susceptible to infection. This transdifferentiation event demonstrates de novo specification of epidermal cell identity, which was thought to be restricted to embryogenesis.

P2619

Board Number: B774

Alterations in indices of internal anatomical structure of Brachypodium distachyon and Kazakhstani varieties of soft wheat under the action of Puccinia recondita pathogen.

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According to the Food and Agriculture Organization of the United Nations Kazakhstan is one of the world leading producers of high-quality wheat grain. Puccinia (P.) recondita pathogen can lead up to 40-60% in yield loss. The objective of study is the assessment of influence of P. recondita infection on the quantitative indices of internal anatomical structure of leaves, stalks and roots of a wild cereal model plant Brachypodium distachyon (standard line Bd21) and soft wheat varieties. Kazakhstanskaya 19 (K19), Kazakhstanskaya early (KE) with varying resistance to a brown rust (15 and 60%) and Bd21 were used as study materials. For anatomic studies above and underground vegetative parts of soft wheat and Bd21 collected on experimental and twice infected fields were used. Anatomic specimens (over 70) were prepared using a microtome with freezing unit; thickness of anatomic cuts was 10-15 microns (μ). Measurement of morphometric indexes was taken by eyepiece micrometer (ocular 10x22); microphotographs (lens 4x0.10) of anatomic cuts were produced on a trinocular microscope with the digital video camera. Statistically significant decrease by 13% in diameter of conductive bundles of leaf blades, increase by 24% in diameter of xylary fibers are observed in Bd21 under the pathogen action, while the primary cortex is nearly reduced. Infected wheat plants show similar changes towards increase in the sizes of all tissues of leaf blade and dissimilar for stem (reduction in K19 and prevailation at KE, susceptible to brown rust). Increase in thickness of primary cortex (537.99 μ) and diameter of xylary fibers (69.86 μ) are observed in internal structure of roots and the flag leaves of K19 causing increase in diameter of the central cylinder (770.41 μ). KE plants, on the contrary, display reduction of the sizes of primary cortex (269.34 μ) and the central cylinder (345.35 μ). Formation of anatomical structure of plants – growth process, sympathetic on the action of external conditions, especially during the early period of plant development, plays an important role in the course of plant adaptation to biotic factors.

P2620

Board Number: B775

Epithelial Cell Reintegration: Stray Cells Find Their Way Home.

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Mitotic epithelial cells exhibit changes in cell position as well as cell shape. Although interkinetic nuclear migration is primarily studied in vertebrate pseudostratified neuroepithelium, apical-directed mitotic movement is also observed in cuboidal and columnar tissues. In some conditions, one of the two mitotic products will not inherit a connection to the basement membrane. That cell must therefore rebuild neighbour cell contacts de novo as it reintegrates into the layer. In Drosophila, reintegration is driven by the lateral cell adhesion molecule Neuroglian. L1-Cam, the vertebrate homolog of Neuroglian, is also expressed in vertebrate epithelial tissues in which reintegration behaviours have been observed. We are

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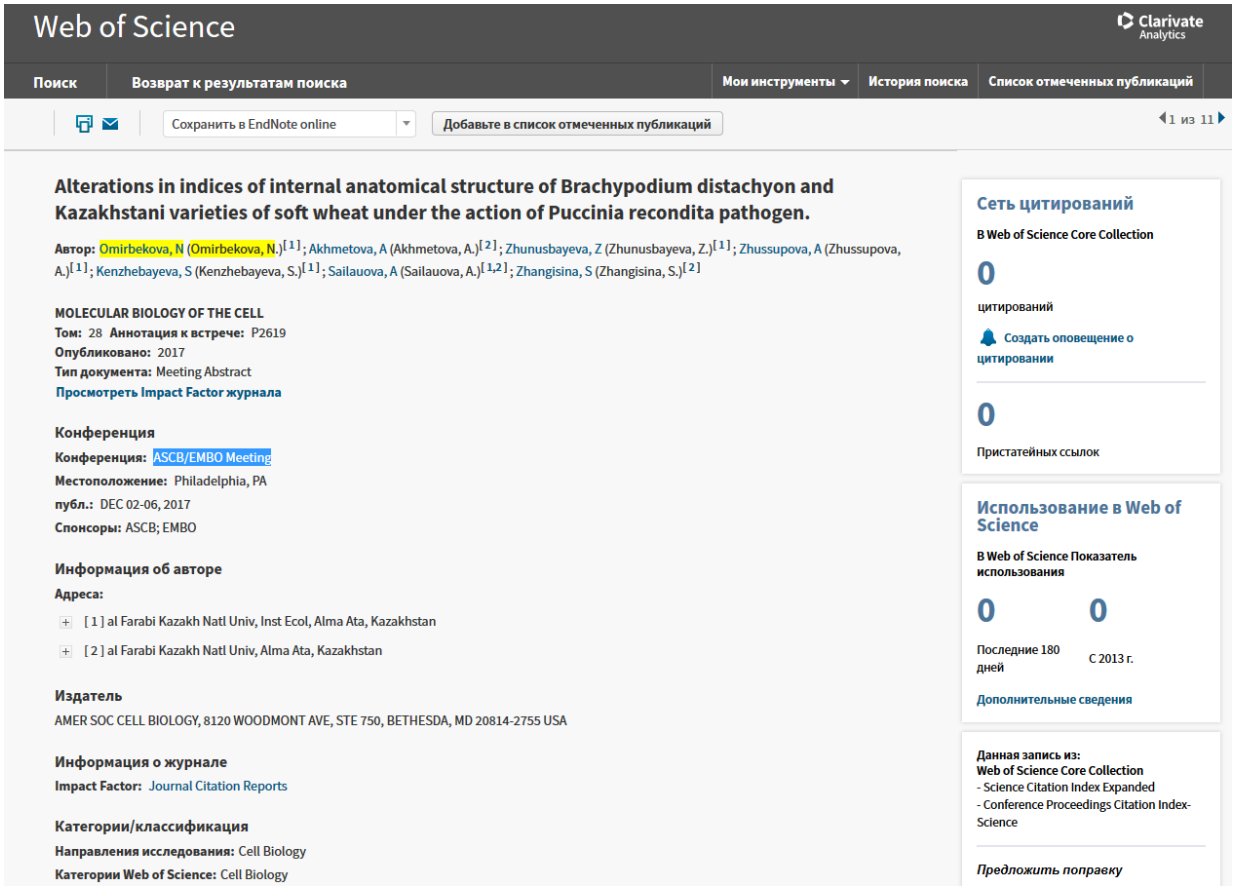

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