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***WHEAT CROP***

The 1999 - 2000 wheat crop in the Texas Panhandle has been plagued with a number of problems. The number one problem has to be the lack of fall and early winter moisture. The December snow received helped but certainly did not alleviated the problem. Greenbug infestations have been severe enough to completely destroy many fields. The mild winter has caused greenbug populations to increase at a much higher rate than normal. Insecticide application has only been moderately successful. The current recommendation from our entomologist, Dr. Carl Patrick, is an application of Lorsban plus Malathion if insecticide application is warranted. We are anticipating a potential problem with wheat streak mosaic and possibly barley yellow dwarf this spring. Wheat streak mosaic is transmitted by the wheat curl mite. Almost all of the wheat samples we received in the office this fall were infested with wheat curl mite. Wheat streak mosiac symptoms typically are worse in the southwest portion of field where wheat curl mites have been carried into the field by the prevailing winds. The wheat streak mosaic infected plant will have yellow mixed with green streaks in the leaves. Also look for the curl mite with a magnifying glass around the base of the leaf. Barley yellow dwarf is transmitted by aphids (greenbugs, Russian wheat aphid, bird cherry oat aphid). The general greenbug infestation throughout the area for most of the fall may very well have infected many fields with barley yellow dwarf. The disease will normally show up in random patches throughout a field where aphids were once present. These spots in field will begin to show up after wheat jointing. Wheat will be stunted, with the leaves having a general yellow color in appearance, particularly along the leaf margins and at the leaf tip. Some reddening or purpling of the leaves is also associated with barley yellow dwarf. Unfortunately there are no control measures that can be taken once wheat is infected with one of these viruses. However, being aware of the severity of infection may help in deciding how much money should be continued to be put into a crop. Some varieties have more tolerance than others to these viruses (Table 1). Most of the varieties not listed in the table are moderately susceptible to the viruses.

**Table 1. Wheat variety virus tolerance**

| Wheat Steak Mosiac | | Barley Yellow Dwarf | |
|---|---|---|---|
| Most Susceptible | Moderately Resistant | Most Susceptible | Intermediate Resistant |
| Karl 92 | 2137 | Karl 92 | 2137 |
| Custer | Coronado | Tam 107 | 2163 |
| Tomahawk | Jagger | Tomahawk | Custer |
| Tam 200 | Tam 107 | | Jagger |
| Hickok | Tam 110 | | |

**Source: Kansas State University**

## *LATE PLANTING AND MAKING RE-PLANTING DECISIONS*

| Inches in a drill row to equal one square foot at different drill row spacings. | | | |
|---|---|---|---|
| Drill Row Spacing (inches) | | | |
| 6 | 8 | 10 | 12 |
| ----------inches of row---------- | | | |
| 24 | 18 | 14.4 | 12 |

In some situations producers may be considering replanting or overseeding existing stands of wheat due to insect damage or failure of the original stand. Before this is done a careful estimate of the current wheat plant population must be made. This can be done by counting the number of plants per square foot in several locations in a field. Wheat seed averages approximately 17,000 per pound. Under typical field conditions, an emergence of 70% of the wheat seed is expected. If the original seeding rate in a dryland field was 45 lbs/acre then the expected number of plants per square foot would be 12.3. The formula for calculating wheat stand is: lbs planted/acre x seed/lb x % germinated ÷ square ft./acre. Example: 45 lbs seed planted x 17,000 seed/lb x 0.7 % germ. ÷ 43,560 $ft^2$ = 12.3 plants per square foot. In most cases the stand would have to be less than 8 plants per square foot in dryland wheat before replanting should be considered. If we have favorable spring weather, wheat has the ability to compensate for a thin stand by tiller production. Wheat cannot, however, compensate for a skippy, uneven stand. Under unfavorable weather conditions such as unusually cold and dry weather in the late winter and early spring , few tillers are formed, and yield penalty can be fairly severe for thin stands. If stands are skippy, uneven or inadequate, consider overseeding, replanting or selecting an alternative crop.

For those of you considering planting irrigated wheat in January expect at least a 35% decrease in yield potential compared to an October planting date. Under adverse weather conditions, this may be a very conservative estimate. In an irrigated study conducted last year at the experiment station at Bushland, yield of TAM 107 planted on October 10 was 85 bu/acre. When planted on January 16 yield was reduced to 55 bu/acre. In this particulary study increasing seeding rate when planted in January did not increase yield. This may have been because of the mild wet spring in 1999 that encouraged tillering and seed set. If you are planning on seeding wheat in January, I would recommend increasing your seeding rate 50%. As planting date gets closer to February 1 consider planting a wheat variety with a short vernalization requirement. A few varieties with short vernalization requirements are TAM 200, TAM 201, TAM 202, Jagger, and possibly Karl 92. Do not consider planting dryland wheat in January. Only an exceptionally wet spring would make dryland wheat worthwhile. Dryland wheat planted in January will not have enough time to develop a good root system and will be largely dependent on spring rain.

## *WHEAT TOPDRESSING*

For those of you who reach the middle of February with good wheat yield potential consider topdressing your field with nitrogen. Many fields late last year appeared to be suffering from nitrogen deficiency. The excellent wheat yields that have been achieved the last couple of years has depleted the soil of nitrogen. Topdressing should even be considered on dryland wheat fields that have good yield potential. Timing of topdress N applications is fairly critical, as a wheat crop which is under N deficiency conditions at jointing will have fewer seed per head than wheat which is topdressed before jointing. Topdressing after jointing can influence seed size and grain protein, but has little effect on head size. Excessively early topdress applications followed by period of warm weather can make wheat more vulnerable to winterkill.