The growth, reproduction and geographical distribution of plants are profoundly influenced by their physiological ecology: the interaction with the surrounding physical, chemical and biological environments. This textbook is notable in emphasizing that the mechanisms underlying plant physiological ecology can be found at the levels of biochemistry, biophysics, molecular biology and whole-plant physiology. At the same time, the integrative power of physiological ecology is well-suited to assess the costs, benefits and consequences of modifying plants for human needs, and to evaluate the role of plants in ecosystems. Plant Physiological Ecology begins with the primary processes of carbon metabolism and transport, plant-water relations, and energy balance. After considering individual leaves and whole plants, these physiological processes are then scaled up to the level of the canopy. Subsequent chapters discuss mineral nutrition and the ways in which plants cope with nutrient-deficient or toxic soils. The book then looks at patterns of growth and allocation, life-history traits, and interactions between plants and other organisms. Later chapters deal with traits that affect decomposition of plant material and with plant physiological ecology at the level of ecosystems and global environmental processes. Plant Physiological Ecology features numerous boxed entries that provide extended discussions of selected issues, a glossary, and numerous references to the primary and review literature. The significant new text is suitable for use in plant ecology courses, as well as classes ranging from plant physiology to plant molecular biology.

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PDF On Jun 17, , Hans Lambers and others published Plant Physiological Ecology. For ecologists trying to identify mechanisms related to the function of plants in ecosystems, the molecular approaches represent a big step forward in understanding because plants interact with their environment predominately through the physiology processes of the individual (unlike animals where behaviour has a large. Plant ecophysiology is the science that seeks to explain the physiological mechanisms underlying ecological observations. Much is made these days of the . first edition of Plant Physiological Ecology, we wish to thank the following colleagues, in alphabetical order, for their valuable input: Owen Atkin, Juan. Barcelo.

Box 9E. 1 Continued FIGURE 2. The Câ€“Sâ€“R triangle model (Grime ). The strategies at the three corners are C, competiti- winning species;.

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