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Linkages between leaves fresh biomass of (*Senecio* L.) and elevation in *Shan county*

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Abstract
A vital plant species (*Senecio L.*) not only is a vital multilevel functional medicinal material of indications of the respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis, dysentery, but also it is a widely distributed wide plant species. This plant species is widely distributed elevation from 500m to 1500m in six landscapes in *Shan County* of China. However, understanding dynamics of leaves fresh biomass is difficult along elevation. Herein showed that linkages between leaves fresh biomass of species and elevation is a significant positive connection from 500m to 1000m (P<0.01) as well as linkages between leaves fresh biomass of species to elevation is a significant negative connection from 1000m to 1500m(P<0.01). Herein provides six types and eco-adaptation for finding new species. Therefore, this study has theoretical and the key practical significance for plants protection along elevation and environmental gradient over the spatial-temporal-environmental-disturbance scales (STEDS) in interdisciplinary research from species diversity, ecosystems diversity and landscape diversity.

Keywords: leaves fresh biomass; elevation; relationship; eco-adaptation; eco-functional value; medicinal plant

Introduction

Leaves fresh biomass is effect medical plants and sustainable evolution along elevation scale. Natural environmental and plantation factors often integrated effects of the human activities and acid rain on medicinal plant species by the research of process for deposition of thin films [1-3]. But medicinal plant functional more traits may be finding through key physiological characters of antireflection coatings and ecological functional traits along elevation [4-7]. Using plant leaf oxide films technological tools [8-10], scientists explain that multilevel functional traits of medical species [11, 12] and medical plant communities [13, 14] by dynamic framework model [15] for food chains [16].

For instance, dynamics of community's height [17], community's total trunk volume [18], plant community's tree individual number [19], plant individual specie's and plant communities' crown volume [20, 21] of medicinal plant (*Sophora japonica*) along elevation. Although limits to local agricultural landscape area for protecting more natural landscapes [22] (e.g., grasslands, wetlands, water and forests) or some half natural landscapes (e.g., green ecological urban and beautiful green countryside) areas for sustainable medical plant species, but dynamics of total biomass [23], total fresh biomass [24], vegetation coverage [25], average height [26], roots cuticle biomass [27], leaf -stalk biomass [28], stems cuticle biomass [29], species pair's co-dominance abundance dominancy [30], Important Value [31], moisture content [32] of (*Cremastra Appendiculata*) also deeply research.

Therefore, it is a vital topic issues that the relationship between gene level and medical plant roots cuticle functional traits [33, 34], as well as dynamics of roots cuticle biomass [35], fresh roots biomass [36], stems cuticle biomass [37] associations with daily solar radiation for human cognitive [38] medical plant [39], especially, the risk assessment and early warning mechanism (e.g., watersheds areas) [40, 41]. So, herein shows linkages between leaves fresh biomass of this plant and elevation.

Typical environmental condition, situation of typical vegetation and methods of research

Study area is local in three typical zones: firstly, evergreen vegetation of north subtropical zone; secondly, evergreen and deciduous coniferous and broad-leaved mixed forest of north subtropical and warm temperate transition; thirdly, deciduous vegetation of warm temperate zone in Earth. Thus, this area is local in evergreen and deciduous coniferous and broad-leaved mixed forest in north subtropical and warm temperate transition in *Shan County* of China at STEDS (Figure 1).

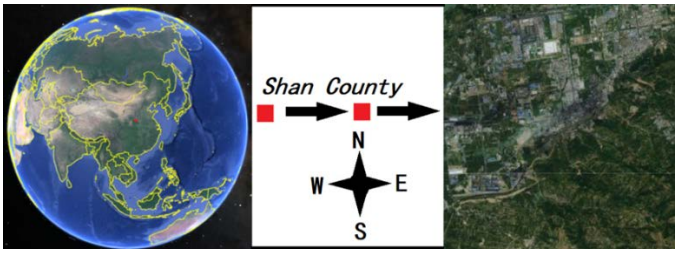

Fig 1: A Digital Cadaster Map of Typical Location in *Shan County* of China on Earth.

There is a long-time investigation linkage between medicinal plant species leaves fresh biomass to elevation from 2005 to 2019. Investigation of "big data" included that leaves fresh biomass of medicinal plant or other eco-index of medicinal plant species along elevation over STEDS [42, 43].

So, there is the relation between leaves fresh biomass of (*Senecio L.*) and elevation, as well as there is a series of six landscapes

areas eco-adaptation of leaves fresh biomass of (*Senecio L.*) by the "big data" of ecological investigation, qualitative analysis, and quantitative statistics, human cognitive ecological linguistic rules, scientific theories and ecosystem space planning methods.

Results

Based on "big data" of plant investigation, this species is a widely distributed wide species along elevation from 500m to 1500m. A key species (*Senecio L.*) is a widely distributed along the different elevation from 500m to 1500m in *Shan County* (Figure. 2). However, understanding the elevation effect on the linkage between leaves fresh biomass of this plant species and elevation is difficult, because elevation influences plant biomass [43], bryophyte and lichen biomass [44], wood biomass [45], mushroom and diversity biomass [46], production of medicinal plant species [47].

Applying the dynamics of "big data" investigation, this work suggested there are five rules:

Firstly, herein showed that not only it is the increasing of (*Senecio L.*) leaves fresh biomass with the increasing of elevation from 500m to 1000m, and, but also it is the decreasing of (*Senecio L.*) leaves fresh biomass with increasing of elevation gradient from 1000m to 1500m (Figure 3).

Table 1: Leaves Fresh Biomass of this Medical Plant Species Association with Elevation

Leaves Fresh Biomass along Elevation	Leaves Fresh Biomass of this Plant Species
Elevation From 500 to 1000	0.985**
Elevation From 1000 to 1500	-0.987**

Note: *, $P<0.05$; **, $P<0.01$.

Secondly, this study explained that it is a significant positive connection between (*Senecio L.*) leaves fresh biomass and elevation from 500m to 1000m ($P<0.01$), as well as it is a significant negative connection between leaves fresh biomass of (*Senecio L.*) and elevation from 1000m to 1500m in *Shan County* of *Henan Province* of China over STEDS ($P<0.01$) (Table. 1) (Figure. 2).

Thirdly, this research shows the best areas ecological adaptation of (*Senecio L.*) from 500m to 1500 in *Shan County* of China. Because there are results that there are not only different natural environmental factors, but also it is the dynamics of different elevation environmental factors from 500m to 1500m by the dynamics of leaves fresh biomass of this medical species (Figure. 1, 2).

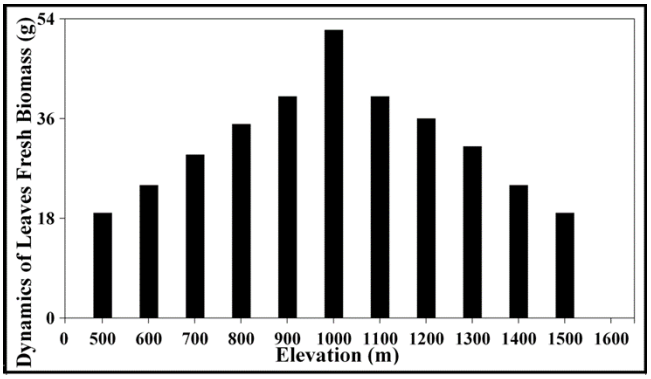

Fig 2: Dynamics of (*Senecio L.*) Leaves Fresh Biomass along Elevation Gradient

Fourthly, this research proposed that the medicinal plant species (*Senecio L.*) is local in the six typical landscape types (forests, mixed between forests and grassland, mixed between forests and wetland, mixed between forests and river, mixed between forests and eco-urban, mixed between forests and countryside) by "big data" of this plant leaves fresh biomass investing along elevation, because there may be results that there are not only dynamics of natural environments, there are but also dynamics of climate environmental factors from 500m to 1500m along elevation gradient.

Fig 3: Total Structures of Medical Plant Species (*Senecio L.*) by Long-time Investigation

Fifthly, the typical medical plant species (*Senecio L.*) not only is a vital functional medicinal material of indications of treating to respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, dysentery and enteritis, but also it is belonging to *Compositae* families of *Senecio* races of Discotyledoneae in Angiospermae, especially, total structures of (*Senecio L.*) (Figure. 3).

Thus, this research found a series of typical areas ecological adaptation of plant (*Senecio L.*) of indication of treating respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis, dysentery along elevation gradient, as well as there is linking of the medical plant species (*Senecio L.*) leaves fresh biomass and elevation gradient in *Shan County* of China (Figure. 2).

Conclusion and Discussion

The respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, dysentery and enteritis always influence public health, which often led human died. But understanding dynamics of medicinal plant species is difficult issues, for instance, molecular dynamics [48], evolutionary dynamics [49] and indigenous medical plant [50]. So, finding a vital multilevel functional medicinal plant (*Senecio L.*) of indications of respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis and dysentery not only is a key value plant species, but also treating many people's diseases or saving human. As such, it is a key ecological adaptation that (*Senecio L.*) were found from 500m to 1500m in *Shan County* of *Henan*

Province of China. And this research suggested three linkages between leaves fresh biomass of (*Senecio L.*) and elevation at STEDS:

1. This work showed that it is an increasing of (*Senecio L.*) leaves fresh biomass with enhancing of elevation from 500m to 1000m; it is a decreasing of (*Senecio L.*) leaves fresh biomass with increasing of elevation from 1000m to 1500m (Figure 2). It is a significant positive connection between (*Senecio L.*) leaves fresh biomass and elevation from 500m to 1000m (P<0.01) as well as it is a significant negative connection between (*Senecio L.*) leaves fresh biomass and elevation from 1000m to 1500m along elevation gradient over STEDS in *Shan County* (P<0.01) (Table 1).
2. This research provides six landscape types (forests, mixed landscape between forests and grassland, mixed landscape between forests and wetland, mixed landscape between forests and river, mixed landscape between forest and eco-urban, mixed landscape between forests and green beatified countryside), as well as there is a series of ecological adaptation of landscape areas (for instance, the best areas ecological adaptation of (*Senecio L.*) from 500m to 1500m) for finding this plant (*Senecio L.*) by the dynamics of (*Senecio L.*) leaves fresh biomass along elevation.
3. (*Senecio L.*) not only is a vital multilevel functional medicinal material of indications of treating to respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, dysentery and enteritis, but also it is belonging to *Compositae* families of *Senecio* races of Discotyledoneae in Angiospermae, as well as it is widely distributed wide specie by the "big data" investigation of (*Smilax scobinicaulis*) leaves fresh biomass in *Shan County* of China (Figure. 1, 2, 3).

Indeed, better regional regulators and local government need better planning and regulation many medicinal plant species sustainability [51] of ecosystems by researches on the key biomass of medicinal plants [52] along elevation with dynamics of plant diversity in the global, regional and landscapes natural ecosystem types with the ways "big data" investigation, scientific quantitative statistics [53] by landscape stability and sustainable medical plant diversity production [54]. Local government planner will protects habitats of this medical plant species (*Senecio L.*) by the lands eco-restoration [55, 56] and integrated strategy technology [57] for avoiding plant species loss [58] in six landscape areas of this medical ecological adaptation. Because of upgrading protected areas is a way with protection wild medical plant species [59] for future eco-socioeconomic services [60].

This research has a vital theoretical and practical significance for the reasonable protection of (*Senecio L.*) along elevation gradient, because this plant species not only is an important widely distributed wide medicinal material pant by treating infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis and dysentery, but also is five rules by linking (*Senecio L.*) leaves fresh biomass to elevation. Thus, herein has theoretical-practical significance for the multi-functional values by the linkages between leaves fresh biomass of (*Senecio L.*) and elevation along environs, then, the planner needs integrated conservation priority areas from investments in natural capital.

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