Rice injuries constrain yield production and may play a central role in global rice productivity. Detailed on-farm surveys conducted in five production environments (Central Plain; Thailand, Odisha; India, Red River Delta; Vietnam, Tamil Nadu; India, and West Java; Indonesia) are useful sources of data to help understand yield constraints in farmers’ fields. These data also help us understand the interactions and importance of pests and the complex relationships within agroecosystems. Network analysis is a promising tool frequently used to describe the pairwise relationships of a large number of variables. Network analysis of the co-occurrence patterns of pest and disease incidence could offer new insight into pest management. In this study, Spearman’s correlation was found to be the most suitable measure because of its robustness to noise, outliers, and ability to accurately predict the interactions. Resulting networks network links rice injuries (termed nodes) connected with co-occurrence relationships (termed edges). Based on node-wise properties, network can suggest the central injuries, possibly are key indicators to monitor. The variations in co-occurrence activity of rice injuries in seasons, and yield levels were examined by using differential networks. They showed contrasting linkages among the injuries and identify injuries significantly responding to the conditions.

to production seasons, and production environments to identify the variabilities of their co-occurrence patterns. The node-wise topology (node degree, clustering coefficient, and betweenness) of the networks revealed that the key. The season-to-season variation in co-occurrence activity of rice injuries is examined by season-to-season differential network showed contrasting linkages to environmental conditions among the injuries.

Characterizing rice injuries requires knowledge and information of qualitative and quantitative information. One way of gathering data the data necessary for this is through the conduct of surveys. Given the nature of the data, it is not a simple task to analyze and examine in order to derive information and knowledge. Survey data conducted in five production environments (Central Plain, Thailand, Odisha, India, Red River Delta, Vietnam, Tamil Nadu, India, West Java, Indonesia) were used for identify the injury syndrome. I applied rice injuries data of survey data to determine co-occurrence patterns among rice injuries, and then analyzed these results relative to. Network analysis has been used in a variety of fields to study relational data, but has yet to be used in the study of rice crop health survey data. he present work is largely expository introducing network analysis and showing how it can be applied to possibly better understanding regional hurricane activity as well as hurricane activity overtime. Network analysis was applied to identify possible co-occurrence among relative to production season and conditions, and production environments to identify the variabilities of their co-occurrence patterns. The co-occurrence networks were composed of connected injuries. These connected nodes in the network were the injuries that commonly be observed in farmers' filed at curtain season and production environments. Survey data were not not mal distributed and Spearman's is good method to capture the relationships of crop health survey data. The first case consists of networks developed based on the relationships of spatial locations of landfalls and the second part consists of networks developed based on the relationships of the temporal occurrence of landfalls. In the first case, the network links rice injuries (termed nodes) with co-occurrence relationships (termed links). The topology of the network is examined using local metrics. The resulting networks of curtain seasons and production environments were revealed........ the chapter 4. The chapter 5 the season-to-season variation in co-occurrence activity of rice injuries is examined by differential network analysis, which is extended from the ideas and concepts of network analysis. The “visibility” network link years experiencing a hurricane landfall with other hurricane landfall years “visible” to each other through time. The topology of the visibility network is examined using local and global metrics. Results show that overall the visibility network has few years with many lines of visibility, therefore, many linkages to other years. Years with high hurricane count have more visibility in the network than those years that have less storms. Among years with high counts the years that are surrounded (before and after) with years of low counts will have greater visibility. The years 1886, 1893, 1955 and 2004 are highly visible in the network of U.S. hurricanes. A year is more central if it is a link in more visibility chains between other years in the network. Networks showed contrasting linkages to environmental conditions among the main bacterial phyla