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Review Article

Relation between Leaves Dry Biomass of Plant (*Senecio L.*) and Elevation in *Shan County*

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Abstract: Medical species (*Senecio L.*) not only is key multilevel functional medicinal material of indications of 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 forest landscapes and vegetation ecosystems in *Shan County* of China. However, understanding leaves dry biomass of this species is difficult along elevation. This work explained that the relation between leaves dry biomass of this species and elevation is a significant positive connection from 500m to 1000m (P<0.01) as well as the links between leaves dry biomass of this species and elevation is a significant negative connection from 1000m to 1500m (P<0.01). This study provides six ecosystem types and a series of areas ecological adaptation for finding new medicinal species. Therefore, this study has vital theoretical and practical significance for medicinal plant protection along different elevation and environmental gradient.

Keywords: Leaves dry biomass; elevation; connection; areas ecological adaptation; plant medicinal species.

INTRODCTION

Leaves dry biomass is influences medical plant species growth of pharmacy and pharmacology. Natural environmental and plantation factors often integrated effects of the human activities and acid rain on medicinal plant species by 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 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], tree community's total trunk volume [18], plant individual number [19], plant individual specie's and plant communities' crown volume [20, 21] of plant (*Sophora japonica*) along elevation. Although limits to 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 dry biomass [23], total fresh biomass [24], vegetation coverage [25], plant average height [26], roots cuticle biomass [27], leaf -stalk biomass [28], stems cuticle biomass [29], pair's co-dominance abundance dominancy[30], Important Value [31] and moisture content [32] of (*Cremastra Appendiculata*) also deeply research.

Therefore, it is a vital issues that the relationship between gene level and plant roots cuticle functional traits [33, 34], as well as the 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, risk assessment and early warning mechanism of typical landscape areas (e.g., watersheds) [40,41] over STEDS. In short, herein reveals the relation of leaves dry biomass of medical plant species (*Senecio L.*) and elevation in *Shan County* of China.

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).

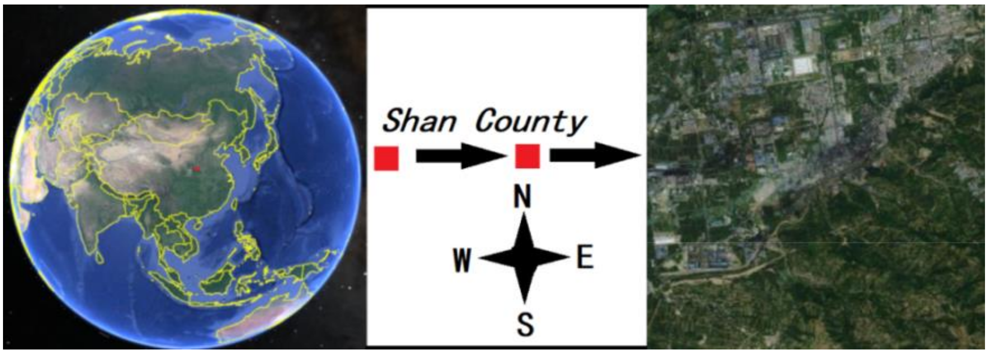

Fig-1: A Digital Cadaster Map of Typical Location in *Shan County* of China on Earth

There are long-time investigation of connections among leaves dry biomass of medicinal plant species and elevation from 2005 to 2019. Investigation of "big data" included that leaves dry biomass of medicinal plant species or other ecological index of medicinal plant species along the different elevation and environmental gradient by the previous key research over STEDS [42, 43].

Thus, there is the links between leaves dry biomass of (*Senecio L.*) and elevation, as well as there is a series of best natural landscapes areas ecological adaptation of leaves dry biomass of this plant species by the ecological "big data" of ecological investigation, qualitative analysis, and quantitative statistics, human cognitive ecological linguistic rules, theories, methods and ways.

Results based on quantitative statistics and qualiative analysis

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. However, understanding the elevation effect on the linkage between leaves dry biomass of this plant and elevation is very difficult, because elevation effect on plant root biomass [43], bryophyte and lichen biomass [44], wood biomass [45], and mushroom biomass as well as biomass diversity [46], production of medicinal plant species [47].

Using the dynamics of "big data" investigation, this research suggested there are four rules: Firstly, herein showed that it is not only the increasing of leaves dry biomass of (*Senecio L.*) with the increasing of elevation from 500m to 1000m, and there are but also decreasing of leaves dry biomass of (*Senecio L.*) with increasing of elevation from 1000m to 1500m (Figure 2, 3).

Table-1: Leaves Dry Biomass of this Medical Plant Association with Elevation Gradient

Leaves Dry Biomass along Elevation	Leaves Dry Biomass of This Medical Plant
Elevation From 500 to 1000	0.994**
Elevation From 1000 to 1500	-0.989**

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

Secondly, this study explained that there is the significant positive connection between leaves dry biomass of (*Senecio L.*) and elevation from 500m to 1000m (P<0.01), as well as there is the significant negative connection between leaves dry biomass of (*Senecio L.*) and elevation from 1000m to 1500m in *Shan County* of China over spatiotemporal scale (P<0.01) (Table 1).

Thirdly, this research provides a good areas ecological adaptation of (*Senecio L.*) from 500m to 1500 in *Shan County* of China. Because there are results that there are not only dynamics of different air environmental factors, there are but also dynamics of different soil environmental factors from 500m to 1500m by dynamics of leaves dry biomass of this plant species (Figure 1).

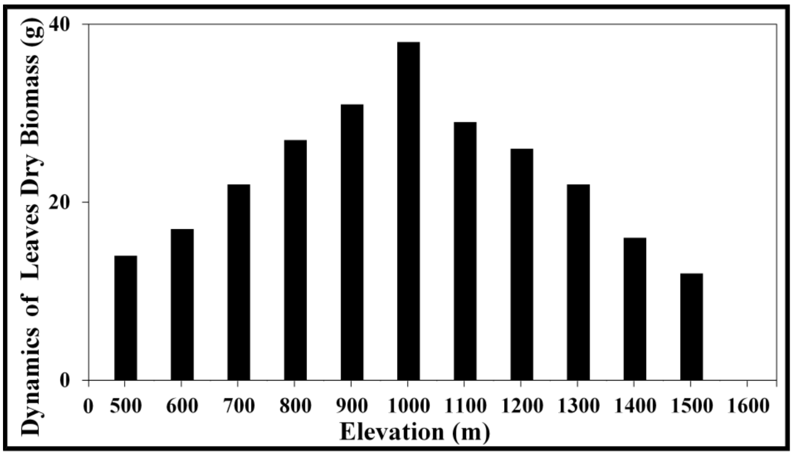

Fig-2: Dynamics of Leaves Dry Biomass of *(Senecio L.)* along Elevation Gradient

Fourthly, this research proposed that the medicinal plant species (*Senecio L.*) is local in the six typical ecosystem types (forests ecosystem, mixed ecosystem between forestation and grassland, mixed ecosystem between forests and wetland, mixed ecosystem between forests and river, mixed ecosystem between forests and eco-urban, mixed ecosystem between forests and rural settlement) by the ecological "big data" of leaves dry biomass of medicinal plant species investing along elevation, because there may be results that there are not only dynamics of air environments, there are but also dynamics of soil 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 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 (Figure 3). The best eco-adaptation areas of medical plant species (*Senecio L.*) is location in 1000m, the better eco-adaptation areas of medical plant species (*Senecio L.*) is location from 800m to 1200m, and good eco-adaptation areas of plant species (*Senecio L.*) is location from 500m to 1500m along elevation gradient.

Thus, this research found a series of typical (good, better, best) areas ecological adaptation of plant (*Senecio L.*) of indications of respiratory tract infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis, dysentery along elevation gradient, as well as there is the linkage between leaves dry biomass of this typical medical plant species (*Senecio L.*) and elevation at STEDS.

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 some individual human-lived. As such, it is a research that (*Senecio L.*) were found from 500m to 1500m in *Shan County* of *Henan Province* of China. And this research suggested three rules between leaves dry biomass of (*Senecio L.*) and elevation:

1. This work suggested that there is increasing of leaves dry biomass of (*Senecio L.*) with increasing of elevation from 500m to 1000m, as well as there is decreasing of leaves dry biomass of (*Senecio L.*) with increasing of elevation from 1000m to 1500m (Figure 2). There is the significant positive connection between leaves dry biomass of (*Senecio L.*) and elevation from 500m to 1000m (P<0.01) as well as there is the significant negative connection between leaves dry biomass of (*Senecio L.*) and

elevation from 1000m to 1500m (*P*<0.01) (Table 1).

2. This research provides six vegetation types (forests vegetation, mixed vegetation between forests and grassland, mixed vegetation between forests and wetlands, mixed vegetation between forests and rivers, mixed vegetation between forests and eco-urban, and mixed vegetation between forests and green beatified countryside), as well as there is a series of eco-adaptation of landscape areas (the best, the better and good areas eco-adaptation of this plant from 500m to 1500m) for finding this plant (*Senecio L.*) by dynamics of leaves dry biomass (*Senecio L.*) 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 leaves dry biomass of (*Smilax scobinicaulis*) in *Shan County* of China (Figure 1, 2, 3).

CONCLUSION

This research has a vital theoretical and practical significance for the reasonable protection of (*Senecio L.*) along elevation gradient, because this medical plant species not only is an important widely distributed wide medicinal material pant with treating infections, tonsillitis, pharyngitis, pneumonia, conjunctivitis, enteritis, dysentery, but also there are three rules by the links between leaves dry biomass of (*Senecio L.*) and elevation. Indeed, the better regional regulators and local government need better planning and regulation many medicinal plant species sustainability [51] of ecosystems by the researches on leaves dry biomass of medicinal plants [52] along elevation and environments with the dynamics of medical plant species diversity in the global, regional, local and landscapes and natural ecosystem types with the way "ecological big data" investigation, scientific quantitative statistics [53] by sustainable medical plant diversity production [54].

Abbreviation: STEDS, the spatial-temporal-environmental-disturbance scales.

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