This study provides a timely and comprehensive assessment of the extreme compound dry-hot event that occurred in the North China Plain (NCP) from April to June 2024. By integrating satellite-derived vegetation indices (NDVI and GPP), ERA5-Land climate reanalysis, and ground-level yield statistics, the authors identify a crucial "phenology-modulated" mechanism: while early-season warming actually benefited winter wheat growth, late-season extreme heat and high vapor pressure deficit (VPD) severely suppressed summer maize establishment.

The paper is well-structured, the logic is sound, and the use of the "carryover effect" in the regression model provides a sophisticated view of vegetation memory. Before publication, there are a few issues that need to be resolved.

1. The North China Plain is one of the most heavily irrigated regions in the world. The authors acknowledge irrigation in the "Uncertainties" section (Lines 362 – 365), but it deserves more prominence in the Discussion. If the VPD was record-high in June, did irrigation effectively mitigate the heat stress, or did the atmospheric dryness (VPD) override soil moisture management? Please discuss whether the "positive NDVI/GPP" in April/May was partly sustained by intensive groundwater irrigation, and why irrigation seemed less effective in June (e.g., heat-induced stomatal closure regardless of water supply).

2. The Multiple Linear Regression (MLR) model (Eq. 3) includes TAS (Temperature), VPD, SW (Soil Water), and PRE (Precipitation). These variables are often highly correlated during dry-hot events (e.g., high Temp often drives high VPD and low SW). Provide the Variance Inflation Factor (VIF) for the independent variables to ensure that multicollinearity does not bias the sensitivity coefficients.

3. The authors emphasize the "vegetation carryover effect" as a dominant driver in May. While the statistical meaning is clear, the physiological mechanism could be better explained. Is this "memory" primarily due to accumulated biomass, root system development, or sustained soil moisture from previous months? A few sentences in the Discussion (Section 4.1) would clarify this for readers.

4. The study notes a reduction in summer maize yield based on June observations. However, maize is harvested in September/October. Clarify if the "reduced yield" mentioned is a final harvested statistic for 2024 or an early-season projection. If June only affects the "establishment phase," could favorable rains in July/August have compensated for the early loss?

5. Figure 2 & 3: The spatial maps are excellent. However, adding a small inset map showing the "Winter Wheat-Summer Maize" cropping intensity would help international readers understand the land-use context better.

6. Line 123: Equation 1 for VPD calculation is standard, but please confirm if the "monthly TAS and TD values" were averaged from daily VPDs or calculated from monthly mean temperatures. (The authors address this briefly in L125, but a bit more detail on the temporal aggregation would

be helpful).

7. In Line 38, the term "early establishment" for maize is used. Perhaps "emergence and seedling stage" is more specific to the phenological terminology used in agronomy.

8. Line 115: "in integrates" should be "it integrates." Check for consistency in the unit "gC m^{-2} mo^{-1}" throughout the text and figures.