

Short information about presentations:

Section 4: Drought in Practice (agriculture, water reservoirs for drinking purposes)

Chair - doc. RNDr. Štefan Rehák, PhD., WRI, SR

- **T. Orfánus – New trends in the research of drought indicators** (orfanus@uh.savba.sk)
When assessing the risk of agronomic drought and making prognoses, it is necessary to take into account the presence or absence of ground water level which can supply the soil profile during even several days or months long meteorological drought. In dry soil the drainage is a negligible drying process in comparison with evapotranspiration. Changes in variability of water content in soil (root zone) are a reliable indicator of hydrological processes happening currently in the system Pv-P-A and a significant decrease of this variability in drought period means the beginning of agronomic drought.
- **Ľ. Jurík – Drought assessment in agricultural landscape using the analysis of water content in active root zone** (lubos.jurik.nr@gmail.com)
The drought causes problems especially for the agriculture and forestry, its significance is less promoted in comparison to the lack of water for drinking or industry. Centre of Excellence for Integrated River Basin Management (CEIMP) is aimed at specific targets oriented to the creation of conditions for the research of runoff generation and water storage dynamics in soils. Article deals with the evaluation of continuous measurements of soil water. These enable to forecast the drought of soil and stock changes of available water.
- **Š. Rehák – Development of available water resources for irrigation during dry periods** (stefan.rehak@vuvh.sk)
According to climate scenarios and outputs of models of general circulation of atmosphere there is expected extraordinary increase of high precipitation totals as well as increase of number of days without precipitation. These facts will impacts the stability of agricultural production, especially in lowland areas. The area of land with water deficit increased and the moisture demand of crops also increased. However, the disposable resources of irrigation water decrease that will limit the development of irrigation. The areas with water deficit were determined according to the ratio of actual and potential evapotranspiration ET_a/ET_0 . The irrigation demand of crops was calculated by model Daisy. Disposable resources of irrigation water were evaluated through hydrological balance according to scenarios CCCM for time horizons 2010, 2030 a 2075.
- **M. Čistý – Evaluation of water management balance of irrigation reservoir – case study Horné Orešany** (milan.cisty@stuba.sk)
It was proved that hydrological and climate conditions have changed which caused smaller reservoir content and higher irrigation consumption. Implemented balance calculations provided an idea about the abstraction possibilities from the reservoir and size of possible irrigated area which offers new options of reconsideration of irrigation reservoirs in Slovakia in the light of new data and methods.
- **Zs. Lukáč – Strategic development of water companies with the focus on safety aspects** (zsolt.lukac@bvsas.sk)
Safety aspects of drinking water supply are focused on risks resulting from natural processes or human activities. In the first case a significant risk is a drought phenomenon and in the second case it is a disruption of water supply system by violators. In both cases the task of safety agenda is to minimize risks or negative impacts which is commonly for both cases represented by diversification (of mainly

water supply resources and distribution lines). When the water supply system is disrupted by violators, diversification is employed after disruption event – safety guidelines shall be primarily oriented on prevention and avoidance.

- K. Denesová – Žitný ostrov – Large sources Gabčíkovo and Jelka – assessment of regime observation in the years 2010 till 2015 depending on climate conditions
katarina.denesova@zsvs.sk

Groundwater regime of Gabčíkovo and Jelka water supply resources mostly depends on the Danube regime, so it can be affected by the water regulation in the Danube River. Comparison of water levels in the years 2010 – 2015 with preceding years showed that climate change impact was not demonstrated in related areas.