We do not know the effect of the mild winter on diseases we may battle this growing season, nor can we control the weather this summer, but we can think ahead to help minimize certain risks.

Disease management starts with picking the right variety for the field. If you plant the correct variety in each field, based on known field problems, then manage them effectively, the entire farm will reach its maximum productivity at minimum risk. Of course, this means planting more than one or two varieties on many farms.

Hybrids have the best disease resistance of current rice varieties, so fields with a history of disease problems would be good candidates for hybrid rice. On the other hand, fertile, wide-open fields planted early, with excellent water and timely management during the season might benefit when planted with a Clearfield or conventional pure-line variety like CL151, CL111, CL152, CL142AR, Taggart or Roy J, among others. For later planting, where blast and smut diseases may be favored, then hybrids would again be the best choice with respect to disease management. In addition, planting high-quality seeds treated with an appropriate fungicide and insecticide minimize seed rotting, encourage emergence, and produce vigorous seedlings that can withstand early season weather misfortunes.

Soil fertility plays a major role in disease severity. If too much nitrogen is applied pre-flood, that field could develop more severe disease. Too much early nitrogen strongly encourages sheath blight, blast, kernel smut and false smut among other diseases. For fields with a history of heavy disease, it is likely that too much nitrogen is in play, so working with the county agent or consultant to determine how much to “cut back” is advised. In this regard, the new nitrogen soil test for rice (N-ST*R), could help to determine the available nitrogen in the soil and provide a more exact recommendation for N. Please contact your county agent for
Information on N-ST*R.
In addition, higher levels of soil potassium reduce the severity of many diseases including stem rot, brown spot and likely sheath blight and bacterial panicle blight, among others. In general, rice that is managed with regard to balanced fertility tolerates disease and other stress better.

Planting early provides adequate time for rice plants to develop maximum yield potential and better escape many late season diseases including blast, narrow brown leaf spot and the smuts. In addition, effective water management minimizes plant stress, and thus stress-related diseases like blast and probably bacterial panicle blight. Before planting is the time to decide how much land can be effectively irrigated without stress to rice or nearby rotation crops. A common mistake is to plant too much rice in fields with inadequate water capacity during the hot dry summer months, when all crops need irrigation.

Timing and rate of fungicide application are key elements for effective disease management. Preventative applications for the smuts need to be made between 2-inch panicle elongation and before fully swollen boot to give the fungicide time to get into the plant tissue. Based on recent observations, the 6 fluid ounces per acre rate of propiconazole, formulated as Tilt fungicide or equivalent, seems to be required. Lower rates no longer appear to be working under our conditions. Research has shown that many fields do not benefit from preventative fungicide applications, and spraying every field without scouting year in and year out will result in the development of resistant strains of the sheath blight fungus and the blast fungus, among others. Therefore, scouting effectively and using our fungicides wisely can preserve them, and new fungicides for rice will be rare in the near future.

Fungicides are most effective on well-managed rice, and may fail where too much nitrogen, too little potassium or poor irrigation management make the rice crop simply too susceptible to control disease. As in football, there is no substitute for being good at the fundamentals and for thinking ahead, and this is true for profitable rice disease management.

Please contact your University of Missouri Agronomy extension specialist for additional information.

Sam Atwell, Agronomy Specialist, University of Missouri Extension, New Madrid, MO.

http://extension.missouri.edu/butler/MoAgNews.aspx
Wheat Management - Stem Elongation Phase

Wheat is ending its tillering phase to enter stem elongation. The beginning mark of stem elongation is called jointing, described as Feekes-6. Jointing is when the first node of the stem is visible above ground. Jointing also is the cutoff for many wheat herbicides, so always be sure to read and follow herbicide label directions and visually inspect your field before making an application. This stage is when the growing point is above ground so grazing animals should be taken before this point, also. With the growing point exposed above ground, wheat becomes more sensitive to freezing temperatures. Jointing wheat will incur damage if temperatures fall to 24 degrees Fahrenheit or lower. Stem elongation also indicates the increased demand for nitrogen fertilizer. It is critical to have adequate nitrogen in an available form for wheat during this phase of growth. It is critical to monitor wheat for nitrogen stress, especially if nitrogen was applied early in the year and/or soils are prone to leaching or denitrification. Wheat may respond to nitrogen applied up to the second node, described as Feekes-7. If possible, avoid nitrogen applications after these stages because typically by the time nitrogen is available to the plant it is a cosmetic response and there is risk of burning the upper leaves, in particular the flag leaf, described as Feekes-8 to 9.

Monitor plants closely following Feekes-8 for disease and insect pests. The end of stem elongation after flag leaf (Feekes-9) will be the boot stage, described as Feekes-10. Flag leaf health is critical, since it is the primary leaf for photosynthate production during the third phase, heading. Pay close attention to environmental conditions and any potential disease development, a fungicide application may be warranted during this timing. Also, monitor fields for insects, in particular true armyworm since this pest can rapidly defoliate flag leaves and clip heads.

For more information on wheat management during stem elongation contact your local MU Extension office and ask for IPM 1022 “Management of Soft Winter Wheat” or find it on the web at http://extension.missouri.edu/.

Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Charleston, MO.
Watch for Black Cutworms this Spring

The Black Cutworm, goes by several names including floodplain cutworm, greasy cutworm and overflow worm. In Southeast Missouri we know the cutworm for its damage in corn fields in early spring. However it can also cause damage to cotton, soybean, turf grasses, wheat and even vegetables such as tomatoes and lettuce. Each year we see some damage from black cutworm in corn fields with some fields reaching economic threshold. What should you look for; are there management options that will reduce the likelihood of your fields reaching threshold?

While the black cutworm can over winter in Southeast Missouri, most over winter on the Gulf Coast or in Mexico and migrate north in the spring. Researchers from Missouri and Iowa State released tagged moths in Louisiana and recaptured these same moths 3-4 days later in the Corn Belt. Each moth can lay more than 1000 eggs with the eggs generally laid in low, wet areas of fields with thick vegetation. Damage occurs when larvae feed on seedling plants often times completely cutting off the plant and reducing plant populations below optimum levels. Cool conditions can increase damage potential as it slows plant growth. As the plants move beyond the seedling stage damage is minimized.

There are several management strategies to help prevent damage to corn or other seedlings. Tillage or an early herbicide burndown at 14 days prior to planting reduces the attractiveness of the field to flying moths. Research has shown that most economic damage occurs from larvae already present in the field at the time of planting. Commercially available seed treatments are the first line of defense. It is critical to scout your field early and often, especially if emergence or overall growth is slowed due to weather, for any potential pest outbreaks. Postemergence rescue treatments are warranted when 1-2% or more corn plants are cut below ground or 2 -3% or more plants have been cut above ground and larvae are present. Larvae are gray to black, 1 to 2 inches long when full grown and form a C when disturbed. In cotton, treatment is needed when stand counts fall below 3 plants/foot of row and larvae are present. In soybeans thresholds are when 20% of stand is cut, gaps are greater than 12 inches and larvae are still present.

For more information on black cutworm, contact your local MU Extension office and ask for guide G7112 “Black Cutworm in Missouri” or find it on the web at http://extension.missouri.edu/.

Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Charleston, MO.
Managing Beef Cattle Finances Workshop

This is a good time to be in the cattle business. Cattle numbers are the lowest they have been since the 1950s and prices are at record highs. Two questions to ask yourself: “Are you managing your input costs to maximize those profits?” and “Are you using profits to make your operation run for the long term?” It is easy to take that big calf check and use it to make a big ticket item purchase but that is not making your operation sustainable. There will not always be good times in the cattle industry and you need to plan for those.

The Wayne County Extension Council is sponsoring a program titled Managing Finances of the Beef Cattle Business to be held on Tuesday, April 24. Kendra Graham, Livestock Specialist, will provide an overview of beef cattle budgets, explain management tools that can be used to increase profits, and talk about marketing options. The program will be held at the Greenville High School library in Greenville. The cost is $10 per person. Please RSVP by April 20, to the Wayne County Extension Center by phone: 573-224-5600 ext. 8 or e-mail: wayneco@missouri.edu.

Kendra Graham, Livestock Specialist, University of Missouri Extension, Greenville, MO.
Maybe you have heard some of the discussions about algae and biofuels. We all have heard about the enormous potential of this plant. For example, US Department Energy states that algae “can potentially produce 100 times more oil per acre than soybeans—or any other terrestrial oil-producing crop.” There is about 1.5 gallons of oil per bushel of soybeans; therefore a 40 bushel per acre soybean crop would yield about 60 gallons of oil per acre. One hundred times that is 6000 gallons – not too shabby. Just think, 6000 gallons at $3.50 per gallon - $19,500 per acre of gross income.

Before we go and start growing algae in our rice fields – we need to ask a simple question - How is this done? A few weeks ago, I was in Corpus Christi, Texas at an Extension energy meeting. After the official meeting ended, the remnants of our group toured the Texas A&M aquaculture research facility. At this facility they were working with different algae species to try to determine the potential for commercial production.

There were some items of interest I gleaned from this visit. The Texas A&M algae research utilized salt water and concentrated on salt water species. It was found that there were several algae species that produced oil; however, the problem was that these species varied considerably in the best environment for oil production. So, the researchers were looking at a group of species that could grow together, and when the environmental conditions changed, an algae specie would dominate the other – and the hoped for result would be a viable quantity of oil.

The intent was to eventually grow these algae species in open ponds. However, there were several problems in growing them in this environment, among these was contamination. Being close to the ocean, undesirable algae spores could be blown into the open ponds, thus destroying the purity of the crop – just like weeds in a row crop field. Open algae systems, are more economical to manage than closed systems, but are open to contamination.

The take-away from this short visit was that producing algae for fuel is a complex endeavor. There are several startup companies doing proprietary research on algae systems. There are also numerous public laboratories, including our own Donald Danforth Plant Science Center in St. Louis, in which researchers are developing an understanding of algae genetics. Whether this research will ever make it to Southeast Missouri for an on farm application is anyone’s guess. But, from what I have seen, there is considerable more work needed before fuel algae production will be viable.

Van Ayers, Agriculture and Rural Development Specialist, University of Missouri Extension, Bloomfield, MO.
Stripe Rust Damages Southeast MO Wheat

Stripe rust can be a yield-robbing disease of susceptible wheat when the weather is suitable for infection. It was detected in a few southeast Missouri wheat fields in early March and was detected in several southeast Missouri fields by mid March. As of mid March, it has not been reported north of a line from New Madrid to Poplar Bluff. This disease presumably spread to Missouri from infected east Arkansas wheat fields during late February and early March. Spread of this disease to other Missouri wheat fields can’t be predicted. However, weather predicted for the last few weeks of March will be suitable for this disease to spread.

All wheat fields should be scouted for this disease. If present, the only method to protect the wheat against this disease now is application of fungicide. The conditions that justify an application of fungicide to wheat for protection against this disease have not been developed for Missouri because this disease rarely develops here.

Farmers that expect high wheat yields, greater than 60 to 70 bu/acre, should consider application of a fungicide if stripe rust is found in a field. Do not assume all fields are infected. Any of the registered wheat fungicides will work, but propiconazole (Tilt and generics) and tebuconazole (Folicur and generics) are the least expensive and best for stopping infections that have already occurred and also for stopping new infections. Strobilurin fungicides such as Quadris and Headline are best for preventing new infections but weak for stopping existing infections. Combination products such as Quilt, Stratego, Absolute, and Twinline are good for stopping both new and existing infections. Prosaro (prothioconazole + tebuconazole) and Caramba (metconazole) are primarily used at flowering time to suppress Fusarium head blight (scab). A second fungicide application may be needed at late-boot stage of growth for other diseases, so don’t spend a lot on this early application.

J. Allen Wrather, Professor of Plant Pathology, University of Missouri Extension, Portageville, MO.

Annual Hazmat Refresher

The Missouri Department of Natural Resources in conjunction with the Poplar Bluff City Fire Department and Sikeston Department of Public Safety

April 17th at the Black River Coliseum in Poplar Bluff
April 18th at the Clinton Building in Sikeston
8:00 a.m. – 5:00 p.m.

Individuals must have completed a 40 hour Hazmat Operations training. Contact Josh Wilkerson with the Missouri Department of Natural Resources with questions and to register at (573) 840-9276, Email: josh.wilkerson@dnr.mo.gov
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**Future Meetings & Events -**

**National Small Food Manufacturing Conference** - April 2-3, 2012 in Omaha Nebraska for more information go to website: fpc.unl.edu/nsfmc

**Hazmat Refresher** - April 17-18 in Poplar Bluff and Sikeston. Contact Josh Wilkerson with MoDNR to register (573) 840-9276.