

BIT ' S PAD TEST

Saddled up with...

How many of us have not come across the little patches of white hairs on the withers of a horse: old pressure spots as a result of a badly-fitting saddle or delicate skin. There is a wide range of mats, pads and cloths on the market that can prevent or cure these patches. They spread the pressure of the saddle over a greater area and absorb shocks. They are made from gel, lambskin or foam rubber. But which pad should you choose?

THE TEST

At Stúbben a test "horse" and a 17.5 inch saddle of the Roxanne type (jumping saddle) were awaiting us. The test "horse" is used in the factory for saddle fittings and is the same shape and dimensions as a horse's back. On the test "horse" is a measuring mat from Jan Hermkens with sensors to measure the pressure. The data travels via a thick cable to the computer that makes an analysis and graphical image of it. A saddle pad, the saddle and a 25-kilo sandbag are placed on this mat one after the other. The weight is a minimum of the rider's weight that presses on a specific place on the saddle. Hermkens measures for five minutes per pad, so that the measuring mat can adjust itself properly. The result is a coloured plate, in which the contours of the saddle can be seen. Each colour stands for a particular pressure. The test is an imitation of reality. The effect of a moving horse's back does not form part of the test; movement and friction are therefore not charted. The test is a fair indication for the most basic requirement that we can make of a saddle pad, i.e. to spread the pressure. It is also the only way in which to make an objective comparison between the respective pads.

Bit took a random selection from the plentiful supply of saddle pads and set off for the Stúbben saddle manufacturer's in Krefeld, Germany. The test team carefully examined ten pads. Jan Hermkens of FSA Drukmetingen (FSA Pressure Measurements) took the measurements that provide information about the quality of the pads. Hermkens is an expert in the field of pressure measurements in saddle fittings. Henk Winkelman, a biomechanics engineer and visiting lecturer at Hippische Beroepsopleidingen (Professional Equestrian Training) in Deurne, helped to interpret the test data.

We measured the average pressure, the maximum pressure and the contact surface area of the pads. This is useful information that together with simple data, such as the washability of the material and the price, can tell us something about the value of a pad. It is a good idea, first of all, to consider why you want to use a saddle pad.

- 2 -

It would be a Utopian dream to think that a pad could solve the problems of a badly fitting saddle. This type of 'cushion' can bring relief for a short time in such cases, but in the longer term it is not the solution. Anyone who wishes to make horse-riding a pleasant experience for themselves and the horse must first of all ensure that they have a saddle that fits properly. A pad can be a good idea for a sensitive horse's back. Every manufacturer declares that his product works in the best possible way, but you really have to test them out in practice. Up to now, no independent, objective studies have been carried out on how pads work. The comment by Udo Rockel, the saddler at Stübben, is short but revealing: "A gel pad relieves and spreads the pressure. That is not a bad thing, but whether or not it is a good thing, is another story". Equine physiotherapist Jarco Dun also prefers it if riders do not use a pad. He prefers to work on improving the rider's sitting position.

Average pressure <i>in grams/cm²</i>		
1. Mattes Lambskin	Very good	33
2. Polypad	Very good	37
3. Bay Jacobsen	Very good	38
4. Gelite	Good	59
5. Orange foam	Adequate	72
6. Global	Adequate	77
7. Aero Gel	Fair	80
8. Equigel	Fair	86
9. Action Backpad	Fair	91
10. Alfa Gel	Mediocre	106

The average pressure indicates the extent to which the pad spreads the weight that the saddle and rider produce. The lower the average pressure, the better. We first of all measured the average pressure of the saddle with the sandbag and without the pad. This pressure was 121 grams/cm². All pads have a lower average pressure. That means that in any case they spread the pressure better than the saddle itself. Technical expert Henk Winkelman commented briefly on the operation of a pad: "People think that something like that takes away the pressure. That is an old wives' tale. The pressure remains the same, but it is a matter of how this pressure is distributed. You want as little peak load as possible. The pressure must be spread evenly over the whole back". There was some difference between the pads. The lowest measured average pressure was 33 and the highest

106 grams/cm². That is about three times as much. Here, the Mattes came up as the best. This pad is made from medicated lambskin.

Udo Rockel, the saddler at Stübben, commented spontaneously without knowing the test result on the lambskin: "Nature against nature is always a good thing!" The Mattes is the only natural product among the pads. All other models tested are synthetic. In addition to the lambskin, Rockel mentioned the Bay Jacobsen pad, "That is also a good one", he said. It may be a coincidence, but also without knowing the test result the saddler picked the best of them on the basis of his gut feeling.

- 3 -

All pads distribute the pressure better than a bare saddle, but what happens if we place a saddle blanket under the saddle. We performed the test with an ordinary, fairly inexpensive saddle blanket and wondered what the effect would be. The average pressure with a saddle blanket was 66 gram/cm², which meant that six saddle pads already dropped out at this stage. Equigel, Action Backpad, Global, Alfa Gel, Aero Gel and the orange foam rubber produced a higher average pressure. That means that they therefore do not spread the pressure as well as an ordinary saddle blanket.

Maximum pressure <i>in grams/cm²</i>		
1. Bay Jacobsen	Very good	237
2. Mattes Lambskin	Good	336
3. Polypad	-	≥ 408
4. Equigel	-	≥ 408
5. Action Backpad	-	≥ 408
6. Global	-	≥ 408
7. Alfa Gel	-	≥ 408
8. Aero Gel	-	≥ 408
9. Gelite	-	≥ 408
10. Orange Foam		≥ 408

In addition to the average pressure it is of course also important to know the maximum pressure and the place where it occurs. With all pads we find the maximum pressure at the same place, i.e. under the panels. This is in itself not surprising because the centre of the rider's weight is situated there. Through the measuring range of the measuring mat in almost all the pads we measured a maximum pressure of 408 grams/cm² or more. It is not possible to make a comparison on this point. And it is also not necessary. According to biomechanical engineer Henk Winkelman, the level of the maximum pressure is not so important. Of greater importance is the size of the surface area where this maximum pressure occurs. "I would prefer someone to tread on my toes with a heavy climbing boot than with a stiletto heel", he says. We therefore also especially compared the surface areas where the maximum pressure occurred. The two pads with a maximum pressure of less than 408

grams/cm² can of course be considered good in this area, irrespective of the surface area. The Bay Jacobsen came up as the best. This pad is made from temperature-sensitive material. We performed the test at room temperature, but when this material becomes hotter, it becomes more flexible. According to the manufacturer, this aids its operation.

On the chart of the orange foam rubber pad four pressure peaks showed up, on the withers, the spine and under the two panels. These peaks are spread over a small surface area. Winkelman has a clear view about these pads: "The spinal column is not free. The pad is much too stiff. Because of this the material does not move with the shape of the saddle and presses like a board. The pressure falls entirely on the wrong places". A point at which to compare the other pads is the surface on which the maximum pressure occurs. The redder it is, the greater pressure a horse has on its back. The Alfa Gel showed up a large red area - both under the panels and on the shoulders. This pad also showed a peak on the withers. This means that the weight of the saddle concentrates on those places. Pressure points often occur on the withers or around the shoulder, the places where the most pressure occurs.

- 4 -

Henk Winkelman says: "This pad produces enormous pressure over the whole back. The weight is not spread evenly, so why use them at all?". The aspect of pressure on the withers is particularly interesting. The Equigel, Action Backpad, Global, Alfa Gel and the orange foam rubber all showed a pressure peak on the withers. The Global and orange foam rubber were fairly stiff and could not be drawn up into the gullet to remove this pressure. The rider can easily tuck the other three into the gullet: this is vitally important to prevent pressure spots on the withers. The gullet of a saddle gives the horse the opportunity to bend its spine. This occurs, for example, if you do a volte with a horse or just ride the horse into the corners of the school.

If the gullet is full of the material of a pad, the horse can no longer so easily bend its spine and the pad is to blame, which is an undesirable consequence. This also emerged from the measurements. The Bay Jacobsen, Gelite, Equigel, Action Backpad, Aero Gel, Polypad and Mattes all to a lesser or greater degree press on the withers. Henk Winkelman says: " Pressing at the gullet limits the horse's freedom of movement. I try to explain this to people by grasping them by the neck. If they then try to turn their head, they cannot do so as the vertebra are trapped. A saddle that presses on the withers has the same effect. You can resolve this problem when you are measuring up for a new saddle by fitting a pad".

Contact surface area <i>between pad and back in cm²</i>		
1. Polypad	Very good	1.617
2. Mattes Lambskin	Very good	1.584
3. Bay Jacobsen	Adequate	1.243
4. Gelite	Fair	1.089
5. Alfa Gel	Fair	1.012

6. Aero Gel	Mediocre	957
7. Equigel	Mediocre	957
8. Global	Mediocre	924
9. Action Backpad	Mediocre	913
10. Orange foam	Mediocre	891

In addition to the average pressure and the maximum pressure the total surface over which the pressure is spread is also important. Just try sleeping on a hard board. It is not very comfortable. The board does not mould itself to your body, so that all your weight presses on your shoulders and hips. A waterbed moulds itself to your body and thereby spreads the weight over the whole body, so that it feels very comfortable and doesn't cause any pressure points. We try to have a 'waterbed' under the saddle pads. There is therefore the maximum possible contact surface area, so the weight of the rider and saddle are distributed in the best possible way.

It is notable that the pads that spread the weight over the greatest surface area also show the lowest average pressure. The size of the saddle pads roughly corresponds to the size of the saddle. The Polypad, Mattes and Bay Jacobsen are all bigger than the saddle and also show the lowest average pressure. It therefore really seems to be true. The larger the pad, the better the pressure distribution. The pad that has the greatest contact surface area is the Polypad.

FINAL RESULT

Best buy

The **Polypad** has a good price/quality ratio. The price is in the middle of our range (€ 55.95) with good quality. An additional financial advantage is that this pad can be used without a saddle blanket. The Polypad is available in various models in black, white, blue and green. It can be machine-washed at 40°C.

For the test we used the general-purpose model. The robust fabric covering is filled with shock-absorbing polyester fibres. At 37 grams/cm² this pad gives almost the lowest average pressure. Winkelman says: "I am very pleased with the Polypad. The pad spreads the weight over a very large area, although the maximum pressure is above 408 grams/cm²". The Polypad is one of the better pads, at a reasonable price.

The pressure distribution scale runs from blue (little pressure) to red (a lot of pressure). The spot shows where the centre of the pressure occurs.

Best backpad

The **Mattes lambskin pad** comes in black, grey and yellow. Lambskin is a natural product on which bacteria and viruses do not survive. The pad can be

machine-washed at 30°C and tumbled dried afterwards. On the front of the pad is Velcro, so that it stays in place. The weight of the rider is spread over a large area and no pressure occurs on the withers. The Mattes lambskin pad is available in various models from € 70. This means that this pad is almost the most expensive one of all the models we tested. However, it does have many advantages that make it the winner in the test. The average pressure of the lambskin is the lowest of all the pads tested. Together with the Bay Jacobsen this is the only pad with a maximum pressure within the measuring range. The contact surface area is the largest after the Polypad. Winkelman says: "If you want to put something in between, then you can do so. This sheepskin spreads the weight well".

GOOD AND BAD POINTS

pad	average pressure	maximum pressure	surface area	price	price/quality
Bay Jacobsen	+++	+++	+	0	+
Gelite	++	-	0	0	-
Equigel	0	-	-	+	+
Action Backpad	0	-	-	-	-
Global	+	-	-	+++	+
Alfa Gel	-	-	0	++	+
Aero Gel	0	-	-	0	0
Polypad Classic	+++	-	+++	+	++
Orange foam	+	-	-	+++	_
Mattes Lambskin	+++	++	+++	0	++
+++ = very good ++ = good + = adequate 0 = fair - = mediocre _ = bad					