

STØTTET AF

Promilleafgiftsfonden for landbrug



VRA OF NITROGEN FOR EVERYONE IN DENMARK

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BACKGROUND AND PROJECT AIM

The use of GPS in precision farming has developed over the last 25 years. However, few Danish farmers so far have actually used equipment for VRA (variable rate application) of fertiliser for their crops.

To prevent a lack of application maps in becoming the barrier for making VRA mainstream, SEGES has made basic application maps for about 90 percent of all fields with winter wheat and winter oilseed rape in Denmark, along with giving access to the maps for everyone.

Application of model in CropManager

Fertiliser planning and the applications for single payment of about 90 percent of all fields in Denmark are made in the SEGES owned computer program, CropManager. Data is used to create VRA maps for each field (of winter wheat and oilseed rape thus far), and farmers can easily find, see, download and use the maps. The first generation of the VRA algorithm is solely based on biomass measured from satellite (Sentinel-2).

” For SEGES, the ‘easy-to-use’ approach is important. We want to make VRA available for everyone, and we are convinced that using even a simple algorithm is better than a flat rate application.

Application of modul’s output

The principles in the algorithms are the same. The N-rate is decreased in areas with high biomass and increased in areas with low biomass. If the biomass is extremely low the N-rate is decreased, too.

An example of the model’s use for the last application to winter wheat is show in figure 1. If the farmer decides to apply 40 kg N per hectare on average, the algorithm variate the N-rate and makes sure the average application is still 40 kg N.

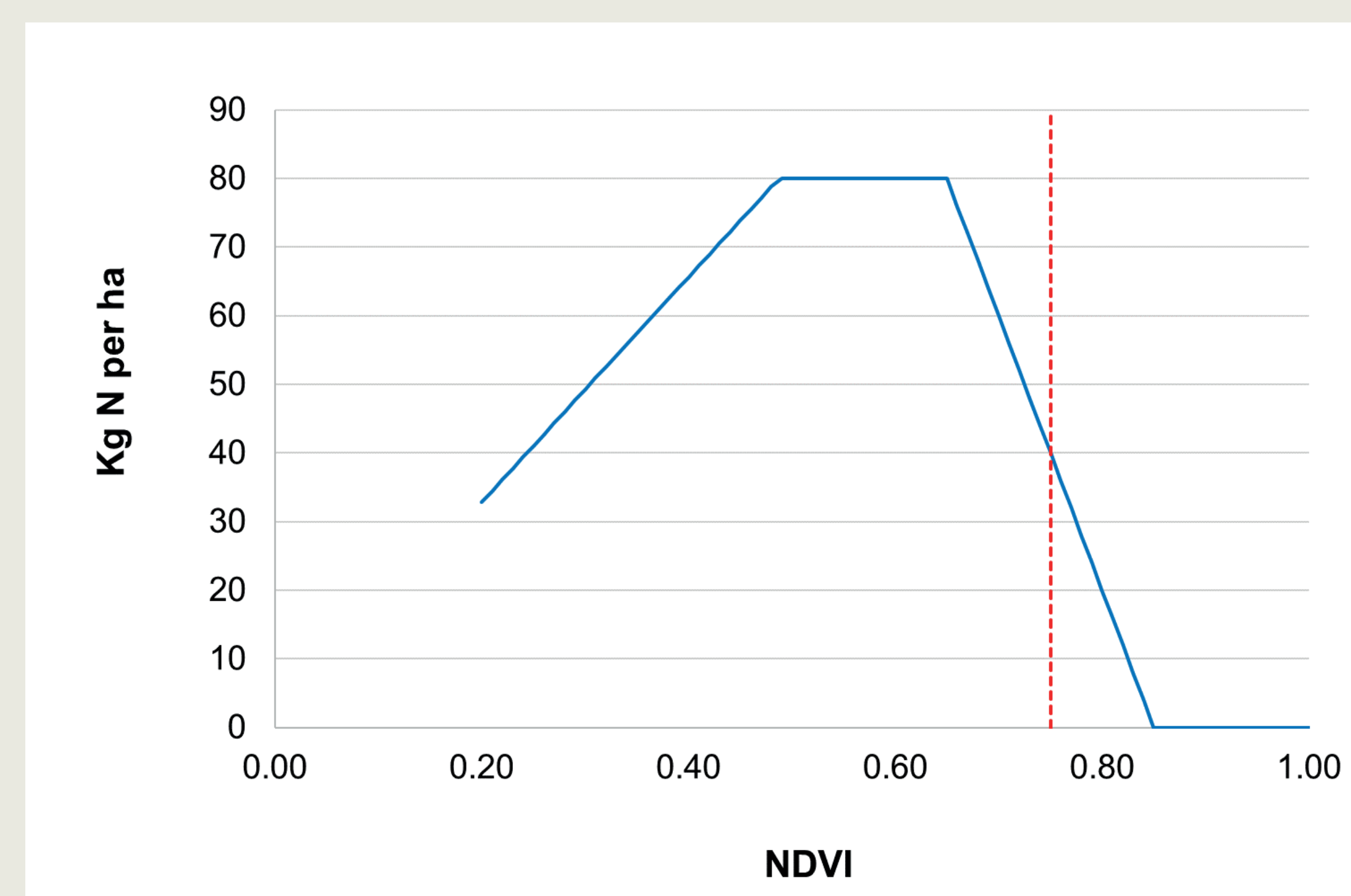


FIGURE 1. Example of nitrogen application in a field of winter wheat with an average NDVI of 0.75 in the beginning of May. If the variation in the field is low, only a little part of the scale is used (fx 40 +/- 10 kg N), but if the variation is high the whole range of the scale is used (40 +/- 40 kg N).

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