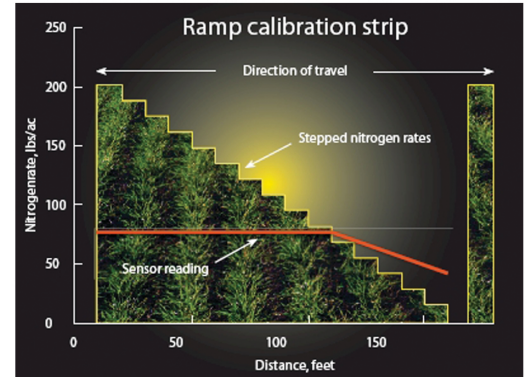


# Using Reference Strips



**What** Reference Strips: The N-Rich Strip and the Ramp Calibration Strip. The N-Rich Strip has enough N applied so that regardless of the environmental conditions it will not become N deficient during the season. The Ramp Calibration Strip has multiple rates of N are put out in a sequence from a high rate to a low rate. Reference strips can be used in any field crop.

**Why** With the cost of N at a all time high, it is extremely important to maximize the return from each unit of N used. The practice of using yield goals and soil testing are good for determining total N needs. But the problem is that there is no way of knowing how much N will be delivered by the environment during the season and there is no accurate way of knowing at the time of planting what the yield levels will actually be. The reference strips are a way for the crop to tell you how it is doing in terms of N needs. They will show whether or not enough N has been delivered by the soil and applied preplant to reach maximum yields.



**Sensor** The sensor uses red and near infrared light to view the crop. The sensor is able to see the health and vigor of the crop and give it a numerical value (NDVI). Researchers have shown NDVI's collected mid-season can be used to predict final grain yield. Knowing the potential yield at the time of top-dress gives the producer the ability to make a very accurate N rate prescription for the field which the reference strip was in. When using the Ramp Calibration Strip, the N rate can be determined by using a sensor or just by visual determination. Sensors are available for use at many of the Oklahoma Cooperative Extension Service County offices or can be purchased from RedBall distributors.

**How** N-Rich Strips can be applied by having the applicator make a double or triple pass over an area when applying preplant N. Ramp Calibration strips can be put out by using machines that manually or automatically put out the different rates, or by renozzleing the sprayer boom to achieve multiple N rates. At least one (two are preferred) reference strip should be placed in every field every year. The strips go over the top of the preplant application and should be placed in the most representative location of the field. It is best if the strips are analyzed close to hollow stem in wheat or the 8 leaf stage in corn.

