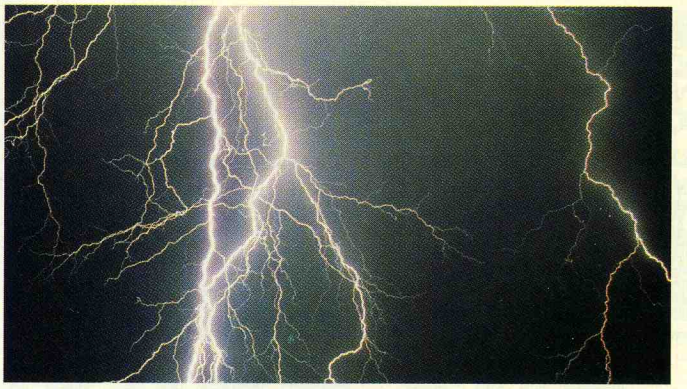


freezing or above 95 degrees (100 degrees in California), and winds that will exceed 30 mph.

The *m*Power^3 weather system is so sophisticated, so specific that crop management can be planned and changed in season because now the grower knows what is going on in each field in terms of moisture, wind, degree days, extremes of heat or cold, etc. Customized weather forecasts and alerts for a field could trigger other actions to maintain yield and quality. Warnings of an early frost or cold snap could lead to earlier termination or defoliation, for example, or accelerated harvest efforts.

Even the regional weather maps provided in all *m*Power^3 products offer ag IT at its best. As storms move across a state, growers can click on icons to get at the information contained within them: click on the hail symbol and see exactly which counties are getting hammered. *m*Power^3 regional weather lets the grower know with certainty what is happening on that new piece of rented ground several miles away.

With decades of site-specific and regional weather data in its archives, WSI also is able to detect when one season's weather patterns appear to mimic a past year. This is invaluable in telling growers what to expect in the El Nino and La Nina years. And because these predictions come to *m*Power^3 subscribers several weeks ahead of planting time, growers can use the insights to "hedge" the weather extremes.

In the New Century, ag IT will be taking growers inside their crops like never before, with opportunities to protect and shape those crops for optimized return.

What a super model can do

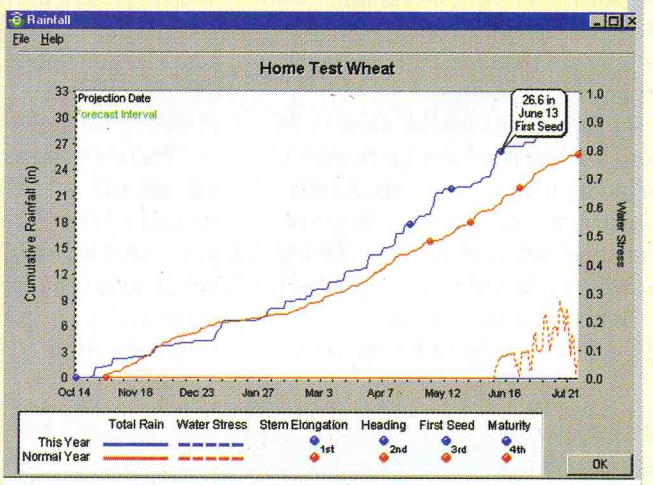
If you can monitor the weather on a specific field, you can run a crop production model. Crop production models help you know what your crop is going to do before it does it, and in time to do something about it. The wheat model is one example. Here are some examples of how it can help a grower optimize his crop, according to Darin Oelkers, *m*Power^3 Certified Specialist.

■ Herbicide timing is critical to a strong wheat stand. They must not be applied after the embryo ear starts to develop at the end of tillering. Hormone-based herbicides can cause embryo damage. Given the correct data in mPower^3, the Wheat Model will predict very closely when tillering is coming to an end and ear development is going to begin.

■ Similarly, there is much to be gained from a split application of nitrogen when it is timed to stimulate stem elongation. Putting on the nitrogen too early prior to elongation has less impact on the health and vigor of the crop.

"Growers and their advisers are used to walking the fields and looking for these stages of development," adds Oelkers, "but stem elongation starts before you can see it in the field. It's at that time — not when you see it starting — that the nitrogen will provide its maximum benefit. The plant needs 2 to 3 times as much nitrogen during stem elongation as during tillering.

■ Toward the end of the year, a grower can have a lot of fields coming to maturity and harvest at what appears to be about the same time. Yet it can be advantageous to harvest some fields first, and the *m*Power^3 Wheat Model can prioritize harvest by telling the grower which fields will reach optimum maturity on what dates. This could be very important if the grower has some fields of high protein wheat for a specific end-use, says Oelkers. Leave those stands in the field too long and quality will suffer and any premiums could vanish.



Data in a PCYield Wheat Production Model forecasts early maturity. Rainfall is above normal, as shown by the comment at top right. With plateaus in rainfall between first seed and maturity, water stress may be an issue, as signaled by the dotted red line in the lower right corner.