Recent articles published by Chinese Journals

The following abstracts were collected from Chinese journals published since 2011, with little edition work.

1 Nutrient Blocking Effects of Plant Hedge with Various Rows on Slope Farmland Nearby Hongfeng Lake
Cai Xianli, Zhou Yunchao, Liu Xiaoyun, Ma Liping, Tian Xiao
(Forest College, Guizhou University, 550025, Guiyang, China)

Abstract In order to choose a appropriate width of plant hedge for soil and water conservation on slope farmland nearby Hongfeng Lake, different widths of plant hedge of mixed Vetiveria zizanioides and Tephrosia purpurea (basic hedge were composed of 1 line Vetiveria zizanioides and 1 line Tephrosia purpurea, and 2 row hedge means 1 basic hedge.) were designed, each plant hedge treatment with 3 bands, including 0 (control), 2, 4, 6 rows /band, and 2-4-6 rows from top to bottom. Surface runoff, sediment and nutrients were compared. All indexes of treatments were lower than that of the control. According to the variance analysis and F-test, significant differences among different treatments were found. 1) Further multiple comparison results showed that nutrient elements were significantly blocked by the plant hedge treatments except for 2-rows /band treatment. 2) There was no significant difference among treatments with 2-rows /band, 4-rows /band and 2-4-6 rows from top to bottom, but the difference between 6-rows /band and 2-rows /band treatments was significant. 3) There was only significant difference in blocking effect of soil P and K between the treatment of 6-rows /band and other two treatments of 4-rows /band and 2-4-6 rows from top to bottom. From results of both experiment and practical application, 4-rows /band probably is the best choice for local place, followed by 2-4-6 rows from top to bottom.

Key words different bandwidth plant hedge; slope farmland; soil and water conservation; Hongfeng Lake

2 Microbial Features of Sloping Farmland Soil in Calcareous Purple Area Affected by Different Hedgerows Treatments in Sichuan Basin
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Abstract A fixed field experiment has been established for 10 years in Ziyang, Sichuan Province, and different hedgerows such as Vetiveria zizanioides hedgerow (VH) and Anomorpha fruticosa hedgerow (AH) were used to control the soil and water loss. In this study, we determined soil microbial features affected by the above treatments, the results showed that, compared with the CK, the amount of soil bacteria, actinomycetes and fungi of the VH and AH treatments increased by 63.43% and 36.63%, 47.87% and 71.89%, 74.60% and 43.65% respectively; soil microbial biomass carbon (SMBC) increased by 90.02% and 24.97%; soil microbial biomass nitrogen (SMBN) increased by 83.32% and 45.04%; ammonification activity increased by 73.28% and 75.65%; urase activity and alkaline phosphatase activity increased by 45.20% and 61.86%, 26.68% and 38.95%; however, nitrosification and nitrification activity decreased by 26.97% and 52.96%, 6.46% and 22.19%, respectively. Thus, hedgerows treatments could improve soil physical and biochemical properties, and increase the microbial quantity, SMBC and SMBN, and reduce the soil nitrogen loss and enhance the utilization efficiency of soil nitrogen and phosphate.

Key words: Hedgerow, Sloping farmland, Microbial characteristics, Enzyme activity

3 Effect of Root Contact on N Uptake Distribution in Intercropped
**Soybean and Hedgerow**

GUO Zhong-lu1 ZHONG Cheng2 WANG Zhong-min3 CAI Chong-fa1

**Abstract** Below-ground for nutrients and water can be clue to the cause of the reduction of crops yields. Root interaction plays on important role in estimating the effect of below-ground competition. However, little information has been known about these hedgerows-crops interaction in contour hedgerow agroforestry. Pot experiments were conducted to study the effect of root contact on N absorption and transfer in purple soil of two hinges-soybean intercropping systems with two different methods of 15N foliar-feeding and 15N soil labeling methods, along with root partition, i.e.,a sheet barrier treatment, a mesh barrier, and no barrier treatment. Results showed that the growth of Amorpha fruticosa was suppressed without root barrier, leading to lower biomass and N acquisition than those with mesh and sheet barrier; the biomass and N acquisition of Vertiveria zizanioides and soybean without root barrier were the highest in Vertiver intercropping system. The 15N abundance is higher in soybean and A.futisoca with mesh barrier, but 15N abundance is higher in Vertiver without root barrier, which suggested that the Vertiver is a stronger competitor in Vertiver / soybean intercropping system. N transfer from soybean to hedge species was obvious using 15N direct labeling methods, which suggested that competition between A. futisoca or Vertiver for nitrogen fertilizer was stronger. Interspecific inhibition did exist in A. futisoca-soybean intercropping, and the growth of A.futisoca and soybean were suppressed; the complementary nitrogen use did exist in Vertiver-soybean intercropping, and both competition and facilitation occurred in Vertiver-soybean intercropping which enhanced the growth of Vertiver and soybean.

**Key words**: hedge; soybean; intercrops; root; nitrogen; 15N

**4 Influence of Veliveria zizanioides, Alfalfa and Clover on Soil Saliniazation**

QIU Qing-hua et al (Yili Normal College, Yining, Xinjiang 835002)

**Abstract** The research aimed to contrast the ability of the salinity absorbancy of Veliveria zizanioides, alfalfa and clover from the soil. [Method] Veliveria zizanioides, alfalfa and clover that grew in the same soil were irrigated regularly with the different rank NaCl solution or K2CO3 solution. The observation was carried out for five months. The introduction survival rate, the minute tiller rate, the biomass accumulates rate and the salt content in adult plant of Veliveria zizanioides, alfalfa and clover were analyzed. And the salinity quality and ability were contrasted. [Result] The salinity absorbancies of Veliveria zizanioides and alfalfa from the soil were strong. And that of alfalfa was stronger than that of Veliveria zizanioides, but the salinity absorbancy of clover from the soil was weak. [Conclusion] The salinity absorbancy of Veliveria zizanioides, alfalfa and clover from soil was related with the salinity content of soil, and the salinity absorption from soil was selective.

**Key words** Veliveria zizanioides; Alfalfa; Clover; Salinity

**5 Study on Abilty of Soil Saliniazation Degradation of Veliveria zizanioides, Alfalfa and Clover**

DENG Shao-yun et al (Yili Normal College, Yining, Xinjiang 835000)

**Abstract** The research aimed to study the ability of soil saliniazation degradation of Veliveria zizanioides, alfalfa and clover. [Method] The different rank NaCl solution or K2SO4 solution was irrigated to cultivate Veliveria zizanioides, alfalfa and clover that had grown in the same soil. The statistical analysis was made on Veliveria zizanioides survival rate and minute tiller rate and the biomass accumulates rate and salt content in adult plant of Veliveria zizanioides, alfalfa, clover, and the salt’s reduction of the soil. And the quality and ability of the introduction cultivated Veliveria zizanioides, alfalfa and clover absorbing and degrading the salt in the soil were determined. [Result] The salinity degradation of Veliveria zizanioides, alfalfa from the soil was strong, and that of alfalfa was stronger than that of Veliveria zizanioides, but the salinity degradation of clover from the soil was...
The salinity degradation of *Veliveria zizanioides*, alfalfa and clover from soil was related with the salt content of soil, and the salinity degradation of *Veliveria zizanioides*, alfalfa and clover was selective.

**Key words** *Veliveria zizanioides*; Alfalfa; Clover; Salinization degradation

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### 6 Main Effect and Consideration on Soil and Water Conservation Monitoring of Hu’nan Province

**BAO Wen, CHENGuo-yu, FU Zheng-liang**

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**Abstract:** The paper summarized the effect of soil and water conservation monitoring achieved by Hu’nan in recent years and elaborated the existing problems of disunity of positioning of soil and water conservation monitoring agency, unreasonable layout of monitoring sites and not standard soil and water conservation monitoring in development projects in addition to deficient certification system of monitoring results and difficult implementation of monitoring funds. It puts forward the development consideration for the next step of soil and water conservation monitoring of Hu’nan Province, i.e. to make clear direction of development and further strengthen the monitoring team building; to prepare monitoring plans and make steady progress of soil and water conservation monitoring; to finalize working funds and ensure the soil and water conservation monitoring on the rail; to perfect the monitoring network and optimize the layout of monitoring sites and to establish evaluation index system and standardize soil and water conservation monitoring.

**Key words:** soil and water conservation monitoring; problems; consideration; Hu’nan Province

### 7 Study on Restoring and Amelioration Function of *Veliveria zizanioides* on Salt or Alkaloid Soil

**QIU Qing-hua, DENG Shao-yun**

*(Yili Normal College, Yining, Xinjiang 835000)*

**Abstract:** *Veliveria zizanioides* was used as test material, through artificially compounding soil with NaCl solution or the K2CO3 solution in certain density, the author of this article had made the statistical analysis of the survival rate and minute tiller rate and biomass accumulates rate of *Veliveria zizanioides*, and of the salt content of in soil or in adult plant of *Veliveria zizanioides*, and had further calculated the salinity quality in the cultivated *Veliveria zizanioides* by absorbed from soil, and the ability that the cultivated *Veliveria zizanioides* absorbs salt and alkali from soil, and the quality of NaCl or K2CO3 reduced in the soil. The results indicated that the saline absorbancy of *Veliveria zizanioides* from the soil was strong, and the absorbancy of NaCl was more strong than the absorbancy of K2CO3 for the *Veliveria zizanioides* from the soil, but as for the reduction of salt and alkali in soil, the reduction of K2CO3 was more easy than NaCl. And *Veliveria zizanioides* be regarded that had function of restoring and meliorating salt or alkaloid soil in certain degree.

**Key words:** *Veliveria zizanioides*; salt or alkaloid soil; restore and ameliorate; study

### 8 Experimental Study on *Veliveria Zizanioides* Degrading Soil Salinization

**DENG Shao-yun, QIU Qing-hua**

*(Yili Normal College, Yining 835000, China)*

**Abstract:** With the different rank NaCl solution or the K2CO3 solution regular quota irrigation introduction cultivation *Veliveria zizanioides*, the author of this article had done three month experimental study observation, and had made the statistical analysis *Veliveria zizanioides*’s the introduction survival rate and Minute tiller rate and biomass accumulates rate salt content in adult plant of *Veliveria zizanioides*, and further determined has calculated in the introduction cultivated *Veliveria zizanioides* absorption soil the salinity quality and ability. The experimental study indicated that the salinity absorbancy of *Veliveria zizanioides* from the soil is strong, the *Veliveria zizanioides*
be regarded that the salinity absorbancy from soil is relate with the salt content of soil, and simultaneously, the salinity absorption from soil of Veliveria zizanioides is selective. In the end of this article, the author had pointed out further studies direction and forecast.

**Key words:** Veliveria zizanioides; soil salinization; degrade