Tri-State Seed

Connell 509-234-2500
Fax 509-234-2502
www.tristateseed.com

P.O. Box 1229 • 1000 N. Columbia Ave. • Connell, WA 99326

Tri State Seed Co. Harvest Newsletter July 2016

Editorial Comment

This year has presented some interesting challenges and an equal number of opportunities. Once again I was puzzled when my brother opened up the first wheat field and we found out the yield was about 50% above normal. I fully expected the protein on the white wheat to be down substantially just because of the yield being up; boy was I wrong!! The protein was 11.5%. Earlier in the week I had heard from a client in Ione Oregon who mentioned the same thing. After calling Tri Cites Grain, Damon Filan mentioned that he also had been receiving higher protein coming off of the dryland fields thus far. So I am trying to rationalize the higher protein in my mind, because of the discount involved. Typically the higher the yield, the lower the protein percentage because wheat always uses fertilizer and water for bushels first then if there is surplus fertilizer fixes protein. The only thing that makes sense is our crop was thick, over tillered because the seed was considerably smaller in size at planting time resulting in too high a plant population. Also, spring broke really early and that helped the tillering of the plants. The culmination of these events caused the crop to run out of water, stressing the plant. When a plant is stressed it increases hydrostatic pressure sucking water out of the ground and in the process fixes more nitrogen in the plant causing the plant to exhibit higher levels of protein in the grain. Confused? So was I, but after thinking through how a plant responds to moisture stress it began to make sense. I am just glad we had enough water to fill the heads.

Variety Selection in 2016

What do I seed this fall? Ryan Higginbotham just published the Connell dryland winter wheat trial results for both red and white wheat. What is very evident is the amount of rainfall we received and the timing of that moisture was very critical to the success of certain varieties. Varieties that performed best were those adapted to higher rainfall areas. It is obvious that the environmental conditions we had this crop year biased the results in favor of those varieties with higher yield potential. We are serious when we caution you against heading in this direction until you are convinced our weather might repeat itself. Many of the yield leaders this year are varieties with limited winter hardiness, rust resistance and stress tolerance. Make sure you look at multiple years data before jumping to conclusions. If you decide that you still want to try one of the new generation "winners" let us know and we will do our best to accommodate you. You can access the latest data by going to the websites listed here --- http://smallgrains.wsu.edu or http://variety.wsu.edu.

Jointed Goat Grass

We are seeing a really large shift in this weed population. Frank Young at USDA ARS at the WSU campus documented Glyphosate resistance in JGG several years ago. More and more fields are exhibiting jointed goat grass in places where we haven't seen it before. The reason I say this is we (TSS) are having more seed fields disqualified because of this grassy weed. We are currently debating what to do. The production cost of producing dryland wheat varieties under irrigation is prohibitive. Under a pivot, the dryland varieties all want to yield 100 bushels per acre and the rental rates on irrigated land are $900 to $1200 per acre. You can do the math. That adds up about like Hillary and the second amendment.

Fortunately we have the tools to deal with Jointed Goat Grass. If you think I am biased toward Clearfield technology, I am. Beyond herbicide and the newer two gene wheats are a potent solution for this problem. Even at 3 ounces per acre with Methylated Seed Oil (MSO) and the recommended liquid fertilizer, Beyond is devastating on JGG. This little recipe is right at $11.00/acre. There is no reason to have endemic cheat grass or JGG with this technology. The plant back restrictions on Beyond are still 36 months but the flexibility this technology offers is hard to ignore. Even if you just apply Beyond to the problem areas in the field, and then spray your conventional herbicide on the balance of the field, you are solving a big problem and keeping your costs under control. And in a year where we have more normal precipitation the 36 months plant back won't be an issue. Just to be safe plan on planting a Clearfield variety the following year. Hopefully the Beyond will be off patent and a generic substitute will show up on the scene soon. Now that would be a game changer!

Seed Quality and Seed Count

Once again some of our seed is uniformly small this year, for reasons I mentioned above. We are running pre-season germinations on all of our lots this year for any sign of stress related degradation. We don't expect any damage at all. We have been through this before. In fact, there are several studies showing the vigor of a seed lot with a seed count of 14,000 seeds/pound is the same as a seed lot with a seed lot of 10,000 seeds/pound. Coleoptile length is unrelated to seed size. It is a function of genetics. The take away message here is to make sure to evaluate seed size when you make your seeding decision. Many of **you failed** to do this last year, resulting in too high of a plant population. Seeding 40#'s per acre of a variety with a 14,000 seed count is **NOT** the same as seeding 40's of a lot with only 10,000 seeds per pound. So the solution is easy, count the seeds in one pound! How can you do that is less than a week? Here is how – there are 454 grams in a pound, so 1/10th of a pound is 45.4 grams. Weigh out 45.4 grams of seed and count it, then multiply the total by 10. That will give you how many seeds per pound you have in the specific lot you are seeding. Refer to the handy dandy chart below to determine how many seeds per square foot you need. For example, 40 lbs. per acre of wheat using 16" drills is the equivalent of 10 seeds/square foot. So don't set your drills for 40 lbs. of seed, set you drills to plant 10 seeds per square foot. No matter what the size of the seed, your rate will always be correct. This is very important this year. If you leave your drills set up to seed 40 lbs./ac using seed from last year that was 10,000 seed count, you may be planting up to 40% too much if your seed count this year is 14,000. Too many plants per square foot will be very problematic in a year with limited moisture. **I actually wrote this section last year …… boy did it come true!**

WASHINGTON STATE CROP IMPROVEMENT ASSOCIATION

(509) 248-3240 • Fax (509) 452-0616 • 114 North 5th Avenue • Yakima, Washington 98902-2642

BARLEY and WHEAT PLANTING RATES

SEED SPACING IN ROW

Row Width	1/2" Apart (24 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	5/8" Apart (19 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	3/4" Apart (16 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	7/8" Apart (14 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	1" Apart (12 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat
6"	48	154	184	38	123	148	32	102	123	27	88	105	24	77	92
7"	41	132	158	33	105	126	27	88	105	24	75	90	21	66	79
8"	36	115	138	29	92	111	24	77	92	21	66	79	18	58	69
10"	29	92	111	23	74	89	19	61	74	16	53	63	14	46	55
12"	24	77	92	19	61	74	16	51	61	14	44	53	12	38	46
14"	21	66	79	16	53	63	14	44	53	12	38	45	10	33	40
16"	18	58	69	14	46	55	12	38	46	10	33	40	9	29	35
18"	16	51	61	13	41	49	11	34	41	9	29	35	8	26	31

Row Width	1-1/8" Apart (11 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	1-1/4" Apart (10 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	1-3/8" Apart (9 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	1-1/2" Apart (8 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat	1-5/8" Apart (7 Seeds/Ft.) Seeds/Sq.Ft. for Barley and Wheat	Lbs./A for Barley	Lbs./A for Wheat
6"	21	68	82	19	61	74	17	56	67	16	51	61	15	47	57
7"	18	59	70	16	53	63	15	48	57	14	44	53	13	41	49
8"	16	51	61	14	46	55	13	42	50	12	38	46	11	35	43
10"	13	41	49	12	37	44	10	34	40	10	31	37	9	28	34
12"	11	34	41	10	31	37	9	28	34	8	26	31	7	24	28
14"	9	29	35	8	26	32	7	24	29	7	22	26	6	20	24
16"	8	26	31	7	23	28	7	21	25	6	19	23	6	18	21
18"	7	23	27	6	20	25	6	19	22	5	17	20	5	16	19

Based upon 13,608 barley seeds/pound and 11,340 wheat seeds/pound. Allow for rate adjustment for seed of other sizes.

Economics 101 and Seed Size, Is Bigger Always Better?

Some of you are pretty sharp when it comes to mental math. If you normally plant 50#'s of seed per acre and the price was $15.00/cwt then you would be paying $7.50/acre for your seed, right? But consider your targeted plant population was based on 10,000 seeds per pound. Then if you plant the same seeds per square foot with a lot that is 14,000 seeds per pound you are actually getting the same identical plant population per square foot and spending $5.35 per acre, a savings of $2.15 per acre. $2.15 per acre buys mama a nice day at the spa!

The myth of larger seed and the length of the coleoptile is just that, a myth. Seed emergence is a function of genetics. Coleoptile length and width as well the speed of elongation are genetic. Does seed size play a role? Certainly, but only from the perspective of having a larger source of food (the endosperm) to use in the germination process. Our message here is simple, use the seed count to your advantage. What is the logical extension of this discussion? More than likely we end up talking about variable rate seeding. When we get the equipment to allow us all to use variable rate seeding on every acre we will lower our costs and increase our profitability. What's next? Think about more than one variety in the same field for optimizing genetic traits to address in field problems like foot rot, variability of moisture, frost etc.

MAP-- Monoammonium Phosphate ($NH^4H^2PO^4$)

This seemed like a good segway to MAP. We introduced this service several years ago and our system of blending dry MAP with the seed into the truck is really catching on. Those growers that consistently use MAP are commenting on its effectiveness. Benefits include increased root development and therefore better winter hardiness and nutrient availability due to the expanded root mass. Also, because P^2O^5 is relatively immobile in the soil, placement with the seed is a good idea. It takes substantially less MAP concentrated in the seed row to get the same nutrients into the plant than a broadcast application which needs incorporation. MAP is water soluble and dissolves rapidly in adequately moist soil. Upon dissolution, the two basic components of the fertilizer separate again to release ammonium (NH^4) and phosphate (H^2PO^4), both of which plants rely on for healthy sustained growth. The pH of the solution is moderately acidic, making MAP an especially desirable fertilizer in neutral and high pH soils. Studies have shown that placing MAP in close proximity to the seedling causes no risk of phytotoxic damage from the NH3 component. Hey – every bushel of wheat you produce removes ½ lb. of Phos per acre, (actually .48#'s) from the soil --- it has to be replaced sooner or later right? 20 pounds per acre of MAP costs about $7.00 per acre. That gives you 2.2 #'s of N and 10.4 #'s of P^2O^5 right is the sweet spot. Give it a free ride and put it with your seed when you pick it up!

Managing Risk

One of the issues we will soon be forced to address is how we differentiate various types of seed technology currently in use, both in the seed plant and more importantly on your farm. You can begin to see the dilemma. Right now we are thinking just to separate the Clearfield wheats from the non-Clearfield types. Eventually each company with unique technology will require some identification protocol to separate their varieties from others for liability reasons. From our perspective it is definitely a liability issue. In fact our Clearfield license agreement mandates we separate the Clearfield types by color. Hopefully this will also assist you in remembering where you put the Clearfield seed? I know if you spray some non-Clearfield wheat with Beyond you will know where it is right away. So if you see some strange colored seed coming home to the farm … you will understand there is a method behind our madness.

Growth Regulators

Last month I mentioned we had a poor experience with one product, Release LC from Valent. After talking to the research community at WSU, the issue of adding naturally occurring growth hormones at elevated rates specifically gibberellic acid is very problematic, in our opinion. What has evidently not been evaluated or documented by the manufacturer is what effect the growth hormones have on different semi-dwarfing genes, and combinations of those genes. Also there is an issue with soil temperature and the plants response to this chemistry under very warm days and cooler nights. Valent will not support their products' performance when failures occur, so we are done with Valent. Consequently we are having a change of attitude regarding what we recommend. We have used a competitive product in the past with very good results. It is manufactured locally and contains the same growth regulator but at a much lower rate. It is also buffered by a very good balance of micro nutrients and ortho-phosphorus. We will be using **Seed Vigor** as a root developer this year. Seed Vigor costs $0.015 pennies per pound of seed, for a 40 pound seeding rate that is $.60/acre. If it helps your wheat come up one day faster, and you avoid a crusting rain, well you can do the math!! My brother and I use Seed Vigor on every bushel we plant, regardless of spring or fall seeding. In fact we use a 2 X rate. The corn growers in the basin do this all the time. They use a planter band with all the micros and nutrients they can shove at the seed because it makes a big difference at harvest. The difference between them and a dryland guy is we don't have the option of using a planter band in many cases because of our equipment limitations. The take home message here is if you going to spend $120 per acre getting the crop to harvest, why wouldn't you spend $0.60/acre giving the plant the best start possible?

Varieties That Bank Well

We wanted you to know what we thought were the best choices this fall in your respective areas.

- Puma SWW looks phenomenal everywhere, no disease, great emergence and yields with the best.
- Jasper SWW is performing well north of highway 26, a sure thing for replacing Xerpha.
- Bruehl still is our preferred club, the rust resistance is solid.
- Otto SWW is very good in Connell and similar environments; it has the pch-1 foot root gene.
- Curiosity and Mela are both two gene Clearfield varieties that solve a lot of grassy weed issues.

Tri-State Seed
P.O. Box 1229 • 1000 N. Columbia Ave.
Connell, WA 99326

RETURN SERVICE REQUESTED

- Clearstone is a very strong and versatile HRW, quite early and a 2-gene Clearfield wheat with great protein. It matures early so plant it after September 15th.
- Farnum is our preferred HRW conventional wheat for <12" rainfall, has great emergence.
- Syngenta's 66-7 is looking very good as is their SY Touchstone variety. The reason they look good is that John Moffat is a great breeder and he is crossing to WSU germplasm. **66-7 has either topped the trial or been second the last three years across all dryland sites giving up first only to Xerpha.** 66-7 has better stripe rust protection than Xerpha. This is a game changer!\
- Whetstone is still a bonafide winner in anything above 12" precip. Touchstone should replace it.
- Legion from Syngenta did very well this year; I like it because it has great straw strength.
- WA8227 is a Xerpha X Masami cross that bears watching also.
- LCS Jet is a real improvement in HRW in higher rainfall areas. Early and good protein.

Whatever you decide to do please give us a call and talk about your individual situations, because there is no such thing as a one size fits all variety anymore. Our job is very simple; make each of you as much money as possible for the least amount of inputs possible. Obviously we must be doing something of value because you keep us growing every year. Thanks for your years of patronage and confidence in our business. Be safe!

Dana L. Herron Craig Teel Margaret Krug Nathan Robbert Mike Dixon George Ortiz Andres Garcia
Reach us all at 509-234-2500.