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# Clays for HORSES

by Domenico Bergero, Cynthia Préfontaine ■ photos by Emanuela Valle, painting by Diego Marzola

## *Introduction*

*The veterinarians and the horse's owners, indeed in their respective roles, start or continue to be interested in alternative methods to keep their horses healthy and competitive. Oriented on horse sport medicine and care, there is a positive tendency for the consid-*

*eration toward nutritional factors and linked principles, including clay and herb utilisations. This consideration for nutritional factors and, in general, for the substances that can have a role in the performance horse gut's health and – consequently – on the general horse welfare, seems to be an essential*

point for the revaluation of an health relative concept. Performance horse's activities ask for a high level of metabolic rate. An adequate metabolic management in term of cares, feeding and nutrition is essential and obviously will influence performances. All competing horses live with a high stress level. The dietary supplements or "Natural" health products can be, often, very useful in horse competitions world. We include in this list: plants or vegetal derivatives, bacteria and probiotics, fungi, soil textures, vitamins, amino acids, essential fatty acids and extracts or isolates of those derived substances. Clays play a role in the maintenance of an healthy gut environment in many ways, but are also used for external use in horse care. The fastest way to get this kind of products is to apply to the market: you will find a lot of products, ready to use. But a second chance is given to horse owners and lovers: to prepare your specific clay mixture for your horse. This is what already happen in most Countries. But why clays are useful for horses? How can we prepare our own mixtures? Let's have a quick look.

Above, you will then find some practical information concerning ways to find, prepare and use popular natural health products clay - based. Use it on your own and consciousness. It is good to mention to be careful with natural products. As everyone already know or start to understand, they are not a safety synonym: they can be strong and involve strong reactions. To use these substances you need to develop knowledge and experiences in the field, but feel comfortable. Asking tips to a good veterinarian is the best way, in case of doubts, to avoid complications.

### Clay – Some facts

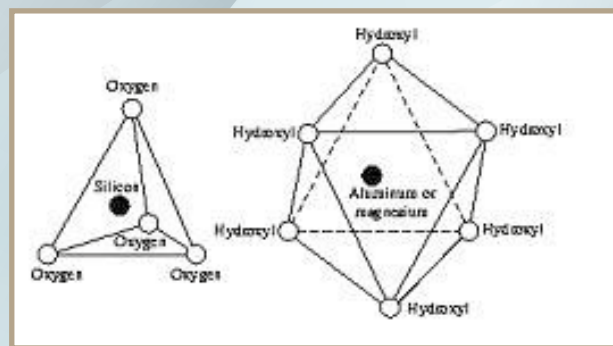
Today, clay is receiving a huge attention. We used it a lot during first world war, where Russian's militaries received 20 g per day orally. French regiments mixed clay with mustard and were protect against dysentery that was affecting other close regiments. In ethologic field, we observed many times that hurt animals will instinctively oriented themselves toward the mud. Many countries like: Antilles, Malaysia, Egypt, Mexico, India and South America use clays frequently, dried, in powder and mixed to the spices.

Where does clay come from? The terrestrial crust, a 10 km depth surface zone, is built with oxygen ions (90% of the crystal mineral volume), the lithosphere major constituent. This area contains 80 different elements (ex: silica, aluminium, magnesium, calcium, iron, titanium, phosphorus, sodium, potassium) that can possibly be combined in, more or less, 2000 types of minerals. The physic and chemical alterations applied on the parent's material cause the his degradation and liberate base elements. The clay structure is the key leading to the proprieties we are interest in. It has a phyllosilicate shape (phyllo=layer, silicate=silica) organized in layer composed of "elementary bricks".

Those elementary bricks are tetrahedrons and octahedrons that have a anionic or negative charged surface built with



oxygen (O<sup>2-</sup>) or hydroxide (OH<sup>-</sup>) and a central cavity hold by a cationic or positive charge element (Si, Al, Fe, Mg) to balance forces and stabilises the structure.



Because of the negative net charge resulting, the interstice space between two layers and also the surface layer will catch water and cations, causing an electrostatic attraction. The following cation order is generally accepted and is arranged in decreasing preference:

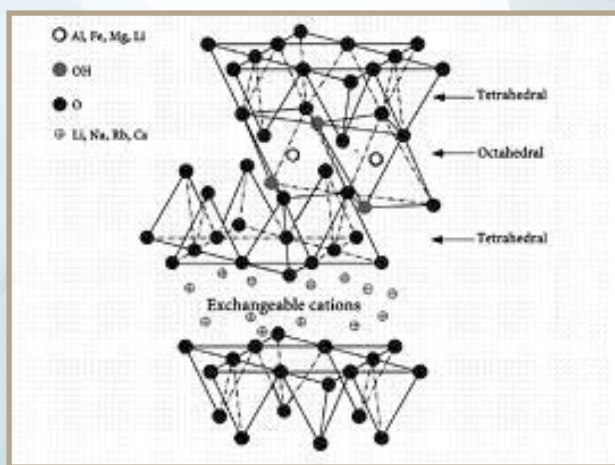
$+ > Al^{+++} > Ca^{++} > Mg^{++} > K^{+} > NH_4^{+} > Na^{+} > Li^{+}$

We name CEC (cation exchange capacity) the measure of the positive charge number that a clay matrix can hold (meq/100g dry clay). CEC is modulated by pH, temperature, structure and type of soils.

The type of clay is then characterised by a specific CEC. Bentonites have high CEC, and most zeolites (phillipsite, clinoptilolite and chabazite) have even higher! The capacity of these clays to bind some mycotoxins is very well known in animal husbandry and feeding. Moreover, zeolites are used to capture undesirable ions, as radioactive caesium: zeolites were in fact added to the diets of dairy cows to avoid the passage of radioactive caesium in the milk after the Chernobyl fallout.

Under different conditions, the situation may change. As to the research made by Perkins on clay chemistry and absorbability of mycotoxins, internal clay uses should strongly be evaluated with the CEC level if required. Using clay products having a high CEC, you can also get undesirable nutritional consequences on the animal by binding mineral

components in the diet such as trace elements, that are essential for the metabolism. Products with a low CEC show, unfortunately, low binding ability for aflatoxin and other mycotoxins. This made us remain that in terms of performance horses, the intern use of clay should be considered in proper way and based on good knowledge if needed. The use of clays in horse diets must be limited in amount (300 g/day) has the effect of increasing the gut transit time and to decrease the water content of faeces: this is good in case of diarrhoea, but dangerous in case of impaction colic.



For this reason, we will concentrate much more on clay external uses.

### Collection and particularities

#### Clay collection:

It's possible to collect clay by yourself if you know the place where you plan to get them is healthy in terms of fertilizers and chemical products. Clay is a toxin's sponge, be aware. It's more obvious to reach clay in rivulets or/and deeply in the soil. The suggestion is to avoid the upper slice of clay coat by digging a bit. Clay's veins can reach 20 feet down in the ground. Be aware before digging in the ground of the regulation going on in the area you are and be the nicest person you can for every collect you do in regard with the place.

There are different kinds of clay like: green (Europe), white and grey-bleu (North America) that permit different utilisations. There are also different characteristics to be considered, as the previously mentioned CEC, that depend of the type of soils.

Clay needs to be prepared before being used. It needs energy, in other words, to fill and organize the structure. Put clay in contact with water by watering it in a non-metallic bucket for example, then dry it by exposition to the sun. Repeat the procedure for some weeks. In this way, you activate your clay. When it will be in contact again with the water, the air and the sun, her work will starts again. Practice and learn with the possibilities you have. You will soon get good in identifying the good time and your good recipe for this. Do it

outside. When its raining, cover from the rain.

The red colour in a clay soils could indicate presence of sesquioxides that contain iron, aluminium and manganese oxides and hydroxides. This can be taken into account for the properties of the different elements. We find this oxides mostly in old soils.

### Drying and conservation

After the above mentioned procedure, we have to dry and stock the clay in a fresh and dried place. Leave it there in big pieces.

### Utilisation

When it is time to use the clay, take some big pieces and put them in a bowl and cover it all of water. Use non boiled fresh water. If your clay had been well treated, you can hear and see water sparkle when it touch the clay. It's not necessary to brake the pieces, let the water operate. If your clay seems to be inactive, change it.

What is good to know when you manipulate and use clay. Use glass, wood or terra-cotta components without paint or enamel. Never use metal except stainless metal or either plastic because as the metal, petroleum derivatives sometimes react with clay.

The more your clay is exposed to the sun, water and air, the more it is active.

Cover your component with a white tissue or a cotton sheet to let the clay "breathe". It need it. Use different types of clay and clay treats can help keeping a good level of efficacy and response to the treatment. As probably in your country side, you can find clay in a natural market places, herbalists and some pharmacies. Use the closest and available one from your home.

### Colour

From our personal use, grey clay is strong and efficient like the green for cataplasm on leg for example. Your choice should then take in to account your geographic situation. The cheapest price for either one or the other will often depends on this. The white clay is the one that we will use for internal cares or specific dermal cares.

### Extern usage

From experiences cultivated over generations or/and new scientific highlights reported, clay has exceptional qualities. It gives an invitation to the body to heal himself, to find back a good equilibrium in situations of lameness, intoxication, infection, etc. This tonification combined with adequate feeding will help maintaining good performances.

### Treatments

The cataplasm is the most used method in term of external



application. We can also use bath, clayey water compress and dry powder. The clay paste for cataplasm is always used at the room temperature.

### **Proprieties and actions**

#### **Antiseptic**

*It destroys pathogenic agents without bringing off healthy tissues.*

#### **Scarfbuilder**

*Silica, aluminium and zinc explain this particularity. They help in the regeneration of the tissues and galls helping by the way the cicatrisation and cleaning.*

#### **Absorbent**

*It drains purulent infections and absorbs oedema.*

#### **Sedative**

*It has a sedative action on local or general pains involved by traumatism or inflammation.*

#### **Haemostatic**

*Work on coagulation time.*

#### **Remineralization**

*Transfert in the organism essential salts and minerals.*

### **Clay cataplasm**

#### **Paste preparation**

*Take down the clay in a proper and hollow recipient. Add non boiled and pure water and cover it all by letting run a thin trickle of cold water from the tap. Always use cold water. The paste should have a glossy, homogeneous and as humid as possible texture till it's impossible to manipulate in the hand, like mayonnaise. Ideally, you should let the preparation rest for one hour without contact till your clay is full of water. Transparent recipient take its importance here if available. In case of emergency, like hemorrhagic situation, if we have no preparation in advance and no time to let the clay rest, use the external soak part and start immediately to prepare some other for close further moments. For those reasons, prepare in advance little bags to be able to react rapidly in case of emergency (cuts, injury, contusions).*

*After 2 or 3 days remaining in the bowl, if the clay is dry, put back in some water. Generally, we can kept it damp by*

*adding sometime water over or by keeping a wet tissue as a cover. Grey and green clay are more adapted for cataplasm as they don't dry fast like the white clay.*



### **"Packaging"**

*Spread the clay paste on humid linen: choose a natural fibre tissue, without dyeing, like a white 100% cotton.*

*We can also use a clean cabbage leave to maintain the humidity of the clay paste and moreover in a irritated zone (soften the leave in hot boiled water for 1 to 2 minutes).*

*Meanwhile, avoid plastic bags to kept everything together. The bandaging needs air to permit the evacuation of humidity. The coat depth can varies from 1 to 2 cm depending on the needs.*

*Usually, the clay is applied directly on the skin, but in case of open wounds, burns or presence of hairs, like horses, it's important to put a sterile gaze between the clay and the skin to avoid sore and pain when will come the moment to change the bandaging.*

*The cataplasm size is relative to the healing surface; it always has to be a bit larger then this. It involves to choose an adapted linen size to also manage this little clay expansion after the bandaging application.*

### **Fixation**

*When the cataplasm has been fixed where we expected, cover up with a dry linen and fix with either: elastic bandage, cotton bandage or sticky bands in case of small bandages.*

*For a deep injury, let the cataplasm works for at least 2 hours till 3 or 4 hours. Don't let the cataplasm more then 8 hours!*

*We can kept it there for the night in a situation of revitalisation, remineralisation (decalcification) or a long term treat. This is obviously to avoid if the animal don't feels comfortable with a wrap of over 4 hours.*

*To treat a purulent wound, you should renew the application every hour till the suppuration is ended. Then, prolong slowly the application time by adding an half hour every healing stage. With experience, you will be able to adjust yourself with the situation. Ask for help or advice when it's needed.*

*If the cataplasm involve difficult sensation or warm up too fast, we must change it every half hours. This could happen in case of abscess, inflammation, furuncles or recent sprain.*



*If the goal is to warm or vitalise organism, we have to kept it off before it cool down.*

### **Application frequency**

*The application frequency depends and varies with the case to treat, the width sore, the surface, the reaction and the time. The most important to remain is that if we can apply it one time a day, we have to do it everyday and at more or least the same time of day. Start with a 2 hours per cataplasm a day and enlarge slowly the duration till all the night if necessary. If the reaction of the animal is good, we can also increase the number of cataplasms per day always considering your animal tiredness, reactions, sensations of discomfort and indisposition.*

### **Clayey water compress**

#### **Precaution**

*Put more water then clay in your adapted recipient to obtain a muddy water. Steep good your linen or compress in the preparation before applying on the injury.*

### **Application case**

*We will choose this method instead of the cataplasm when the clay has to be changed frequently as a fresh burn or wound. In fact, where the cataplasm removal could be painful for your horse, on a hot surface zone where the cataplasm could warm too fast.*

### **Conclusion**

*Take the time it need to apply the treatments and complete it in a proper way. Be sure to understand the situation and the environment of the horse is involved. A good veterinarian to insure a good diagnostic on important concerns is really important, but the collaboration of everyone involve with the horses is required. We should never forget that the owner, the trainer or the horse caretaker are the ones that are mostly first in touch with the horse in almost every situations. They normally know about their horses: reactions, behaviour, work done, character. In case of emergency or in daily care, they need to be informed. The same is true for veterinarians that should have competent knowledge to answer questions on this subject. In those days, you can hear very often some owners complaining about the low offer of alternative treatments for horses, because in this field "allopathic" medicine*



*is still considered very often the only choice. But threats are very common: antibiotic in excess can cause gut microflora troubles; the same antibiotic injection way can cause local injuries; cortisone and other anti – inflammatory drugs are very often used to diminish pain but can also be really dangerous. On the others hand, veterinarians that would like to suggest something alternative considering questionable result obtained in some cases with traditional medicine experience a lack of knowledge in many alternative medicine fields. This led to owners apply to different people, jumping from one therapy to an other, asking themselves where they are going in this. Who says the truth? There is, then, a real need to deepen the knowledge in alternative treatment for horses illnesses. The knowledge on herbal based cares represent a good alternative and/or combinative solution. An invitation is made for researching, learning, organizing and establishing on the natural health's products. There is a huge interest for this and it's unavoidable to consider it as a useful tool. The same is for clays: its long term use stands for their ability to act as health tools in many situations. To deepen the knowledge on their properties on scientific basis can offer us new ideas and help us in taking more and more care of our horses. □*