An experiment was set up to measure nitrogen-leaching loss from application of two plant residues and farmyard manure during growing season of wheat under Samsun ecological conditions. Application rates of organic residues were 1.2 Mg rice husk (RH) along with 10 (N1) and 20 (N2) kg N per Mg straw ha\(^{-1}\), 1.5 and 3.0 Mg ha\(^{-1}\) tobacco industry dust (TID) and 30 Mg ha\(^{-1}\) farmyard manure (FM). Soil samplings from 0-20, 20-40 and 40-60 cm depths were made at five different critical growing stages of wheat that started 7 days after incorporation of residues and ended at harvest. NH\(_4^+\)-N and NO\(_3^-\)-N content of collected samples were determined. After the treatments, mineral nitrogen content of surface layer (0-20 cm) increased 2.10-4.02 fold in comparison to the control. Accordingly, mineral nitrogen contents of deeper layers were also increased. This trend has continued on more than two months after incorporation of organic residues. The average amount of leached nitrogen was similar in FM, TID-I and -II, and RH + N2 treatments. It can be concluded that even though organic residues with low C: N applied to soils as nitrogen source, it may significantly contribute to nitrogen leaching in soils through fast mineralization rate.