CUCURBITACEAE 2016

PROGRAM and ABSTRACTS

XIth Eucarpia Meeting
on Genetics and Breeding
of Cucurbitaceae

July 24-28, 2016

Warsaw
POLAND

[P43] Suitability for Field Cultivation of New Cucumber F_1 Hybrids Bred at the Research Institute of Horticulture

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Our aim was to evaluate the combining ability of cucumber breeding lines based on an assessment of their economically important traits in experimental F1 hybrids. Six newly developed hybrids, bred at the Research Institute of Horticulture (InHort) in Skierniewice, Poland, were compared with the commercially available 'Aladyn' (InHort) and 'Śremski' (Spójnia Nochowo). The evaluations were conducted from 2012 through 2014 in the field. All six experimental hybrids had significantly higher marketable and total yields than the standard 'Śremski'. Significant progress in breeding was apparent in the results for early yield. The earliest experimental hybrid was 'Ibis F1' registered in 2014. Moreover, 'Ibis' is the first Polish cucumber cultivar with chilling tolerance at the germination and first leaf stages. All six experimental hybrids had morphologically uniform fruits, most of them showed very high yield quality. Progress in increasing the level of resistance to *Pseudoperonospora cubensis* (downy mildew) was also evident. 'SKW 1814' had the highest level of resistance to this pathogen among all hybrids tested, including the resistant control, 'Aladyn'. On the basis of the assessment of these F1 hybrids, the effects of the general (GCA) and specific combining ability (SCA) of their parental components were estimated. Analysis of variance of GCA and SCA allowed us to select parental lines with the best combining ability. The gynoecious line B 6628 showed the highest positive estimator of GCA for the most important traits, while the monoecious paternal line B 6992 had the greatest SCA effect in increasing the resistance to *P. cubensis.*