

Common Adulteration of Chinese Herbs

AT: This is one document in my TCM doomsday collection.

I've seen this compilation of herb adulterations in various Chinese TCM forums over the years. While I cannot really verify its information, these are the same things I've often heard from my friend in Shanghai, who's in the herb business. I remember he once went into an apprenticeship at an herbal dispensary in Haozhou, Anhui (one of the major trade hubs for TCM herbs – which should come up a few times in this document). He described to me that it is literally an underground world there, where the community operates with certain rules and secrecy, where outsiders are turned away. Once he gained their trust over a period of time in apprenticeship, he was revealed with all the information about adulterations and malicious processing of the herbs.

He told me at the time: DO NOT buy any herbs in China unless you really know the business. Buying from reputable herbal dispensary does not help much either, according to him.

I am not sure if this document has already been translated into English elsewhere. I believe this would be a valuable reference guide that we may sometimes look over, either for questioning into herb quality or for purely intellectual interest. If anything, this document should lead you to question into the herbal quality, its processing, and adulteration. As a Chinese herbalist, you have to be conscious of what your suppliers provide to you – since it is literally your life line. Do not ever assume that herbs are like pharmaceutical drugs that's always consistent – they are not! They are natural products where every single step from farming, harvesting, processing, and decocting matters!

In this translation, sometimes the first-person stance is used – this is a translation from the Chinese sources, and does not reflect my own experience or knowledge. In cases where I comment, I'd mark it with a different color.

1. **Tong Cao (Medulla Tetrapanacis Papyriferi)** is mostly made up of adulterants. It is rare that one can obtain a whole batch made up entirely by the authentic herb. An authentic batch costs about 70 RMB (~\$11) per kilogram. Common adulterants are potassium alum, magnesium sulfate. Tong Cao mixed/treated with adulterants have a hard texture, with astringe taste or no taste. These days, adulterated Tong Cao is commonly cut into small pieces and mixed into authentic herb batch for sell.
2. **Zhi He Shou Wu (processed Radix Polygoni Multiflori)**: When you see it in small cubic pieces, it's mostly likely made by sweet potato pieces after processing. To distinguish it: if it tastes like caramel, then it's probably made by dried sweet potato. If it comes in circular slices, then it could be Da Huang (rhubarb root) processed with black beans and air dried. To be safe, buy raw He Shou We (Radix Polygoni Multiflori), decoct and simmer it for 2-3 hours with black bean, then dry it under the sun (should dry in 1-2 days). Its therapeutic effect is much better than the adulterated herb.

3. **Ba Fu Zi (Rhizoma Typhonii seu Radix Aconiti):** the adulterated form is made with sweet potato or potato – which is cut into similar shape, dried, and bleached. To distinguish it: the adulterated herb has noticeable cuts and processing marks on the edge. Also taste it, the adulterated Bai Fu Zi does not make the tongue numb.
4. **Qiang Huo (Radix et Rhizoma Notopterygii):** it is commonly adulterated with horsetail Du Huo (Radix Angelicae Pubescentis) from the Northeast, which is then sliced and processed into similar shape of Qiang Huo. To distinguish it: the authentic herb has a core that looks like the chrysanthemum flower, and it is greasy. The best way to prevent adulteration: buy bulk raw herbs (Qiang Huo before any processing), and cut it into pieces with scissors whenever you need to use it.
5. **Dang Gui (Radix Angelicae Sinensis):** the Dang Gui slices are commonly mixed with slices of Du Huo (Radix Angelicae Pubescentis). If it has a large slice, white color, and sweet taste – then it is most likely Du Huo. To prevent adulteration: buy whole pieces – cut it yourself and separate out head, body and tail for clinical usages.
6. **Yan Hu Suo (Rhizoma Corydalis):** as whole pieces, it does not have much adulteration, if anything, it is mostly mixed with sand and gravel. As slices, herbal dispensaries as a common practice adulterate it with the seeds of Shan Yao (Radix Dioscoreae Oppositae), which are cut in half and processed before mixing with Yan Hu Suo. This is especially harmful. To prevent the adulteration: only buy whole pieces, preferably without stone and gravel. Grind it into powder whenever needed.
7. **Hai Jin Sha (Spora Lygodii Japonici):** people adulterate it with construction red brick – which is grinded into fine powder and mixed into the herb. This is very sad. The patient is being treated with internal stones with this herb, but they are taking fine sand powder instead. To distinguish it: mix and stir the powder with water in a cup. Hai Jin Sha floats on the water surface, fine sand sinks to the bottom of the cup.
8. **Bai Ji (Rhizoma Bletillae Striatae):** the sliced Ba Ji are most likely adulterated. If it has a loose and soft texture, then it is the remaining body of the seed after germination, which does not have much therapeutic effect. To distinguish: chew it – the authentic herb readily sticks to the teeth, the adulterated one is not sticky at all. During purchase, it is recommended to buy whole herbs so there is a lesser chance for adulteration. It is slightly more expensive, but the value is worth it.
9. **Ban Xia (Rhizoma Pinelliae Ternatae):** Yan Hu Suo (Rhizoma Corydalis) decocted with Huang Bai (Cortex Phellodendri), and then treated with potassium alum.

AT note: The authentic Ban Xia should be Pinelliae ternatae, “Han Ban Xia” in Chinese, meaning “land-grown pinellia” in English. It is commonly adulterated with Typhonium flaglliforme, called “Shui Ban Xia” in Chinese, meaning “water-grown pinellia” in English. The water-grown variant is about 1/3 – 1/5 the price of the land-grown variant, also with drastically different therapeutic effect – which stops pain, regulates (blood) stasis, reduces swelling, and resolves toxicity instead.

The two variants can be easily differentiated by their shape. Han Ban Xia has a spherical or flat-spherical shape with a diameter of 0.5-4 mm, with a “scar” that occupies about 1/3 – 1/5 of its spherical surface. Shui Ban Xia on the other hand has a conic tip.

It is also very important to recognize the difference between the various processed forms of Ban Xia in the market due to their different strength and therapeutic effect, such as Sheng

Ban Xia, Qing Ban Xia, Fa Ban Xia, Jiang Ban Xia, Zhi Ban Xia... etc. Since this is only about the adulteration, so I will leave it for the next time.

10. **Chen Xiang (Lignum Aquilariae Resinatum)**: it is mostly fake in the market. The fake product is made with withered wood, which costs about 30-50 RMB (~\$5-8) per kilogram as raw materials. Then the dispensary would simply spray essential oil on it and sell for 400-500 (~\$65-81) RMB. This is infuriating!
11. **Fu Ling (Sclerotium Poriae Cocos)**: the adulterant is made with rice powder, which is processed and sliced into pieces. To distinguish it: boil it with water. If it turns into paste or even dissolves into the soup, then it is an adulterant. The authentic Fu Ling cannot really be cooked thoroughly.
12. **Tu Si Zi (Semen Cuscutae Chinensis)**: common adulteration is to replace Tu Si Zi with Su Zi (Fructus Perillae frutescentis). To distinguish it: observe it with a magnifying glass. Each piece of Tu Si Zi has a navel-like concave, which is absent on the adulterant. Also boil it with water. You should see each seed extends out thread and becomes sticky.
13. **Wu Wei Zi (Fructus Schisandrae Chinensis)**: common adulteration is to dry and dye unripe wild grapes (which has a huge supply), and market it as Wu Wei Zi.
14. **Wei Ling Xian (Radix Clematidis)**: over 80% in the market supply are fake. The authentic herb has dark, solid, erect roots; the adulterated has soft fine root hairs. To distinguish: first find a authentic whole herb, observe the head of its root, then compare it with the fine root pieces also mixed in the batch – then you will know how much this batch has been adulterated.
15. **Chai Hu (Radix Bupleuri)**: there are too many ways to adulterate with this herb. The most common ones are mixed with the stem of Chai Hu (with low therapeutic effect); mixed with mud (you will notice abnormally high amount of mud when washing this herb); or mixed with the root of sun flower.
16. **Long Gu (Os Draconis)**: basically all Long Gu in the market are fake. The authentic herb is a rare find. Common adulterating process involves with mixing limestone and mineral power into bone-shaped modules, calcining it into solid shape, breaking into pieces and marketing it as Long Gu. This really hurts the practitioners. The recommendation is: if one wants to see his patient recover from their illness, or if one wants to become a reputation practitioner, then he must pay the high price to obtain the authentic product – to obtain the fossil.
17. **Long Chi (Dens Draconis)**: how much is its adulteration out there? Just ask the people from Haozhou, Anhui. Basically they are all adulterants. The real one costs 130-150 RMB (~\$21-24) per kilogram
18. **Tao Ren (Semen Pruni Persicae)**: if you look closely, about half of your batch are adulterants. In some cases, the entire batch is adulterant. It is commonly adulterated with Xing Ren (Semen Pruni Armeniaca), since Xing Ren costs about 14 RMB (~\$2) and Tao Ren costs about 35 RMB (~\$6). To distinguish the two: Xing Ren has a shape similar to the heart, with one big end and one small end. Tao Ten's two ends have no noticeable differences.
19. **Chuan Niu Xi (Radix Cyathulae Officinalis)**: it is commonly adulterated with the root of Niu Bang (Arctii Lappae).
20. **Lu Jiao Shuang (Cornu Cervi Degelatinum)**: sometimes it's simply the smaller pieces of adulterated/fake Long Gu (Os Draconis).
21. **Zhu Ling (Sclerotium Polypori Umbellati)**: most are mixed with magnesium sulfate.

22. **Long Dan Cao (Radix Gentianae Longdancao)**: it is adulterated with root hair of Niu Xi (*Radix Cyathulae Officinalis*) – now you should go taste your Long Dan Cao, one of the four major bitters in Chinese herbal medicine. You may discover that it actually tastes sweet.
23. **Sha Ren (Fructus Amomi)**: the authentic Sha Ren is called Yang Chun Sha (*Amomum villosum* Loureiro). The common adulteration is to mix in with inferior types of Sha Ren. To distinguish it: Yang Cun sha has a spherical shape. If it comes in long strips, then it has a low content for therapeutic constituents, which does not have any therapeutic effect.
24. **Wu Mei (Fructus Pruni Mume)**: it is hard to find the authentic product, which costs about 28 RMB (~\$4.5). People adulterate it with wild peach, which is soaked in vinegar, dried, and mixed in with Wu Mei. Now, are you wondering why your Wu Mei Wan does not work?
25. **Quan Xie (Buthus Martensi)**: it is adulterated with salt. In average, 1 kilogram of Quan Xie has about 400-500 grams of salt.
26. **Chuan Shan Jia (Squama Manitis Pentadactylae)**: it is adulterated with salt or magnesium sulfate. I've personally tested: after I soaked and washed 200 grams of Chuan Shan Jia, there was only 110 grams left after drying. It meant that it was 45% of adulteration with salt and magnesium sulfate. Now do you dare to use it for women during lactation?
27. **Zao Jiao Ci (Spina Gleditsiae Sinensis)**: it is commonly adulterated with the stem of multiflora rose (with short thorns and bright yellow color). Even if you prescribe 100 grams daily dosage for patient with sores, it will be useless.
28. **Wu Zhu Yu (Fructus Evodiae Rutaecarpae)**: the adulterant is the shell of another plant species that has a similar shape. I do not even know what it is. I just know that it is tasteless when chewing on it. I heard that an experienced senior practitioner once prescribed Wu Zhu Yu Tang to his patient at one major Tertiary Chinese hospital. Initially he started with 15 grams daily dosage, then he increased it up to 50 grams. It was all ineffective for the patient. At one point, the senior practitioner even believed that he had misdiagnosed his patient.
29. **Hai Ma (Hippocampus)**: what's really inside the belly of the Hai Ma? Only those who adulterate with this herb know.
30. **Huang Qin (Radix Scutellariae Baicalensis)**: harvest thin wild miscellaneous tree roots, dye them and market them as wild Huang Qin. To distinguish it: wash and scrub it with water, the authentic Huang Qin retains its color. The adulterant turns into pale yellow. After cooking it turns white, simply becoming wood stick.
31. **Shu Di Huang (Radix Rehmanniae Glutinosae Praeparata)**: simply chew your piece of Shu Di in your mouth, you will discover how much sand and mud is in it.
32. **Di Long (Lumbricus)**: lay them on the ground and hit/smash them several times with a piece of wooden board, then re-weigh them again. Now you know how much mud is mixed with the earth worms.
33. **Suan Zao Ren (Semen Zizyphi Spinosae)**: at the retail price of 58 RMB/kg (~\$9), it is adulterated with at least 40% empty shell of Suan Zao Ren, who is further dyed for adulteration. So each time you prescribe 20 grams of Suan Zao Ren, you can obtain maximally the effect of 12 grams. There is also a difference in (Chinese) domestic and imported variants. They have a similar shape. The imported variant costs about 35-42 RMB (\$5.7-6.8) while the domestic one costs about 70 RMB (~\$11). It is a common practice to mix the imported variant in the domestic product for sale.

34. **Pu Gong Ying (Herba Taraxaci Mongolici cum Rd)**: do not assume it to be authentic since it is so cheap. Over 80% in the market are fake. People would adulterate it with romaine lettuce, which is cut into segments and mixed with the authentic herb for sale. Whenever you see the herbs in segments, then it's been adulterated. To prevent adulteration: only purchase Pu Gong Ying that comes with the whole dried plant, without shredding.
35. **Ling Yang Jiao (Cornu Antelopsis)**: people adulterate it with plastic, which is molded into its shape. You cannot really tell the difference based on the exterior look/texture. Whenever you see people from Xinjiang selling it street-side throughout the country, they all sell this plastic adulterant. To distinguish it: burn it with fire. If it emits black smoke and strong scent of burned plastic, then it is an adulterant.
36. **Xi Jiao (Cornus Rhinoceri)**: same as above.
37. **Lu Rong (Cornu Cervi)**: the people from Xinjiang recycles the leathery shell-layer of the authentic herb, which is removed from the herb's processing. Then they insert into the empty leathery shell dyed sand and wood powder with adhesive, room dry it, and sell as bloody Lu Rong (the highest grade of Lu Rong!!). To distinguish it: you have to see the authentic bloody Lu Rong first. It is very different from the fake one.
38. **Dong Chong Xia Cao (Sclerotium Cordyceps Chinensis)**: when one combines Jiang Can (Bombyx Batryticatus) and sweet potato seedling, it becomes Dong Chong Xia Cao. People also mold mashed potato to manufacture this herb too... there are simply too many!
39. **Zi He Che (Placenta Hominis)**: over 80% contain magnesium sulfate.
40. **Chi Shao (Radix Paeoniae Rubrae)**: it is now difficult to obtain the Chi Shao grown in Beijing. Most likely, it is adulterated with dyed Bai Shao (Radix Paeoniae Lactiflorae). Sometimes, people adulterate it with in raw Sheng Yu (Radix Sanguisorbae Officinalis)/
41. **Da Hui Xiang (Fructus Anisi Stellati)**: there are two ways to adulterate it: (1) extract it with water then sell it. To distinguish it: those that have been extracted have weaker taste and lighter color. (2) mix with magnesium sulfate. To distinguish it: shine light on it. You will see its light reflection like a metallic substance.
42. **She Gan (Rhizoma Belamcandae Chinensis)**: the authentic herb costs about 40 RMB (~\$6.5). Anything that costs less than 30 RMB (~\$4.8) are adulterated. People adulterate it with thin slices of Jiang Huang (Rhizoma Curcumae Longae).
43. **San Qi (Radix Pseudoginseng)**: Herbal dispensaries collect the dregs of San Qi after it being extracted manufacturers of Xue Sai Tong Pai (Unblocking Blood Stasis Tablets), dry it and market it as raw San Qi. It has a relatively brittle texture with white cross-sections. It does not have much therapeutic constituents left, and of course it does not have much effect.
44. **Chao Bai Zhu (stirred fried Rhizoma Atractylodis Macrocephalae)**: most Chao Bai Zhu in the market are simply dyed. The authentic Chao Bai Zhu stirred fried with bran is almost non-existent. The authentic one has brownish-yellow cross-sections. The adulterated one does not have a yellow color on the cross-sections. It is better that you buy raw Bai Zhu and stir-fry it yourself. You can either stir-fry it with yellow soil or bran, until its cross-sections is slightly burned with a brownish/yellow color. Since Bai Zhu has a high water content, only 0.7 kg of Bai Zhu would remain after stir-frying 1 kg of it. Many herbal dispensary want to reduce to weight-loss, so they only stir-fry it slightly, then dye it with caramel – which will give you a brownish surface but white cross-section, with an inferior therapeutic effect.
45. **Bai Xian Pi (Cortex Dictamni Dasycarpi Radicis)**: it's soaked in magnesium sulfate

46. **Dan Shen (Radix Salviae Miltiorrhizae):** it's soaked/mixed with red sand
47. **Hong Hua (Flos Carthami Tinctorii):** people adulterate it with wood-fibers, which is dyed red and mixed with Hong Hua for sale. To distinguish it: grab a handful of the herb, if the herbs stabs/pricks the hand, also with many minced pieces, then it is adulterated. People also adulterate it by soaking the herb first in brown sugar solution (for extraction or for weight gain?), then dry it for sale. To distinguish it: this type of Hong Hua readily absorbs the moisture in air, it feels sticky by touch.
48. **Chan Tui (Periostracum Cicadae):** People adulterate it by soaking the herb in mud then dry it. So its feet and inner shell are loaded with mud, adding to the weight of the herb.
49. **E Jiao (Gelatinum Corii Asini):** you need 2.5-4 kg of donkey hide as raw material to make 1 kg of E Jiao. Donkey hide costs about 50 RMB (~\$8) per kg. If you do the calculation, if E Jiao costs less than 200 RMB (~\$32), then basically it's either adulterated with inferior raw material or made from pork hide. So if you only pay 150 RMB for your E Jiao, you should not complain the dispensary being bad.
50. **Zhi Chuan Shan Jia (baked Squama Manitis Pentadactylae):** I've previously learned the lesson of Chuan Shan Jia adulterated with salt. If you bake it yourself, 500 g of raw Chuan Shan Jia will yield about 425 g. After baking, if you soak it in salt solution and then dry it, the weight will increase up to 500-550 g right away. To prevent it being adulterated with boar and cow nails, it is recommended you buy the raw whole herbs and process it yourself.
51. **Xiang Si Shu Zi (Semen Acaciae Confusae):** it is commonly adulterated with Zao Ren (Suan Zao Ren, Semen Zizyphi Spinosa?). To distinguish it, Xiang Si Shu Zi is heavy with a shiny, smooth surface, and it is full, round mid-section. Zao Ren is light, hollow, with a folded surface.
52. **Long Yan Rou (Arillus Euphoriae Longanae):** Long Yan Rou is commonly soaked with brown sugar solution to increase its weight. If it costs about 20 RMB (~\$3.2), then it's been adulterated in this process. The authentic herb costs about 40 RMB (~\$6.7).
53. **Xi Yang Shen (Radix Panacis Quinque Folii):** Xi Yang Shen slices are most likely adulterated with white Chinese ginseng slices. As whole herbs, there are the imported (from the US) and the (Chinese) domestic variants, with huge price difference. Good imported Xi Yang Shen costs at least 1000 RMB (\$161), meanwhile the domestic one only costs 150 RMB (\$24). Whenever you see "imported Xi Yang Shen," it is most likely (Chinese) domestic product.
54. **Qing Dai (Indigo Pulverata Levis):** It is hard to obtain the authentic product these days. It is often adulterated with talc for sale. Whenever you see its color being green with a white hue, or its texture feels slippery by touch, then it is adulterated with talc. Recommendation: whenever you purchase Qing Dai, you have to smell it to see if it smells moldy. The authentic herb should have a slight fishy smell to it. Qing Dai readily absorbs the moisture in the air, and molds grow on it easily after it absorbs the moisture.
55. **Da Huang (Radix et Rhizoma Rhei):** it is commonly adulterated with Tu Da Huang (Rumex madaio Makino). It is hard to differentiate it by eyes. The adulterant is slightly white in the core. It is easier to see under the UV light.
56. **Shan Dou Gen (Radix Sophorae Tonckinensis):** the authentic herb is rare to find in the market these days. The adulterant has a low therapeutic effect. I would recommend you not to think about using this herb when you prescribe a formula – it is all fake!

57. **Fu Shen (Sclerotium Poriae Cocos Paradicis)**: it is also known as “hugging the pine root.” In today’s Fu Shen, you see a small pine root in the center, with a huge Fu Ling surrounding it. It is almost like you are having a piece of sesame cake, having only one grain of sesame on the cake, and still calling it a sesame cake. Some adulterants are so obvious, where the pine root is abnormally fresh – from one look you know it is manufactured. The pine root should be rotten instead.
58. **Ban Xia (Rhizoma Pinelliae Ternatae)**: I only use whole pieces of Jiang Ban Xia (ginger processed Ban Xia). Do not use slices, since slices are commonly adulterated with Tian Nan Xing (Rhizoma Arisaematis). You should be able to locate the navel in the center of the Ban Xia whole pieces.
59. **Qian Cao (Radix Rubiae Cordifoliae)**: it is adulterated with grass root or thin tree root, which is dyed red and sold as Qian Cao. To distinguish it: break the piece in half. If the cross-section is red, then it is the authentic herb. The adulterant isn’t red. The color depends on whatever the adulterant is.
60. **Qing Dai (Indigo Pulverata Levis)**: If you drop it into water and it floats initially, then it is authentic Qing Dai. If it sinks to the bottom right away, then it is an adulterant.
61. Herbs that can be tested in water:
- a. **Pang Da Hai (Semen Scaphii Lychnophori)**: the authentic herb expands like a sponge in the hot water, with expands up to 8 times its original size. Its adulterant Ping Po (Semen Sterculiae Scaphigerae) expands slower, and only expands up to 2 times its original size.
 - b. **Su Mu (Lignum Sappan)**: soak the broken pieces in hot water, the water should turn red. Its adulterants are simply dyed wooden pieces. If it is soaked in hot water, the water turns pale yellow, yellow, or orange yellow.
 - c. **Fan Hong Hua (Stigma Croci)**: soak it in hot water, the water should turn yellow and not red. It should not have any precipitation. The herb should expand into a trumpet-shape. It also should not have produce any oily substance on the surface of the water. If it turns into sticks or threads after soaking, then it is adulterated with orange day-lily (Hemerocallis Fulva). If it is adulterated with fine sand, starch, or vegetable oil, then you will see precipitation or oily surface.
 - d. **Qin Pi (Cortex Fraxini)**: soak it in water in a clear glass. Under the sun light you should see an azure florescence. The adulterant does not have this florescence.
 - e. **Niu Huang (Calculus Bovis)**: soak it in water. It will soak up the water and become wet, but its shape will not change. It will not dissolve, fades in color, or turns the water murky. When it’s mixed with small amount of water and brushed it on the nail, it will dye the nail yellow. The adulterants are commonly made with Huang Lian (Rhizoma Coptidis Recens), Da Huang (Radix et Rhizoma Rhei), Jiang Huang (Rhizoma Curcumae Longae), egg yolk powder, or potato dyed with vegetable colorants – these will dissolve rapidly in water, become broken pieces, turn the water yellow and murky.
 - f. **Chan Su (Secretio Bufonis)**: once the authentic herb touches water, it will swell quickly and emits milky white liquid substance. The adulterant also emits milky white substance, but it emits it slowly, and it does not swell.

- g. **Ha Ma You (toad oil):** when soaking it in warm water, it will turn into the shape of cotton batting, and its size will expand 10-15 times. The adulterants are commonly made with oviduct of Chinese toad – which will have a helix chicken-intestine-like shape after soaking. Its size expand only 3-5 times its original size.
 - h. **Xiong Dan (Fel Ursi):** take a small piece of the authentic product and toss it into water, you will see it rotates, emitting a yellow descending line that does not diffuse. After soaking it for 24 hours, all the yellow extract precipitates at the bottom of the cup. The adulterant is commonly made of pig, cow or sheep gallbladder. Although they have different types of descending yellow line; after 24 hours, the entire solution turns yellow, or you will see thread-like objects in the solution.
 - i. **Jin Qian Bai Hua She (Bungarus Multicinctus):** soak it with water, you should see the snake head and tail in one whole piece. The adulterant is manufactured with large snake skin, where the snake head will fall off and the tail will be short and thick.
 - j. **E Jiao (Gelatinum Corii Asini):** grind it and melt it in boiling water. The solution will be brownish red and slightly transparent, with not precipitation. The solution should be clear and not murky. The adulterant is made of miscellaneous hides. The solution will turn brown. It will also has sticky threads, films, and black precipitates. The newest adulterated E Jiao solution is also brown, often with black precipitates and thread objects. It is murky and not clear. The surface may have oily substance.
 - k. **Any flower:** it is commonly adulterated with talc. After soaking, flower will turn white, and there is some sticky substance at the bottom of the solution
62. **Sha Ren (Fructus Amomi):** sometimes it's adulterated with Yi Zhi Ren (Fructus Alpiniae Oxyphyllae). It is unlikely to occur if you purchase the whole pieces. It is mostly mixed with broken pieces or powder.
 63. **Xian Mao (Rhizoma Curculiginis Orchoidis):** it is adulterated with thin root of Bai Shao (Radix Paeoniae Lactiflorae), which is cooked until it turns black and processed. Let's see if you Kidney tonification works or not!
 64. **Quan Xie (Buthus Martensi):** it is adulterated with at least 50% of salt and mud.
 65. **Gou Qi Zi (Fructus Lycii):** it is commonly steamed with sulfur
 66. **Tian Men Dong (Tuber Asparagi Cochinchinensis):** it is commonly soaked in refined white sugar or rock candy solution in order to increase its weight. If your Tian Men Dong is sticky and not dry, then you should lick it – it should be very sweet!
 67. **Zhi Shi (Fructus Immaturus Citri Aurantii):** over 90% Zhi Shi sold in the market are actually Qing Pi (Pericarpium Citri Reticulatae Viridae) – when you purchase this, you should take care to distinguish the difference between these two herbs.
 68. **Zi He Che (Placenta Hominis):** the adulterant is made of corn powder and chicken intestine.
 69. **Shi Chang Pu (Rhizoma Amemonis Altaicae):** many herb dispensaries adulterate it with Shui Chang Pu (Acori calami rhizome). So haha, what should originally awake Shen and opens orifices for the patient – due to the adulterant's toxic effect, now they all become tired and sleepy.
 70. **Jin Yin Hua (Flos Lonicerae Japonicae):** it is adulterated with processed hollow ear of wheat.
 71. **Shu Di Huang (Radix Rehmanniae Glutinosae Praeparata):** I just discovered that is adulterated by sweet potato processed with caramel

72. **Xi Yang Shen (Radix Panacis Quinque Folii)**: the herbal dispensary has already soaked and extracted its constituents. They will then dry and sell you the empty dregs.
73. **Dong Chong Xia Cao (Sclerotium Cordyceps Chinensis)**: it is molded mushroom powder and adhesive
74. **Tian Ma (Rhizoma Gastrodiae Elatae)**: it is processed with potassium alum and sulfur
75. **Yan Hu Suo (Rhizoma Corydalis)**: it is adulterated with dyed small potato. It looks like the real thing, but it is not bitter.
76. **Jin Yin Hua (Flos Lonicerae Japonicae)**: my hometown Linyi, Shandong produces Jin Yin Hua. Nowadays people no longer adulterate it with other plant part or with the addition of sugar or talc. Those are the method from ten years ago. Due to the high price of Jin Yin Hua from my hometown, some herbal dispensaries would purchase our Jin Yin Hua, then they would mix it with inferior variant produced elsewhere before they sell it. In their dispensaries, the adulterated product sells for 70 RMB (~\$11) per kilogram, while the authentic product sells for 450 RMB (~\$73) – a price difference about 6-7 times.
77. **Shan Yao (Radix Dioscoreae Oppositae)**: right now Shan Yao is as white as the white snow. When you taste it, it is more sour than vinegar. You should not use it until you soak and wash it at least twice.
78. **Qian Hu (Radix Peucedani)**: my teacher mentioned that most TCM hospitals no longer have this in stock, since it is plagued with wide spread adulteration in the market.
79. **Quan Xie (Buthus Martensi)**: go purchase the live ones from Meng Shan for 800 RMB (~\$129) per kilogram. Cook them yourself and dry them. About 2 kilogram can produce 1 kilogram of dry product, at the cost of 1800 RMB (~\$290) per kilogram.
80. **Xing Ren (Semen Pruni Armeniaca)**: it is most often the real thing
81. **Ren Shen (Radix Ginseng)**: the ginseng that has already been extracted sells for 80 RMB (~\$13) per kilogram, while the one that's not been extracted sells for 180 RMB (~\$29).