Introduction
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Human activities for the enhancement of his own welfare and prosperity have given birth to many crises in the present world. In the developed and the developing countries, the most oftenly debated problems are the environmental crises. Environment is described as the physical surroundings and conditions affecting the lives of the people, animals and plants. Scientific and technological developments for the improvement of economy have led to a large-scale exploitation of the environment. Regenerating and balancing capacity of the environment has disrupted and is deteriorating day by day due to his massive research activities, manufacture of consumables, and indiscriminate consumption that has resulted in waste production. A huge consumption of various natural resources for obtaining energy and a massive disposal of wastes has polluted the environment. The term pollution can be defined as an undesirable change in the physical, chemical or biological characteristics of the air, water and soil that may harmfully affect the life (Sharma, 2001). Any substance, which causes pollution, is called a pollutant.

The pollutants that are responsible for air pollution are of two types gaseous and particulate. The particulate matters
are originated directly from industrial and other activities including power generation units, brick-kiln units, cement manufacturing plants, textile units, pesticide units etc. The particles going into the atmosphere, depending on their size and weight may remain in air for varying length of time. Those particles having larger size than 10μ, settle under force of gravity on surfaces of vegetation and soil but the smaller ones remain suspended in the air for longer duration (Das, 1986). Particulate air pollutants falling on the leaf surfaces form a thin encrustation and block the stomatal pores. This hampers transpiration and checks the transmission of solar radiation (Darley, 1966; Agrios, 1997). They also affect the quality of air, water and soil. The major particulate air pollutants are coal dust, fly ash, lime dust, cement dust, soil dust and brick-kiln dust.

Fly ash is produced after combustion of coal in power generation units, in a huge amount. Presently, there are about 60 coal-based power generating plants in India, which are consuming nearly 2/3rd of the total coal, produced (Khan and Khan, 1991). Indian coal contains 35-50 per cent ash. Presently, in India the coal-based power generation plants are disposing more than 120 million tonnes ash annually. Today, utilization or disposal of fly ash is a big challenge. Now
hardly 2% of the total produced fly ash is utilized in our country and the rest is dumped as wet slurry in deep pits near the power stations. Fly ash has a great potential to be utilized as a source of macro- and micro-nutrient elements required for plant growth. Fly ash contains various useful constituents such as Ca, Mg, Fe, Cu, Zn, Mn, B, S and P along with appreciable amounts of toxic heavy metals such as Cr, Pb, Hg, Ni, V, As and Ba (Majumdar and Mukharjee, 1983; Fluekar et al., 1983; Dalmau et al., 1990). Amendment of acidic soil with fly ash can neutralize soil acidity, can increase cation exchange capacity, water holding capacity and pore size which may enhance plant growth and yield (Jones and Straughan, 1987; Adriano et al., 1980). Fly ash accumulation in soil may be beneficial for the growth of plants (Mishra and Shukla, 1986). The recent researches have shown the beneficial potentiality of fly ash which increased the plant growth and yield of crops like chickpea, lentil, potato, cucumber, soyabean and tomato generally at lower levels (10-50%), however, higher levels (60-100%) have been reported harmful (Singh, 1989; Singh et al., 1994, 1997; Khan and Khan, 1991; Khan et al., 1997; Raghav and Khan, 2002).

Brick-kiln dust is also a major particulate air pollutant in India. The process for making one round bricks takes the time
of maximum 15 days to one month. In one round, near about 6 lacks bricks are prepared. The consumption of coal is about 12-18 tonnes for preparing one lac bricks, depending on the quality of the coal. The standard size of brick is (23×11×7) cm. The ash of coal, wood and dust of bricks during preparation of bricks in kiln form the brick-kiln dust. The complete combustion of fuel in brick-kilns mainly consists of fluoride, carbon dioxide, water molecules, oxides of nitrogen, sulphur dioxide, sulphur trioxide and large amount of brick-kiln dust. Brick-kiln dust contains essential elements along with toxic substances.

The waste materials produced in bulk like fly ash and brick-kiln dust are dumped in pits or as land hills. In either the case, both the repositories need careful management programs and conservation measures in order to protect the immediate surroundings. Recently, use of fly ash as a fertilizer has been advocated by some workers (Wong and Wong, 1989; Khan, 1989; Khan and Khan, 1996). If fly ash and brick-kiln dust are to be considered for soil amendment then it is expected that these would change the physico-chemical characteristics of soil. For this purpose different concentrations of these pollutants were evaluated against growth and productivity performance of two major oilseed
crops of India- mustard (Brassica juncea L. var. Varuna) belonging to the family Brassicaceae and linseed (Linum usitatissimum L. var. Neelam) belonging to the family Linaceae. The major objectives for Ph.D. were as follows:

1. Analysis of soil characteristics amended with fly ash before and after growing of B.juncea and L. usitatissimum.


3. Effect of different concentrations of fly ash and brick-kiln dust on growth and productivity of B.juncea and L. usitatissimum.

4. Effect of different concentrations of fly ash and brick-kiln dust on photochemical pigments of leaves and total protein in seeds of B.juncea and L. usitatissimum.