision used in demanding contiguous acreage with the plants located in the center. Why haul feedstock over the road and store off site at a cost of ± $.21/G if you don't have to?

It appears all agree 18" rows are just fine, in fact 15" or possibly even tighter might be doable in the summer months, to be borne out by Vision's twenty acre test plantings.

Using 18" rows in lieu of 30" rows, all else being equal, will increase plantings by 63% simply because Vision changed the harvester.

With Vision's plant locations, at all times of the year, there is sufficient sun availability; therefore, based on year round temperatures, irrigation, GPS and known fertilizer requirements, yields should follow plant density increases as achieved with the 18" row spacing.

Even a 30% yield increase as a result of a 63% plant density increase has stunning results.

As energy crops have just come into demand, sweet sorghum is in its infancy as to growth in yields via breeding and genetics. With this infancy, gains in yields in the order of magnitude of an average of 5% per year should be accomplished for the next 5-10 years via breeding and genetic engineering. This growth curve, I understand, has been well established in other major crops.

	Winter/Spring T/A	Summer/Fall T/A
30" row yields	25-35	40-60
18" row x .5 = 30% increase	33-46	52-78

Breeding & Genetics 15% increase	38-53	60-90

May I talk to both of you individually Monday morning prior to my meeting with TPG?

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