

Abdullaev, Kh.A., Karimov, Kh.Kh.: **Indeksy Fotosinteza v Seleksii Khlopchatnika.** [Photosynthetic Traits in Cotton Breeding.] – Donish, Dushanbe 2001. [In Russ.]

Recent breeding of agricultural plants includes the traditional selection, as well as basic results and methodological procedures provided by genetics, physiology, biochemistry, phytopathology, *etc.* The present volume—devoted to the fiftieth anniversary of foundation of the Academy of Sciences of the Republic of Tajikistan—deals with long-standing authors' studies of phenotypic variation and genetic determination of photosynthetic traits of cotton, and its heritability and correlation with yield quantity and quality.

The volume is arranged in four sections. The first one deals with general aspects of photosynthetic characters and yield formation (cotyledon form and size, leaf form, number, area, surface, colour, angle in canopy, specific leaf area, life span duration, biomass and dry matter formation and allocation, components of photosynthesis such as net photosynthetic rate, conductances for CO_2 transfer, *etc.*). Further, several paragraphs discuss properties and functioning of chloroplasts and plastid pigments (chlorophylls *a/b* ratio, chlorophyll fluorescence, electron transport chain activities, photosystems 1 and 2), functioning of ribulose-1,5-bisphosphate carboxylase/oxygenase (content and activity, carboxylation and oxygenation activities), photosynthesis and yield of cotton (apparent and potential rates of photosynthesis, net pho-

tosynthetic rate and yield structure, and cotton fibre quality), *etc.* All these traits and processes are presented in correlation with genera, species, hybrids, or cultivars.

The section II deals with genetic determination of the above photosynthetic characters and their inheritance, and presents an analysis of hybrid characters. The section III summarizes cotton breeding using photosynthetic characters in connection with traditional methods of selection (survey of new perspective cotton cultivars bred according to photosynthetic characters and traditional methods of selection). The section IV presents practical recommendations for using photosynthetic characters in cotton breeding. Every section is supplemented with selected methods and apparatuses for determining the characters studied. The volume is accompanied by a list of references (306 citations in Russian, and 172 in other languages, mostly in English).

The studies presented here were made in the Institute of Plant Physiology and Genetics of the Academy of Sciences of the Republic of Tajikistan. The volume is intended for plant physiologists, geneticists, plant breeders, and postgraduate and undergraduate students of agricultural and biological education. In my opinion, many English speakers would welcome an extended abstract, and even a short subject and plant index in English.

J. ČATSKÝ (*Praha*)