Field experiments were carried out in randomized block design with 3 replications in Nghi Phong commune, Nghi Loc district, Nghe An province in the Summer-Autumn season 2014-2015 to evaluate growth, yield and biochemical component of promising sesame genotypes. The results showed that all of sesame genotypes were belong to non-branches sesame (except VDHS), black sesame (except V6), leaves were completely dropped at mature period (except VDHS and VD11), 4 locules per fruit (except VDHS and V6), one capsule per leaf axil (except for VD11 and VDHK). The promising NVL10 sesame line is classified as tall, yield of 1.17-1.27 tons/ha equivalent to that of V6 control variety (1.17-1.27 tons/ha) and higher than the other varieties. The NLV10 line is suitable for processing high quality oil for domestic consumption and export due to black sesame, the average oil content (44.23%), low Oleic/Linoleic ratio (0.87) and Iodine content high (112).

Keywords: Sesame, lipid content, unsaturated fatty acid, acid index.