Figure S1. Nitrogen accumulation of two corn cultivars under different nitrogen levels (N) and planting pattern (P) in 2021 and 2022. Based on one-way ANOVA, different lower-case letters indicated a significant difference of two planting patterns and two corn cultivars under same N level. Based on two-way ANOVA considering the factors of "planting pattern" (2 levels) and "cultivar" (2 levels), **, P < 0.01; *, P < 0.05; and ns, P > 0.05 indicated differences between interplanting (I) and monocropping (M) under same N level. Based on three-way ANOVA considering the factors of "N application" (2 levels) "planting pattern" (2 levels) and "cultivar" (2 levels), ##, P < 0.01 indicated their effects.
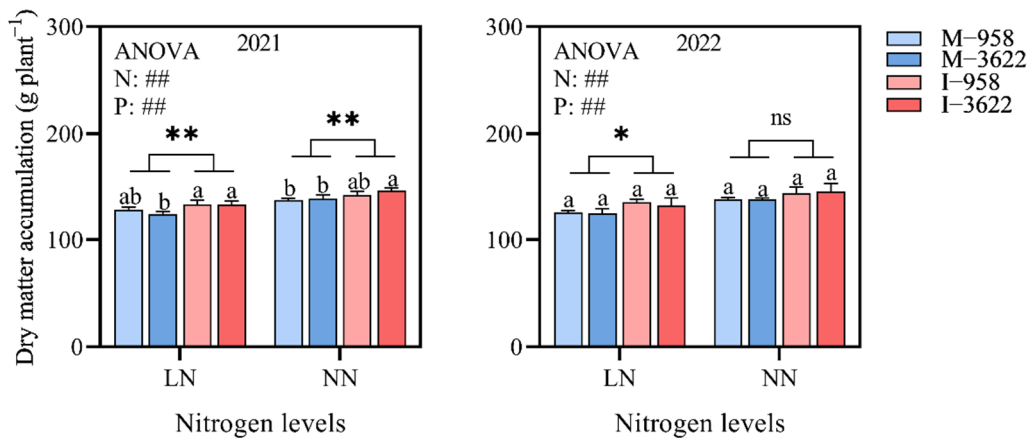

Figure S2. Dry matter accumulation of two corn cultivars under different nitrogen levels (N) and planting pattern (P) in 2021 and 2022. Based on one-way ANOVA, different lower-case letters indicated a significant difference of two planting patterns and two corn cultivars under same N level. Based on two-way ANOVA considering the factors of "planting pattern" (2 levels) and "cultivar" (2 levels), **, P < 0.01; *, P < 0.05; and ns, P > 0.05 indicated differences between interplanting (I) and monocropping (M) under same N level. Based on three-way ANOVA considering the factors of "N application" (2 levels) "planting pattern" (2 levels) and "cultivar" (2 levels), ##, P < 0.01 indicated their effects.
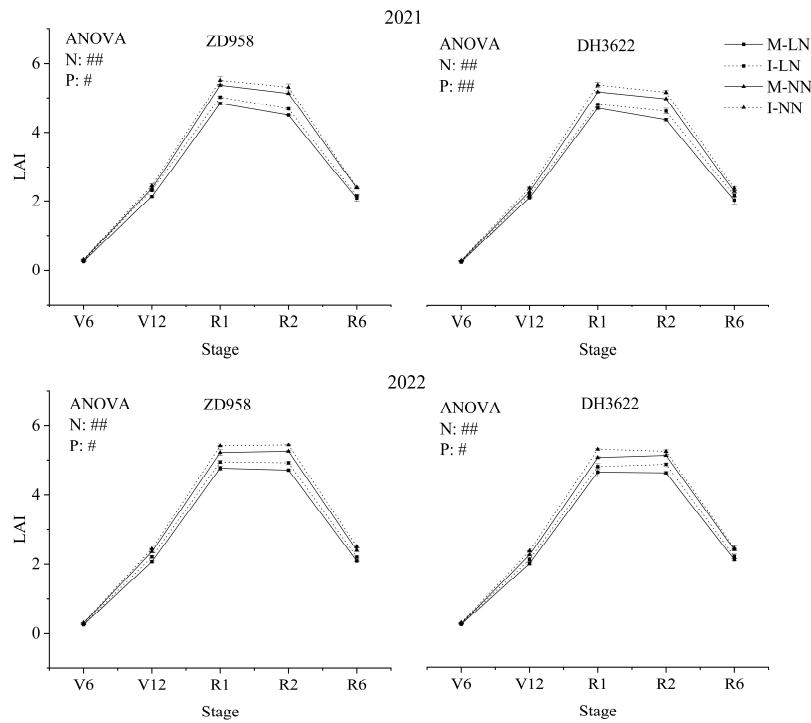
Figure S3. Leaf area index of two corn cultivars under different nitrogen levels (N) and planting pattern (P) in 2021 and 2022. Based on three-way ANOVA considering the factors of "N application" (2 levels) "planting pattern" (2 levels) and "cultivar" (2 levels), ##, P < 0.01; #, P < 0.05 indicated their effects. Interplanting (I) and monocropping (M)
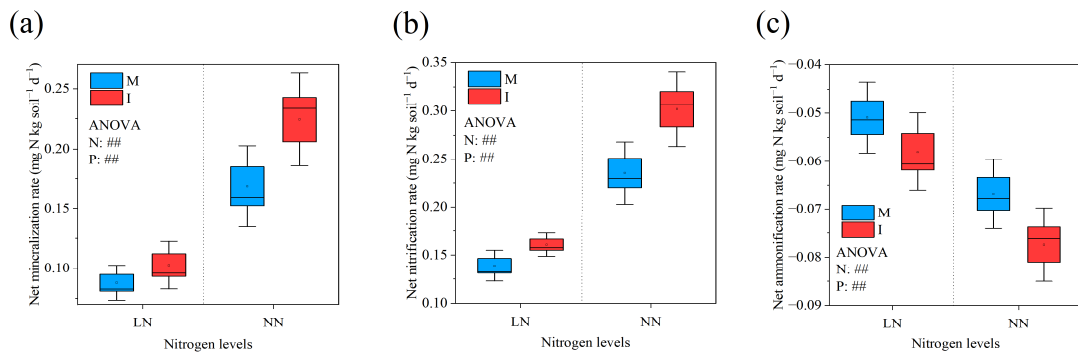

Figure S4. Net potential mineralization rate (a), net potential nitrification rate (b), net potential ammonification rate (c) and N_2O flux (d) of two corn cultivars under different nitrogen levels (N) and planting pattern (P) in 2022. Based on three-way ANOVA considering the factors of "N application" (2 levels) "planting pattern" (2 levels) and "cultivar" (2 levels), ##, P < 0.01 indicated their effects. Interplanting, (I); monocropping, (M).
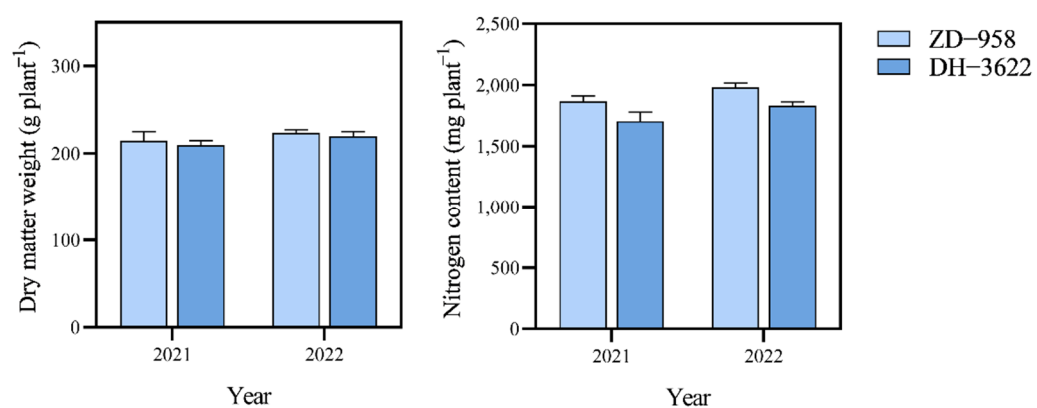
Figure S5. Dry matter weight at maturity and nitrogen content at maturity of two corn cultivars with blank treatment in 2021 and 2022.