



Seasonal Variations in the Growth and Yield of Chilli Plants in Fly Ash Amended Soil

• Akshada Prakash • Neha Kumari • Rani Kumari
• Reshma Sinha

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Corresponding Author : Reshma Sinha

Abstract : *The present project work is based on the evidences which prove that fly ash is a good soil nutrient modifier. The research work was carried out to see the visible changes in the growth and yield of chilli plants (*Capsicum annum*) in summer and rainy seasons from May to September, 2018 in different soil-fly amendments. Observations of shoot length, root length, number of leaves, germination rate, leaf surface area, fresh weight, dry weight, moisture content and foliar pigments prove that amendments of 10% and 15% fly ash applications are potentially favorable for plant growth and its yield. Hence, it can be used in agriculture.*

Keywords: *Capsicum annum, fly ash, foliar pigments, nutrient modifier, moisture content.*

Akshada Prakash

B.Sc. III year, Zoology (Hons.),
Session : 2016-2019, Patna Women's College,
Patna University, Patna, Bihar, India

Neha Kumari

B.Sc. III year, Zoology (Hons.),
Session : 2016-2019, Patna Women's College,
Patna University, Patna, Bihar, India

Rani Kumari

B.Sc. III year, Zoology (Hons.),
Session : 2016-2019, Patna Women's College,
Patna University, Patna, Bihar, India

Reshma Sinha

Assistant Professor, Department of Zoology,
Patna Women's College, Bailey Road,
Patna-800 001, Bihar, India
E-mail : sinha.reshma@rediffmail.com

Introduction:

A developing country like India comes with a highly impactful and wide-spread coal-based economy. Coal-based thermal power plants produce large quantities of combustion residues. The solid waste residue includes bottom ash, slag and fly ash. Fly ash is that portion of the residue that has sufficiently small and enough particle size to be carried away from the boiler in the fuel gas. Fly ash accounts for approximately seventy percent of the solid waste produced from coal combustion. Every year 85 million tonnes of fly ash is produced by 82 thermal power stations operating in the country. Fly ash is a serious problem due to its physical characteristics and sheer volumes generated. The impact of coal residue on health and environmental consequences has been reviewed extensively.

Europe is reusing 40-50% of their coal fly ash (Adriano et.al., 1980) and Japan is reusing 60%(Wong and Wong, 1989), whereas the United States has consistently reused only 20-30% (Chang et.al., 1977; Theis and Gardner 1990). Although many fly ash reutilization projects have given positive results, most are still perceived as experimental primarily due to the environmental