

## Distribution and incidence of apple powdery mildew in a mixed cultivar orchards and relationship to disease severity

Amitabh Singh<sup>1</sup>, K. P. Singh<sup>2</sup>, and G.S. Rajwar<sup>3</sup>

<sup>1</sup>Varanasi, India

<sup>2</sup>G. B. Pant University of Agriculture & Technology, India

<sup>3</sup>H N B Garhwal University, India

Apple powdery mildew epidemics, caused by *Podosphaera leucotricha* (Ell. and Ev.) Salm. can be readily described in terms of the disease triangle. The role of different environmental factors, viz., temperature, relative humidity, leaf wetness, sunshine and rainfall were studied in relation to disease development. The present experiment was conducted during the season 2003 to 2005 to determine a simplified assessment procedure by which apple powdery mildew severity/index could be predicted from incidence data and develop incidence-severity relationship in apple cultivars under Uttaranchal hilly conditions. The overwintering mildew (initial pathogen population) is a key primary determinant in the development of secondary mildew epidemic. The deleterious effect of extremely cold temperatures on overwintering of apple powdery mildew has long been recognized. However, the basis for the reduction in disease incidence has remained somewhat elusive. The development of powdery mildew (*Podosphaera leucotricha*) on ten popular cultivars of apple, viz., Mollies Delicious, Red Chief, Braeburn, Bakingham, Early Shanbery, Jona Mac, Red Free, Red Fuzi, Golden Spur, and Chaubatia Anupam were studied to determine incidence-severity relationship. The disease was confined primarily to the vegetative terminal shoots early in the season and progressed to the other leaves later. The use of percentage scales and keys of visual disease severity, remote sensing, and some indirect methods like spore counts and disease incidence are considered valid approaches for disease assessment. The relationship between increase in incidence of powdery mildew in relation to severity can be established either by making sequential records in one tree during the progress of an epidemic or by assessing many trees with different amounts of disease at one point of time. Thus, from the above analysis, it is evident that a combination of several factors like the presence of susceptible host, virulent pathogen, and congenial environment for disease development during receptive phenological stage of apple tree, was responsible for the incidence of the powdery mildew on apple in Uttaranchal during 2003 - 2005 orchard seasons.

amitabhs777@gmail.com

## Haematological parameters in association with outcomes in sickle cell anaemia patients in Nnewi, Anambra State, Nigeria

Okocha EC

Nnamdi Azikiwe University Teaching Hospital, Nigeria

**Introduction:** Sickle cell disease (SCD) has a wide range of clinical presentation. We evaluated haematological parameters, which are widely available and assessable, as indices of clinical outcome in SCD.

**Methods:** One hundred and thirtysix consecutive patients who presented in the sickle cell clinic of Nnamdi Azikiwe University teaching hospital were studied using a questionnaire. Haematological parameters for full blood count (FBC) for each patient were obtained using a cell counter. Chi square test was used to compare frequencies and generate p values.

**Result:** The presence of sickle cell complications was significantly associated with raised white blood cell count (WBC) above  $11 \times 10^9/l$  ( $p = 0.03$ ); also close to significance ( $p = 0.07$ ) was the trend that mean WBC of the patients increased with increasing numbers of complications. Mean packed cell volume (PCV) and WBC tended towards normal as the age at diagnosis increased, being significant for PCV ( $p = 0.01$ ). Increased frequency of crisis did not necessarily result in more blood transfusion.

**Conclusion:** Our data provide additional support that widely available and assessable haematological parameters such as PCV and WBC can be used as indices to predict SCD outcome.

### Biography

Dr Okocha E.C completed his residency training in haematology and Oncology at the age of 31 years from the Nigerian National Postgraduate Medical College; and postdoctoral fellowship from Duke University, Institute of Genome sciences and Policy. He is the head, haematology department, Nnamdi Azikiwe University, Nnewi campus, Nigeria. His area of research interest is sickle cell disease. He has published papers in local and international journals.

onyichideokocha@yahoo.com