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DAVID DUCKETT A.F.C.L. (Hons)

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FOOT GROWTH

"No foot, no horse" - words a farrier knows only too well, Nationally the problem arises with all farriers and that is the lack of horn growth, followed by over-shoeing, the whole reputation lies with his ability to keep shoes on for a basic period of time. His responsibilities lie not only in the shoeing, but attaining a well maintained hoof.

In my research for my essay there is no doubt that it has enlightened me towards a better understanding of this basic problem. Obviously I have encountered these problems myself and the literature available on this subject is sparingly written.

Simple tests of various oils for hoof dressing for improvement of the nature and condition of the horn which I have tried with the enthusiasm of the owners and from various concoctions both manufactured and marketed to the old wagoner/groom down the road, yet I have still failed to see any improvement over a period of months. A product on the market called cornucrescine has been tried personally by myself with a little success, but the enthusiasm of the groom diminished rapidly after a short period of time, because of the work involved in the application to stimulate the horn growing areas.

Horses which are kept on deep littler beds tend to have a good growth rate of the foot and especially the sole. The reason for this being that the heat from the horses body together with the heat of the methane in the compost thus with a higher temperature than normal stimulates the papillae - but of course this type of bedding carries germs and is not recommended, so I decided to make simple tests and observations with the horses that had these problems. These horses range from 14.2 hands upwards, four in all. At first I categorised them in the order of condition of foot which ranged from reasonable horn growth to very poor.

Making a start was extremely difficult, not knowing which direction to take, so I decided to try and understand a little of their environment and their basic diet. At this point I gained a terrific amount of encouragement and help from their owners.

TEST A - A horse 15.2 hands, part-bred gelding, owner Mr. D. Charlesworth. This by far being the best of my examples - hunted regularly, main diet grazing supplemented with oats, bran, nuts and hay. As the main diet was grazing I decided to take soil samples in my search for the problem. With bucket, trowel and task in hand I found that this horse was grazed on two pastures alternatively, sampling both fields was a must but with the aid of the owner I was able to get the soils analysed for these and all my tests with the Ministry of Agriculture.

TEST B - A pony 14.2 hands, a light breed, owner Mrs. T. Newcombe. The growth of horn on this pony is to the poorer side of test A. Having this pony under observation for a long period of time I had

noticed a definite fluctuation in condition of the foot. On questioning the owner I found that this pony was grazed under similar conditions in two different pastures alternatively of periods up to approximately two months or so and of course I took soil samples from both fields.

TEST C - A horse 15 hands, sturdy hunter type, owner Miss Fitton. It is only fair to say that this is the second animal, the first being a pony. The conditions of this pony's feet were bad and the difficulty of shoeing that arose with this pony were such that I was relieved when it was exchanged for a larger animal. The afore named hunter when it arrived had perfect, well balanced and well shod feet. A credit due to the farrier concerned, but in a course of ten to twelve months the feet deteriorated to a condition similar to that of the pony. Grazed in a single pasture the soil sample was taken.

TEST D - My last test, a thoroughbred 16.1 hands, owner Miss T. Gorman. This animal is grazed in various pastures supplemented only with hay. The reason for no added feeds is because of his highly strung nature. This is my worst example of foot growth.

On studying the soil analysis I find the figures are given for magnesium, potassium, phosphorus and lime. I find that potassium is for maintaining the correct composition of body fluids which is irrelevant to my studies. Magnesium has a smaller part to play than limestone-calcium and phosphorus but closely associated with them plays a large part in connection with bone deformaties. The amount of magnesium can be either helpful or harmful accordingly. Limestone and phosphorus

can more or less be counted as one because of their necessity for their horn and bone growing agents. It is noted through reference that the introduction of Vitamin D plays an influential part in warding off bone deformaties. The report also states the soil texture and each animal is grazed off soil which is from a loamy sand origin. To understand this type of soil texture and to define the difference the studies take us from the extremes of sand to clay, a loam being medium. A sandy soil is porous with a good drainage, but unfortunately with the drainage it washes away various minerals that are necessary and retains little water. To retain these basic minerals humous should be added to the soil which will make it more fertile. Clay soil however, is of course the opposite and also with the introduction of humous allows more air, but is rich in minerals because they are not washed away with the water. Poor airiation and drainage is of course the result in the accumulation of organic acids formed from the decaying plants which make the soil sour. However, a loam being the best type of soil and is one which is light warm and rich in minerals contains plenty of water without becoming water-logged. I do feel at this stage that I was drifting away from my objective, but I feel that the necessity to understand the facts and figures of this report is a must so we find that the introduction of lime to either soils acts as a nutrilizer. Horses grazed on either soil types we can assume, must have the correct balance of minerals which may need attention periodically by a professional body. With regard to the ideal balance, we observe our neighbours the Irish and their reputation for the development of substance "naturally" in their horses, and noting that their main studs are in a belt from Dublin to County Cork. The soil type is humous high in mineral salts and on a basic slag or limestone base all these resources are natural and shows in their product.

Summarising our own tests, all of which as stated are on a loamy sand we can assume then that we have the ingredients of a reasonable soil but with the assistance of man will make it a good grazing pasture. Unfortunately, with the grazing of horses, bone, horn growing agents and the soil horse owners do not realise the importance of the connection.

Reverting back to the introduction of the tests I stated that the order of condition of foot was placed in a category from reasonable to poor growth and in addition to this a rasp mark was placed just under the coronary band. The evidence of the horn growth was substantiated by my own judgment, but the surprising factor being that the deficiency figures for phosphorus in the report also came remarkably well in line with these marks.

It is all very well talking about grazed animals which have access to these minerals, but stabled horses don't! We have to consider that they are under a professional guidance combining a training and feeding programme. Some of my own work consists of these circles. I observe a race horse coming into training say in July or August will have a complete change of diet-as the months progress we find that the affect of the change brings a surge of growth from the coronet. This however, becomes somewhat of a nuisance around February because the surge brings a ridge or groove, and this groove comes into the region of the nails when shoeing, for want of a better name for it I call it the "February groove", similar applies when a horse has had a severe illness. Noting the stabled horses feed it consists of addictives, various brands are on the market. Kossolian, Equivite, Equiform and so on, but the largest ingredient in these supplements not surprising, is calcium and phosphorus. Maybe this is the reason for the surge of growth, it being produced in a condensed

White feet noted as being "soft or not so good as black feet" words that are spoken quite often but with no explanation and certainly I have never heard of or read one yet. I feel that a white foot may not look as good when they have a poor growth rate, the reason being that splits and old nail holes are a contrast in colour and therefore is more noticeable to the eye. If the growth rate is good most of these blemishes would be removed. A practical example of this is taken from a client of mine, Mr. Fox (not fictional). A farmer with a heavy weight hunter with four white feet. The nature and condition are first class with a very good growth rate. On questioning him I soon realised that he farmed in the true sense, meaning that, the minerals of his soil where kept to a high level. The soil on his land is of an acid type and he treats it quite frequently using the limestone waste from the beet factory. I also find as no surprise this has a large percentage of phosphorus.

How the mind boggles that the minerals of the soil arrives at the horn growing areas of the hoof. Consulting my simple biology notes, assuming that we have a well balanced soil, plant life absorbs the mineral salts. The horse takes this through its digestive system the blood then takes the mineral salts through its stream of plasmer ? to the areas of need.

If we make an example of a horse on good grazing pasture and he is healthy in body and foot and observe him throughout a full twelve months, kept solely off the land. Starting from spring, we find that he has a high rate of foot growth due to the rich shoots of grasses and plant life taking him through summer and up until autumn, we find that the nutrition of the plant life is still there but tapering off through autumn and into winter the animal is living off its own body fats which it has built up in the past months, grazing its pastures to the ground

and plant life diminishing because of the cold weather. Through winter this type of horse is usually fed hay, but this is a great contrast from the rich sweet foods of the summer. The condition of the animal falls, so also does the rate of foot growth. It is my opinion that the minerals of the blood stream are in a reservoir and it takes approximately three and a half to four months for them to become depleted. This is the reason for the slowing down of the growth rate during the winter months and it is not until the spring comes that the system reduvinates. I must stress that the system is never without these minerals but it seems that they fluctuate through the alternating seasons or different pastures. The point I am making is that the soils that are deficient in spring are equal to the soils of a good pasture of autumn or winter, therefore, if the animal does not attain a high percentage of minerals in spring the rate of foot growth is to be slower.

In conclusion, I feel that with our problem the land on which these horses are grazed must be analysed and treated accordingly with professional guidance, and in the meantime, whilst this full circle is taking place we resolve to our mechanical methods in dealing with this outstanding difficulty.

From my studies for this essay my outlook now stems further not only in this problem, but in many others.

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