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LINKS BETWEEN SPECIES PAIR'S CO-DOMINANCE ABUNDANCE DOMINANCY OF (CREMASTRA APPENDICULATA) OF BIOMEDICAL AND PHARMACEUTICAL PLANT AND ELEVATIONS

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ABSTRACT
Not only (*Cremastra appendiculata*) of treating lumbago and arthritis is a biomedical and pharmaceutical plant species, but also it is a widely distributed wide species. However, it is unknown that the links between this species pair's co-dominance abundance dominancy and elevation. This key species is widely distributed elevation from 500m to 3100m in *Mei County* by this species investigation "big data" with difficult work. This research explained that links between species pair's co-dominance abundance dominancy of the species and elevation is the significant positive correlation from 500m to 1500m (P<0.01), and the links between this species pair's co-dominance abundance dominancy and elevation is the significant negative correlation from 1500m to 3100m (P<0.01). This study provides six near-natural ecosystem types and adaptation areas for finding new medical species. Thus, this research has vital theoretical and practical significance for medicinal plant protection along elevation at the spatial-temporal-environmental-disturbance scales (STEDS).

KEYWORDS: Biomedical and pharmaceutical plant; species pair's co-dominance abundance dominancy; elevation; adaptation areas, STEDS.

INTRODUCTION
Many researches has assessed correlations among co-dominance abundance dominancy of this species pairs (biodiversity, height, biomass, crown volume, Important Values, et al.) of species and elevation from co-dominance abundance dominancy of species pairs (biomass, biodiversity, height, crown volume, et al.) of medicinal species perspective (Table 1)[1-11] for better future of human health (ecosystems).[6-11] However, biomedical and pharmaceutical plant species with the history spanning over 1500 years, and adaptation areas of species pair's co-dominance abundance dominancy of (*Cremastra appendiculata*) are unknown, and cognitive ecological theory of the links between species pair's co-dominance abundance dominancy of this species and elevation can be unknown12-16 in the different near-natural ecosystem at the STEDS in *Mei County* of China.

(*Cremastra appendiculata*) not only is vital biomedical and pharmaceutical plant species of treating lumbago and arthritis, but also is widely distributed wide specie in *Mei County* of China. This specie is belonging to *Cremastra* genus of Orchidaceae families of Monocotyledoneae in Angiospermae. Understand species pair's co-dominance abundance dominancy of this species is unknown. This work not only explained that there is a correlation between elevation and species pair's co-dominance abundance dominancy of this plant species, but also explained that this species is a vital biomedical and pharmaceutical plant species of treating lumbago and arthritis.

Thus, understanding these medical values of medicinal plant spices, as well as the links between co-dominance abundance dominancy of species pairs of different areas ecological adaptation and elevation is a vital ecological rule along elevation and environmental gradient in the landscapes. Menwhile, there are some vital rules of those correlations between co-dominance abundance dominancy of this species pairs and elevation along elevation gradient in *Mei County* of China.

Table1: Links between vegetation coverage (biodiversity, biomass, height) and elevation.

Links between medicinal plant structure number (biomass, height) and elevation	Authors
Links between elevation environments and numbers of plant species at STEDS.	Liao, et al., 2010[1].
Links between biomass of medicinal herb and elevation in wetland landscape.	Liao, et al., 2011a[2].
Links between plant functional number and elevation in forest landscape.	Liao, et al., 2011b[3].
Links between plant functional number and elevation in near-natural forests.	Liao, et al., 2014a[4].
Links between herbs number and disturbance of different elevation in wetland.	Chen, et al., 2019[5].
Links between number of medicinal tree species and elevation in forestation.	Liao, et al., 2019a[6].
Links between number of medicinal tree trunk volume and elevation at STEDS.	Liao, et al., 2019b[7].
Links between height of medicinal tree and elevation in the natural landscape.	Liao, et al., 2019c[8].
Links between number of tree community crown volume and elevation in forest.	Liao, et al., 2019d[9].
Links between number of tree individual specie's crown volume and elevation.	Liao, et al., 2019e[10]
Links between herbs number and different disturbance of different elevation.	Liao, 2014 b[11].

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

Typical area is local in three 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, our research area is local in evergreen and deciduous coniferous and broad-leaved mixed forest in north subtropical and warm temperate transition in *Mei County* of China (Figure 1).

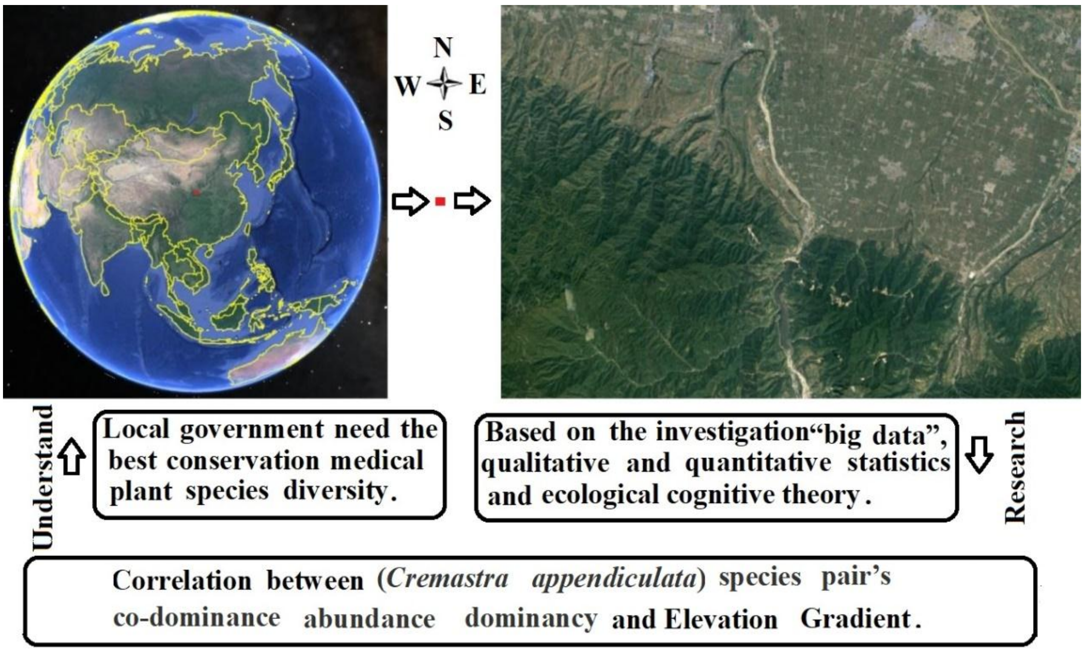

Figure 1: A Digital Cadaster Map and Research Methods of Typical Location in *Mei County* of China of Earth.

There are long-time investing the links between co-dominance abundance dominancy of this medicinal species pairs and elevation from 2005 to 2019. Investigation of "big data" included that co-dominance abundance dominancy of this species pairs or other index of medicinal plant species along different elevation and environmental gradient by our previous researches.[1-12]

Thus, there is a vital rule of links between co-dominance abundance dominancy of this species pairs of medicinal plant species and elevation, as well as there is a series of (good, better, best) natural landscapes areas ecological adaptation of elevation of this medical plant species along elevation and environments by "big data" of ecological investigation, qualitative analysis, quantitative statistics, cognitive ecological linguistic rules, theories, methods and ways.[4-16]

RESULTS AND ANALYSIS

Based on "big data" of plant investigation, this species is a widely distributed wide species along elevation from 500m to 3100m. (*Cremastra appendiculata*) is a widely distributed along the different elevation from 500m to 3100m in *Mei County* of China. However, understanding the elevation effect on the links between this species pair's co-dominance abundance dominancy and elevation is very difficult, because elevation affect dynamics of species pairs co-dominance abundance dominancy (biodiversity, biomass, functional groups height, number, et al.).[2-20]

Using the dynamics of "big data" investigation, this research suggested there are four rules:

Firstly, this research suggested that there is not only increasing of (*Cremastra appendiculata*) species pairs co-dominance abundance dominancy with increasing elevation from 500m to 1500m, as well as there is but also decreasing of this species pairs co-dominance abundance dominancy of (*Cremastra appendiculata*) with increasing of elevation from 1500m to 3100m in *Mei County* (Figure 2). Thus, there are two dynamic processes of (*Cremastra appendiculata*) species pairs co-dominance abundance dominancy along the different elevation gradient in *Mei County*.

Secondly, this study explained that there is a significant positive correlations between species pairs co-dominance abundance dominancy and elevation from 500m to 1500m (P<0.01), as well as there is the significant negative correlations between co-dominance abundance dominancy of this species pairs and elevation from 1500m to 3100m (P<0.01) at STEDS (Table2).

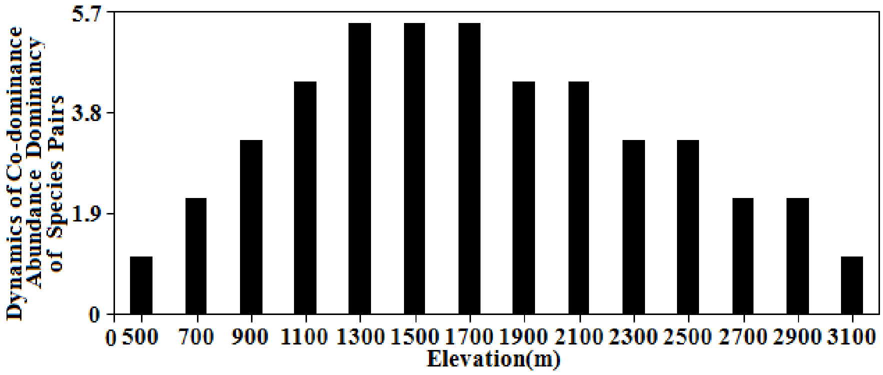

Figure 2: Dynamics of species pair's Co-dominance Abundance Dominancy along Elevation.

Thirdly, this research provides a good areas ecological adaptation of (*Cremastra appendiculata*) from 500m to 3100 in *Mei County* in China. Meanwhile, this research proposed that there is not only the better area ecological adaptation of (*Cremastra appendiculata*) from 1000m to 2000m, there is but also the best areas ecological adaptation of (*Cremastra appendiculata*) from 1300m to 1700m; because there are results that there are not only dynamics of air environmental factors, there are but also dynamics of soil environmental factors from 500m to 3100m by dynamics of co-dominance abundance dominancy of this species pairs along elevation at the STEDS (Figure2).

Table2: Links between Species Pair's Co-dominance Abundance Dominancy of (*Cremastra appendiculata*) and Elevation in Mei County of China.

Elevation Gradient (m)	Elevation from 500m to 1500m	Elevation from 150m to 3100m
Species Pair's Co-dominance Abundance Dominancy of (*Cremastra appendiculata*)	0.982**	-0.982**

Note: **, P<0.01.

Fourthly, this research proposed that medicinal plant species (*Cremastra appendiculata*) is local in the six near-natural ecosystem types (near-natural ecosystem of forestation, near-natural ecosystem of mixed between forestation and grassland, near-natural ecosystem of mixed between forestation and wetland, near-natural ecosystem of mixed between river and forestation, near-natural ecosystem of mixed between forestation and urban, near-natural ecosystem of mixed between rural settlement and forest) by "big data" of co-dominance abundance dominancy of this species pairs investigation along elevation from 500m to 3100m, because there is results that there are not only dynamics of air environments, there are but also dynamics of soil environments from 500m to 3100m by the dynamics of co-dominance abundance dominancy of this species pairs.

Thus, this research found a series of typical (good, better, best) areas ecological adaptation of (*Cremastra appendiculata*) of treating lumbago and arthritis along elevation gradient, as well as there is the links between Co-dominance abundance dominancy of this species pairs and elevation.

CONCLUSION AND DISCUSSION

Co-dominance abundance dominancy of this species pairs is a key big data. It effect on many functions among which anchorage of the medical plant species and uptake of water and nutrients are the most vital ones. Understanding medicinal species is very difficult at STEDS.[1-8, 21-27] This research suggested three rules between the co-dominance abundance dominancy of (*Cremastra appendiculata*) pairs and elevation along environmental gradient in *Mei County* of China:

1. This research suggested that there is increasing of co-dominance abundance dominancy of this species pairs with increasing of elevation from 500m to 1500m, as well as there is decreasing of co-dominance abundance dominancy of this species pairs with increasing of elevation from 1500m to 3100m (Figure 2). There is the significant positive correlation between co-dominance abundance dominancy of this species pairs and elevation from 500m to 1500m (P<0.01) as well as there is the significant negative correlation between co-dominance abundance dominancy of this species pairs and elevation from 1500m to 3100m along elevation gradient (P<0.01) (Table 2).
2. This research provides six typical near-natural vegetation ecological ecosystem types (forest, mixed between forest and grassland, mixed between forest and wetland, mixed between forest and river, mixed between forest and urban, mixed between forest and rural settlement), as well as there is a series of areas ecological adaptation (a good areas ecological adaptation from 500m to 3100, the better area ecological adaptation from 1000m to 2000m, the best areas ecological adaptation from 1300m to 1700m) for finding the key dynamic processes of this species pairs co-dominance abundance dominancy along the different elevation gradient at the STEDS (Figure 2).
3. (*Cremastra appendiculata*) not only is a vital medicinal material of treating lumbago and arthritis,but also it is belonging to *Cremastra* genus of Orchidaceae families of Monocotyledoneae in Angiospermae, as well as it is widely distributed wide specie by the "big data" long-time investigation of co-dominance abundance dominancy of this species pairs in *Mei County*.

So, this research has a vital theoretical and practical significance for the reasonable protection of (*Cremastra appendiculata*) along elevation gradient in the near-natural ecosystems, because this plant species not only is an important widely distributed wide medicinal material plant by treating lumbago and arthritis, but also there are two correlation rules by the links between this species pair's co-dominance abundance dominancy and elevation gradient, as well as there are two key dynamic processes (increasing and reducing) of (*Cremastra appendiculata*) of biomedical and pharmaceutical plant species along different elevation gradient in *Mei County* of China at STEDS.

However, many the better regional planners and local government need the better planning and regulation biomedical and pharmaceutical plant species management sustainability in plant communities. Indeed, there are vital researches only research on biodiversity, height, biomass, number, structure, volume based on dynamics of the links among plants, elevation, environments in the different landscapes, regional, local, global near-natural vegetation ecological types.[1-15,28-40]

Therefore, it is the vital knowledge that correlation species pair's co-dominance abundance dominancy of (*Cremastra appendiculata*) of biomedical and pharmaceutical plant species and elevation, and the dynamic processes of this plant species along the different gradient, as well as functions of (*Cremastra appendiculata*) of biomedical and pharmaceutical plant species (such as treating lumbago and arthritis), ecological landscape adaptation areas of(*Cremastra appendiculata*) biomedical and pharmaceutical plant species, as well as six typical near-natural vegetation ecological ecosystem types of this plant species in this article. So, future work will research on ecological adaptation areas of different biomedical and pharmaceutical plant species, and the correlations between elevation and different biomedical and pharmaceutical plant species, and the different medical multifunction of a series of biomedical and pharmaceutical plant species, as well as the dynamic processes of biomedical and pharmaceutical plant species for the better future health of key near-natural vegetation ecological types to local human wellbeing at the STEDS.[41-49]

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