

F. New method to determine crop planting date in ALM

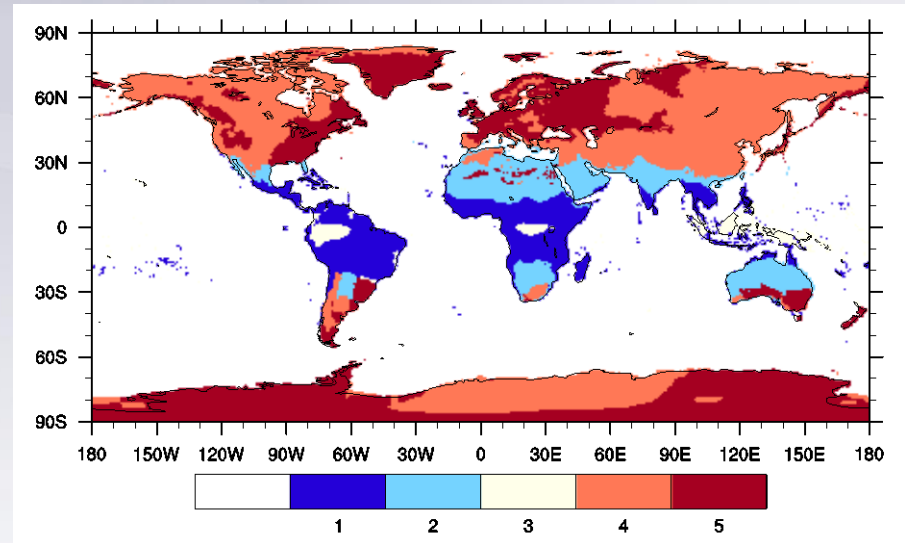
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Crop planting triggered by temperature threshold

Limits crop production to mid-latitudes and does not include other factors important for planting

Need a solution that will:

- 1) Function globally
- 2) Be flexible under climate change



Use temperature and precipitation seasonality to establish planting dates

Method (from Waha et al., 2012):

Determine seasonality of grid cell from temperature and precipitation CV (see above figure)

If temperature seasonality: temperature threshold determines plant month

If precipitation seasonality: Precipitation:PET ratio determines plant month

Advantages:

No need for external inputs, works globally, planting date can evolve with changes in local climate, and can determine potential planting date for crops currently not grown in a grid cell