

"ژورنال منتخب الزویر در حیطه کشاورزی"

چکیده ی مقاله های زیر در صورت تمایل قابل ترجمه می باشند

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## Computers and Electronics in Agriculture

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### 1. Most Downloaded

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#### **Agriculture Land Suitability Evaluator (ALSE): A decision and planning support tool for tropical and subtropical crops**

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##### **Abstract**

Agricultural land suitability evaluation for crop production is a process that requires specialized geo-environmental information and the expertise of a computer scientist to analyze and interpret the information. This paper presents ALSE, an intelligent system for assessing land suitability for different types of crops in tropical and subtropical regions (e.g. mango, banana, papaya, citrus, and guava) based on geo-environmental factors that automates the process of evaluation and illustrates the results on an attribute table. Its main features include support of GIS capabilities on the digital map of an area with the FAO-SYS framework model with some necessary modifications to suit the local environmental conditions for land evaluation, and the support of expert knowledge through on spatial tools to derive criteria weights with their relative importance. A dynamic program for calculation of eigenvalues and eigenvectors of a weighting matrix is provided. Expertise and knowledge help ensure that ALSE databases represent realistic, practicable and functional systems. It is useful for decision makers to determine the quality of land for agricultural uses and is intended as a decision and planning support. Responsibility for any decisions based partly or wholly on the output of ALSE rests

with the decision maker. ALSE ensures that the results are interpreted correctly within the relevant context, and contributes by maximizing land-use planning and decision support.

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## 2. Recent Article

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### **Spatial distribution of livestock and poultry farm based on livestock manure nitrogen load on farmland and suitability evaluation**

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**Abstract**

A spatial distribution model of livestock manure nutrient was used to study the spatial distribution of livestock manure and livestock manure nitrogen load on farmland (LMNLF) at a patch scale. The spatial distribution of livestock and poultry farm (LPF) was also evaluated. The results showed that most regions (50.68%) in the town of Shangjie were forbidden and unsuitable areas for LPF. The highly, moderately and marginally suitable areas for LPF accounted for 25.53%, 23.17% and 0.62% of total area respectively. The combination of the LPF suitability evaluation and livestock manure nitrogen load on farmland (LMNLF) estimation results indicated that 38 LPF should be rectified, relocated or closed, and 14 optimum lands were identified for LPF. Moreover, a relocation plan was developed and visual expressed by GIS spatial analysis.

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## 3. Most Cited

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### **CropScape: A Web service based application for exploring and disseminating US conterminous geospatial cropland data products for decision support**

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**Abstract**

The Cropland Data Layer (CDL) contains crop and other specific land cover classifications obtained using remote sensing for the conterminous United States. This raster-formatted and geo-referenced product has been widely used in such applications as disaster assessments, land cover and land use research, agricultural sustainability studies, and agricultural production decision-making. The traditional CDL data distribution channels include paper thematic maps, email data requests, CD/DVD media, and ftp bulk downloading. To effectively and efficiently meet the growing needs of our customers, CropScape (the name invented for a new interactive Web CDL exploring system) was developed to query, visualize, disseminate, and analyze CDL data geospatially through standard geospatial Web

services in a publicly accessible online environment. CropScape not only offers the online functionalities of interactive map operations, data customization and downloading, crop acreage statistics, charting and graphing, and multitemporal change analysis as well in an interoperable manner, but also provides Web geoprocessing services such as automatic data delivery and on-demand crop statistics for uses in other applications. This system delivers dynamic user experiences with its comprehensive capabilities in an open geospatial context, and facilitates delivery and analysis of geospatial cropland information for decision support and various research endeavors. More than 17,000 users around the world have visited CropScape in its first 5. months of availability.

#### **Download Link:**

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## **4. Open Access Article**

مقاله ی زیر بصورت کامل قابل دریافت و در صورت تمایل قابل ترجمه می باشد

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### **System specification and validation of a noseband pressure sensor for measurement of ruminating and eating behavior in stable-fed cows**

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#### **Abstract**

Rumination and eating behavior are important indicators for assessing health and well-being in cattle. The objective of this study was to develop and validate a novel scientific monitoring device for automated measurement of ruminating and eating behavior in stable-fed cows to provide research with a measuring instrument for automated health and activity monitoring. The RumiWatch noseband sensor (Itin+Hoch GmbH, Liestal, Switzerland) incorporates a noseband pressure sensor, a data logger with online data analysis, and software. Automated measurements of behavioral parameters are based on generic algorithms without animal-specific learning data. Thereby, the system records and classifies the duration of chewing activities and enables users to quantify individual ruminating and eating jaw movements performed by the animal. During the course of the development, two releases of the system-specific software RumiWatch Converter (RWC) were created and taken into account for the validation study. The results generated by the two software versions, RWC V0.7.2.0 and RWC V0.7.3.2, were compared with direct behavioral observations. Direct observations of cow behavior were conducted on 14 Swiss dairy farms with an observation time of 1 h per animal, resulting in a total sample of 60 dairy cows. Agreement of sensor measurement and direct observation was expressed as Spearman correlation coefficients ( $r_s$ ) for the pooled sample. For consolidated classification of sensor data (1-h resolution), correlations for rumination time were  $r_s = 0.91$  (RWC V0.7.2.0) and  $r_s = 0.96$  (RWC 0.7.3.2), and for eating time  $r_s = 0.86$  (RWC 0.7.2.0) and  $r_s = 0.96$  (RWC V0.7.3.2). Both software versions provide a high standard of validity and measuring performance for ruminating and eating behavior. The high to very high correlations between direct observation and sensor data demonstrate that the RumiWatch noseband sensor was successfully developed and validated as a scientific

monitoring device for automated measurement of ruminating and eating activity in stable-fed dairy cows.

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