# Mulberry & Lycium Formula *Xie Bai San*

Origins: *Xiao Er Yao Zheng Zhen Jue*, by Qian Yi (Chien-yi), Song Dynasty, 1119 CE.

**Mulberry and Lycium Formula** *(Xie Bai San)* originated in the *Xiao Er Yao Zheng Zhen Jue (The Key to Medicines and Patterns for Children),* by Qian Yi (Chien-yi), in the Song Dynasty, 1119. Qian Yi (Chien-yi) is one of the few historical Chinese physicians celebrated as a master of pediatric medicine. His famous book, *The Key to Medicines and Patterns for Children,* is the origin for what remains one of the most frequently prescribed of all Chinese herbal formulas: **Rehmannia Six Formula** *(Liu Wei Di Huang Wan)*. One thing **Mulberry and Lycium Formula** has in common with its more famous sibling is that its application is no longer limited to children. Today, both formulas are prescribed to all ages, yet each remains safe for delicate constitutions.

## General Signs/Symptoms

This formula treats three distinct but inter-related patterns (See **Formula Discussion** below for full details on these patterns.): 1) constrained fire or heat in the lungs (*yù huǒ / yù rè* ), 2) lung fire *(fèi huǒ)*, and 3) latent heat *(fú rè)* in the lungs. There are many supporting signs and symptoms that indicate use of this formula, but the indispensable sign is a rapid pulse. If the pulse is not rapid, re-evaluate the pattern for the appropriate formula. General signs and symptoms of the correct patterns include: fine rapid pulse, dry mouth, thirst, irritability, a cough that is high and clear sounding with little phlegm, hot skin becoming more prominent in the late afternoon, and body aches. The tongue will be red, usually with a thin, dry, yellow coat. This formula is also appropriate when, after the acute phase of an upper respiratory febrile disease has passed, the patient continues to experience intermittent heat signs such as mild late-afternoon fever. This is an indication that there remains some heat in the lungs and that the lung yin has been compromised.

## Traditional Actions

1. **Disperses heat constraint in the lungs**
2. **Drains lung fire**
3. **Eliminates latent heat in the lungs**
4. **Stops cough and calms wheezing**
5. **Mildly releases the exterior**

## Ingredients

| Pinyin | Latin | English | Percent of Formula |
|---|---|---|---|
| *(Chao) Sang Bai Pi* (chief) | Mori (cortex) | White Mulberry Root Bark | 25% |
| *Di Gu Pi* (deputy) | Lycii (cortex) | Lycium Root Bark, Chinese Wolfberry Root Bark | 25% |
| *Dan Zhu Ye* (assistant) | Lophatheri (herba) | Lophatherum Reed | 14% |
| *Gan Cao* (assistant) | Glycyrrhizae (radix) | Chinese Licorice Root | 13% |
| *(Qing) Dan Dou Chi* (deputy) | Sojae (semen preparatum) | Prepared Soybean | 13% |
| *Zhi Mu* (assistant) | Anemarrhenae (rhizoma) | Anemarrhena Rhizome | 10% |

## General Indications / Modern Applications

- Asthma, hot-type/ acute infection
- Bronchial asthma
- Bronchiolitis
- Bronchitis
- Chest, stifling sensation in
- Conjunctivitis
- Cough
- Dry mouth
- Dyspnea (labored breathing)
- Fever, afternoon (mid to late)
- Fever, after acute phase of illness
- Flu-like symptoms, w/ lung heat or fire
- Halitosis
- Hemoptysis (coughing of blood)
- Herpes simplex
- Hives (urticaria)
- Influenza
- Measles, early stage
- Nosebleeds
- Pertussis/whooping cough
- Pneumonia
- Pulmonary tuberculosis
- Rosacea
- Shortness of breath
- Skin, steaming heat in
- Thirst
- Wheezing
- Whooping cough/ pertussis

### Formula Actions

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### Tongue

Red body or tip, possibly with dry yellow fur.

### Pulse

Rapid, usually fine.

### Contraindications / Cautions

Do not use to treat cold-type pathogens or when the pathogen is only in the exterior. Do not use in the absence of a rapid pulse. Use with caution when the patient has weak digestion.

### Dosage

Since this formula is primarily used for acute infections, it is most effective if dosed every 3 hours. Adult doses can be from 2-4 tablets every 3 hours. Reduce appropriately for children based on age and weight. Children 5 and older can easily handle 2 tablets every 3 hours. The source text recommends taking this formula before meals.

### Synergy of Ingredients

Qian Yi (Chien-yi) listed only four ingredients in his original formula. The main three are mulberry root bark *(sang bai pi)*, lycium root bark *(di gu pi)*, and licorice root (*gan cao* or *zhi gan cao)*. The fourth, rice *(jing mi)*, is frequently left out of prepared versions of the formula because it saves on the volume of the prepared formula and rice is readily available in the home and can be easily given to young children or patients with marked weakness of their digestion, if required. The actions of the remaining three ingredients are today frequently augmented with the addition of other substances.

It is no accident that the chief, mulberry root bark *(sang bai pi)*, and first deputy, lycium root bark *(di gu pi)*, are both cortices/root barks *(pi)*. Cortices are a type of skin and the lungs rule the skin; likewise, the condition of the skin is a mirror to the health of the lungs. Some herbs are said to "enter" the lung channel because their actions are harmonious with one or more of the actions attributed to the lung. But root barks *(pi)*, because they are the "skin" of the root, are thought to have a closer relationship to the lung than other plant parts. They don't just enter the lung channel and support lung function; they can enter into lung tissue. Besides their affinity for the lung and skin, root barks are light; they are said to "float" to the upper part of the body.

Because it is light, floating, and acrid, mulberry root bark *(sang bai pi)* disperses the lungs; because it is cold, what it disperses is heat; because it is sweet, it also protects and moistens the lung yin. There is an ancient saying about mulberry root bark *(sang bai pi)* that illustrates this point and the reason it is the chief herb of this formula: "Without *sang bai pi*, draining excess [heat] from the lung cannot succeed." The chief in this formula focuses on dispersing heat from constraint.

Lycium root bark *(di gu pi)* is the first deputy in **Mulberry and Lycium Formula** *(Xie Bai San)*. Its main functions in the formula are to eliminate the lurking/latent heat in the lungs, clear deficiency heat, and cool the blood. Like mulberry root bark *(sang bai pi)*, lycium root bark *(di gu pi)* is sweet and cold and acrid. Together, these two cortices eliminate both excess and deficiency heat with gentle dispersion; they guide the lung qi downward to stop cough and wheezing and restore the proper relationship between lung and kidney.

There has been lots of argument over the centuries as to whether **Mulberry and Lycium Formula** *(Xie Bai San)* should be contraindicated in the presence of an external pathogen. The fear is that both the chief and first deputy reach too deeply into the body

and would thus pull the external pathogen into the lung tissue—just the opposite of what one hopes to accomplish with this formula. The inclusion of a second deputy in the present formulation resolves that issue. Prepared soybean *(dan dou chi)* enters the lung, stomach, and kidney channels. It ascends and powerfully disperses the exterior. But it is also very effective at dispersing constrained heat above the diaphragm. It combines readily with mulberry root bark *(sang bai pi)* to disperse heat from constraint and with lycium root bark *(di gu pi)* to eliminate lurking heat and heat in the blood. Prepared soybean *(dan dou chi)* is also recommended for treating exterior patterns against a background of yin deficiency and for harmonizing the middle warmer.

The remaining three substances all function as assistants in the present formulation. Lophatherum *(dan zhu ye)* helps the chief to drain heat in the lungs through the urine. It directly addresses the *shen* agitation that inevitably manifests with lung fire, but it can do so gently. Anemarrhena rhizome *(zhi mu)* is included for both its heat-draining and moistening qualities. It assists the chief, mulberry *(sang bai pi)*, in draining fire from the lung and the 1st deputy, lycium *(di gu pi)*, in draining fire from the kidneys. It generates fluids to address thirst, and helps protect the yin of both lung and kidney.

Licorice root *(gan cao)* is included, not as a guide (neither the chief nor the first deputy require guidance) but as the third assistant. Rather than augment the actions of the chief or deputy like the other two assistants, licorice root *(gan cao)* is included mainly to protect and preserve. It is the only warm substance included in the formula, so it can help protect against the cold properties of all the other herbs. It helps supplement the spleen and lung qi, both of which may have become damaged by the fire or lurking heat. Licorice root *(gan cao)* moistens the lungs and assists the chief in draining fire.

## Formula Discussion

**Mulberry and Lycium Formula** *(Xie Bai San)* treats three main patterns: lung fire, latent heat in the lungs, and constrained heat in the lungs. An important feature of this formula is that it can disperse without drying. It is designed to be gentle enough to use with young children and the elderly, but effective enough that a single dose can begin to turn around a severe influenza infection in strong patients. The three patterns and their inter-relatedness are discussed below.

### *Yù* (Constraint)

The *Su Wen*, in Chapter 71, states that "for fire from constraint, effuse it," *(huǒ yù fā zhī)*. The word *fā*, translated here as "effuse" has its origin in archery and can also be translated as "disperse," "dispatch," or "release." *Fā* refers to the action on a bow that causes the arrow to fly. The *Su Wen* citation suggests that fire from constraint *(huǒ yù)* is characterized by a fixed location and to effectively treat it, one must "send it flying", so to speak.

It is "lodged", in the case of influenza, in the actual lung and bronchial tissue. By bonding with specific receptors, the influenza virus (among others) uses lung and bronchial tissue as a matrix for self-replication. In order to thrive, the virus imbeds itself in the tissue, which then functions as a protection around the virus. The viral pockets thus formed become mini furnaces while they replicate themselves. Meanwhile, the *wei* (defensive) qi heats up to try (unsuccessfully) to eliminate the pathogen. Up to the time of implantation, the pathogen is classified as "external"; after implantation, the pathogen is "constrained heat" and decidedly "internal". Constrained heat must be mobilized, moved out, dispersed, "effused" in order to be eliminated. Because the heat pathogen is lodged in pockets of lung tissue, mere cooling and clearing with cold bitter substances such as scutillaria *(huang qin)* or gypsum *(shi gao)* runs the risk of congealing the tissue and yin around the constrained heat . They can shrink the pocket around the pathogen, as well as damage the middle warmer. Cold and bitter substances are not to be used to treat constrained heat in the lungs without employment of effusing/dispersing substances. Herbs that disperse or effuse *(fā)* constrained heat drive the heat pathogen from its protective pocket. Once mobilized, the pathogen is significantly weakened and cannot replicate. It becomes vulnerable to the influences of the *wei* (defensive) qi and is moved out. "Effusion" therefore, is a good translation for the outward, surface-bound direction of the therapeutic move-

ment; "dispersion" is a preferred term for describing the scattering action that occurs when the contents of the viral pocket are sent flying *(fā)*.

Constrained heat in the lungs refers to a class of warm pathogens based on their nature, not to any particular phase of illness: the fact that they are imbedded or lodged. Therefore, constrained heat in the lungs can be part of acute, sub-acute, chronic, or latent phases of illness.

***Fú rè fèi* (Latent/Lurking Heat in the Lungs)**
*Fú rè fèi*, "latent" or "lurking heat in the lungs", refers to a dormant internal pathogen that can become activated when a secondary factor induces it. Lurking pathogens are typically not problematic, that is, until they become reactivated. Pathogens can "lurk" in different places, depending on both the nature of the pathogen and individual constitutional vacuities. The lung is one of the most common areas for latent pathogens because it is the *zàng* most vulnerable to external influences.

The dormancy was initially created after the *wei* (defensive) qi failed to expel a pathogen. In order to cope with the presence of a pathogen that it cannot expel, the body instead managed the situation by locking down the intruder. This restraint requires a certain amount of qi to maintain. When the *zheng* (upright) qi becomes taxed again, there may be insufficient qi to maintain latency. One common reactivation factor of *fú rè fèi* (latent heat in the lungs) is a new external invasion. The *wei* (defensive) qi is summoned to fight the new pathogen and the remaining qi that had been restraining the lurking heat becomes further weakened and can no longer maintain the latency. The result can be one of two patterns: if the external pathogen remains in the external realm, the *wei* (defensive) qi begins to battle with both the interior and the exterior and a dual internal-external pattern emerges. The external pattern can be either wind-heat or wind-cold, but the reactivated latency is always internal heat (or fire). The second possible pattern that can result from contracting an external pattern is that the latency can draw the external pathogen to itself in the interior. The combination overwhelms the anti-pathogenic qi that was restraining the latency and the combination ignites into fire *(huǒ)*. When this happens, no external signs will be present; the pattern is strictly internal.

Over-work, poor diet, too much sex, emotional stress or improper treatment can all lead to a liberation of the lurking *(fú)* pathogen as well, although these triggers typically do not manifest with the same intensity as the combined internal-external pattern.

Not all re-activated lurking *(fú)* heat re-emerges as a severe acute pattern. In fact, simple chronic or recurrent issues are probably far more frequent. Children who get recurring nosebleeds when they become over-excited, stressed, or when they encounter a minor exterior pathogen often have lurking heat, which makes them vulnerable when exposed to a secondary source that stirs the internal heat. There will be a severe respiratory infection in their history, possibly one that developed into bronchiolitis or pneumonia. The original infection could have happened years earlier, but the pathogen can lurk season after season for years and years, reactivating when the right secondary factor re-ignites it.

Other examples of lurking *(fú)* heat causing a simple chronic or recurrent issue are halitosis, dry mouth, mid or late afternoon fevers, and hives. If lurking *(fú)* heat in the lungs is the underlying cause, then the patient will have in his or her background a severe or stubborn warm disease *(wen bing)* and there will be accompanying signs and symptoms. The main one will be a rapid pulse whenever the main symptom is present (whenever the latency is re-ignited). Others may include dry, hacking cough, sore throat, chest distension or discomfort, irritability or outbursts of anger, and a red tongue tip.

***Fèi huǒ* (Lung Fire)**
When a warm-class pathogenic factor moves swiftly to the lung *zàng*, there is not enough time for the body to respond with a protective coating of phlegm— lung fire develops instead of phlegm-heat. Likewise, when the yin is insufficient to begin with, as in the case of children, the elderly, or those whose lung yin has been damaged from febrile disease, the body cannot lock down the heat pathogen

in a humor, making it possible for the pathogenic factor to advance further. According to the *Su Wen*, "fire" *(huǒ)* is heat *(rè)* with either "distortions of vision" or "excessive agitation". The excessive agitation in lung fire manifests as pronounced restlessness and indicates the presence of a high fever (over 101.5° F). The "distortions of vision" can be simply an inability to focus ones vision on a person or a television show for more than a moment or two, which is an extension of the disturbed *shen*, but it can also be actual distortions in one's vision. In the centuries that followed the *Su Wen*, the concept of "fire" *(huǒ)* developed to describe a more extreme and substantial form of heat. The following is a summary of the characteristics of fire:

- Fire is an internal pattern.
- Fire causes a rapid pulse, often thin and rapid.
- Fire always agitates the *shen* causing irritability, restlessness, or insomnia.
- Fire dries fluid and damages yin causing signs such as dark, scanty urine, dry mouth and thirst, or constipation.
- Fire tends to move upward and outward causing bitter taste, red eyes, mouth sores, or red skin lesions.
- Fire can cause disturbances in the blood such as hemoptysis (coughing up of blood) or epistaxis (nosebleed).

Common medically-defined diseases and afflictions that frequently are caused by the OM pattern of lung fire include influenza, whooping cough, viral pneumonia, hemoptysis (coughing up blood), epistaxis (nose bleeds), hot-type asthma or asthma from viral infection, RSV (Respiratory Syncytial Virus) infection, and early-stage measles. In any of these, confirm the presence of fire by rapid pulse and agitated *shen*.

## Modern Applications

Modern research has conducted little testing on **Mulberry and Lycium Formula** *(Xie Bai San)*. Perhaps this is partly due to the fact that many practitioners find the concepts of constrained heat and lurking heat confusing; or it could be because this classic formula, in common use for nearly 900 years, has been used successfully to treat the same classes of presentations since long before the modern era. Below are a few examples of how the formula is used when looked at through a biomedical prism.

**Residual trapped pathogen due to antibiotic use:** Antibiotics do not release the exterior. They are very cold and damp-forming and therefore have a strong tendency to sink deeper and lower into the body. If administered during an acute external invasion, it is common that the antibiotic drives the pathogen deeper. The damp and the cold can temporarily lock down the pathogen, and sometimes even destroy it in the process. But when the pathogen is not destroyed, it can transform into a lurking *(fú)* pathogen, which can be either cold or heat. When an external wind-heat pathogen has been pushed inward and "constrained" *(yù)* in the lungs to transform into internal lung heat or fire, **Mulberry and Lycium Formula** *(Xie Bai San)* is an effective strategy to resolve the pattern.

**H1N1 Infection**: The acute fully engaged phase of H1N1 virus or "swine flu" is an example of constrained heat in the lungs. **Mulberry and Lycium Formula** *(Xie Bai San)* is an excellent formula to release the virus from the lung tissue and drain lung heat to expel the pathogen and rectify the lung qi.

**Herpes Simplex**: Some modern formularies claim that **Mulberry and Lycium Formula** *(Xie Bai San)* is used to treat herpes simplex, either type 1 (commonly oral) or types 2 (commonly anogenital). The reasoning behind this is the formula's strong ability to eliminate lurking heat. The herpes virus is arguably one of the clearest illustrations of "lurking heat". It is commonly known that simplex 1, simplex 2, and herpes zoster all can have long periods of dormancy between outbreaks. The ability of **Mulberry and Lycium Formula** *(Xie Bai San)* to manage the herpes virus family lies in the ability of lycium root bark *(di gu pi)* to dredge latent pathogenic heat from the kidney and marrow and to eliminate heat from the blood. The present formulation should be superior to the classical version for treating the herpes family of viruses because of the addition of the anemarrhena rhizome *(zhi mu)* and prepared soybean *(dan dou chi)*, which both augment the actions of

lycium root bark *(di gu pi)*.

## Formula Comparisons

### Mulberry and Lycium Formula and Siler and Platycodon Formula

These two formulas effectively treat acute respiratory disorders due to lung fire. **Siler and Platycodon Formula** *(Fang Feng Tong Sheng San)* is superior when the presentation includes high fever with constipation, or when the skin is erupting in fever lesions. **Siler and Platycodon Formula** *(Fang Feng Tong Sheng San)* is also a better choice when there are clear signs of simultaneous internal and external heat patterns. Simultaneous chills and fever, aversion to wind, or a pulse with a strong superficial quality are useful differentiating signs that would indicate use of **Siler and Platycodon Formula** *(Fang Feng Tong Sheng San)* over **Mulberry and Lycium Formula** *(Xie Bai San)*. **Mulberry and Lycium Formula** *(Xie Bai San)* is a better choice if these signs of an exterior pattern are absent or unpronounced. **Mulberry and Lycium Formula** *(Xie Bai San)* is indispensable if there is wheezing or asthmatic breathing with a fever.

### Mulberry and Lycium Formula and Fritilleria and Pinellia Formula

These two formulas both effectively treat internal warm-type respiratory disorders. The most distinctive difference in the application of these two formulas is that **Fritilleria and Pinellia Formula** *(Chuan Bei Ban Xia Tang)* has a strong ability to resolve phlegm in the lungs. If yellow or green phlegm are prominent, or if the cough is barking or it rattles, then choose **Fritilleria and Pinellia Formula** *(Chuan Bei Ban Xia Tang)*. **Mulberry and Lycium Formula** *(Xie Bai San)* is superior for a dry cough or cough that is high and clear sounding with little sputum.

### Mulberry and Lycium Formula and Ling Zhi Lung Formula

Although both of these formulas may be used to treat asthmatic breathing, cough and wheezing, the underlying cause is very different. **Ling Zhi Lung Formula** *(Ling Zhi Fei Pian)* is used in cases of lung qi deficiency and is contraindicated during an acute infection. It works by restoring the relationship between lung and kidney: descending the lung qi and supporting the kidney's ability to grasp the qi. In contrast, **Mulberry and Lycium Formula** *(Xie Bai San)* is used when lung heat or fire is the cause of the labored breathing, cough or wheezing.

## Formula Combinations

### Mulberry and Lycium Formula and Five Mushroom Formula

Most constitutions, even those of children and the elderly, are strong enough to use **Mulberry and Lycium Formula** *(Xie Bai San)* by itself to drain fire or release constrained heat from the lungs. But when the patient has a significantly weakened immune system from AIDS, strong immunosuppressant drugs, or chemotherapy, the lung qi and general anti-pathogenic qi may require help. **Five Mushroom Formula** can support qi and boost immunity while assisting in the elimination of the pathogen. This combination provides the dual actions of draining lung heat and boosting qi, thus rectifying the lung qi to completely expel the pathogen.

### Mulberry and Lycium Formula and Zhong Gan Ling Formula or Gan Mao Ling Formula

When an external heat pathogen sinks deeper and attaches to the lung tissue, becoming lung fire, **Mulberry and Lycium Formula** *(Xie Bai San)* can be used to release the attachment of the heat pathogen/virus from the lung tissue. Sometimes, while the pathogen is being pushed out toward the surface, internal heat signs disappear and only external signs are present. When this happens, it can be advantageous to switch to or combine with an anti-viral formula such as **Zhong Gan Ling Formula** or **Gan Mao Ling Formula.**

## Footnotes

[i] Maciocia, G., "Myalgic encephalomyelitis (post-viral syndrome, chronic Epstein-Barr virus disease)", *Journal of Chinese Medicine,* Vol. 35, Jan. 1991.

[ii] *Ibid.*

[iii] Gupta, A., "An overview to pandemic swine flu and its remedies", *Journal of Advances in Pharmacy and Healthcare Research*, Vol. 1, pp. 11-22, 2001.

[iv] Heuertz, J., "The Swine Flu and Chinese Herbal Medicine", Herbal Medicine Press, April, 2009.

# Useful Combinations

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|---|---|
| For patients with a weak immune system | Use with **Five Mushroom Formula**. |
| When the pathogen has been pushed out to the surface and external signs are present | Combine with **Zhong Gan Ling Formula** or **Gan Mao Ling Formula**. |

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## Notes