From the Department / University Clinic for Farm Animals and Public Health in Veterinary Medicine
of the University of Veterinary Medicine, Vienna

Institute of Animal Nutrition and Functional Plant Compounds
(Head: Univ.-Prof. Dr. sc. agr. Qendrim Zebeli)

Study on the Effectiveness of a Selected Herbal Juice as a Feed Supplement in the Treatment of Headshaking in Horses

Diploma Thesis, University of Veterinary Medicine, Vienna

Submitted by **Magdalena Schweiger**
Vienna, November 2023

Translation Notice This document was originally written in German and has been translated into English using AI translation technology. The translation aims to preserve accuracy, clarity, and the original meaning of the source material.

Supervisor:
Dr. med. vet. Isabella Hahn-Ramssl
Institute of Animal Nutrition and Functional Plant Compounds

In collaboration with **EWALIA – Herbs for Horses and Pets GmbH**
(Industriestraße 264, A-8321 St. Margarethen/Raab, Austria).

Special thanks to **Mag. phil. Dr. rer. nat. Alexander Tichy** for assistance with the statistical analysis.

Reviewer:
Ass.-Prof. Dr. med. vet. Klaus Riedelberger
Clinical Department for Internal Medicine of Horses

Table of Contents

1. Introduction

Headshaking is nowadays described in veterinary medicine as a complex of symptoms, the most prominent characteristic of which is vigorous and rhythmic head tossing or shaking. This movement may occur in a vertical, horizontal, or rotational direction. In most horses affected by headshaking, the behavior appears without any obvious external stimulus. The severity of headshaking varies greatly between individual horses and, in severe cases, can render a horse unrideable.

In the literature, a variety of causes of headshaking have been described. Depending on the underlying cause, the intensity, duration, and occurrence of symptoms, as well as accompanying signs, may vary. These accompanying symptoms can include, for example, snorting, rubbing the nose on the foreleg, and avoidance of light, wind, and/or heat; ocular and/or nasal discharge may also occur.

The symptom complex is classified into three forms (Beckert-Schäfer 2001, Gehlen 2017, Hills et al. 2002):

1. Stereotypical headshaking

2. Symptomatic headshaking (also referred to as *secondary headshaking*)

3. Idiopathic headshaking

Stereotypical headshaking is a genuine behavioral disorder or anomaly, which occurs only in domesticated animals. The horses display sudden, reflex-like up-and-down or side-to-side head movements. In contrast to the other forms, this type shows no accompanying symptoms.

Symptomatic headshaking is considered a symptom resulting from an underlying disease. Such underlying conditions may include lameness, back problems, cervical spine abnormalities, allergies, dental or sinus diseases, or disorders affecting the ears or eyes.

In **idiopathic headshaking,** no underlying disease can be identified, and the exact cause remains unknown. However, it is suspected to involve irritation of the trigeminal nerve (Nervus trigeminus) is involved.

A subtype of idiopathic headshaking is photosensitive headshaking, in which horses show a pronounced sensitivity to light.

The first two forms occur in approximately 10% of cases, while idiopathic headshaking represents the most common form, accounting for around 90% (Beckert-Schäfer 2001).

The company Ewalia – Herbs for Horses and Pets GmbH (Industriestraße 264, A-8321 St. Margarethen/Raab, Austria) developed and produced a herbal juice ("Shakingsaft") intended to alleviate the symptoms of headshaking. This product was tested on 10 horses as part of an observational study. In this blinded cross-over pilot study, it was found that—despite the small number of subjects—there was a statistically significant improvement in the symptoms of horses in motion compared to their condition before treatment. However, no significant effect was observed at rest or during the placebo phase (Gruarin 2020).

A cooperation agreement exists between Ewalia GmbH and the University of Veterinary Medicine, Vienna (Vetmeduni Vienna). Ewalia served as the main coordinator of the study and was responsible for the practical implementation involving the horses. The company's staff recruited study participants through social media, word of mouth, and company client lists. Ewalia also produced the two test juices in-house and distributed them to participants along with questionnaires.

The preliminary survey and questionnaires were designed by the Vetmeduni Vienna student, who also conducted the final statistical analysis of the collected data.

The Ewalia Shakingsaft consisted of aqueous extracts from the following plants:Rosenwurz (Rhodiola rosea), Mariendistel (Silybum marianum), Taigawurzel (Eleutherococcus senticosus), Macapflanze (Lepidium meyenii) und Traubenkernextrakt

Rhodiola rosea is a traditional medicinal plant in Eastern Europe, recognized as a CNS stimulant and antidepressant, and is used in the treatment of fatigue (Tharakan & Manyam 2006). Furthermore, it exhibits anti-inflammatory properties, for example in cardiovascular diseases, neurodegenerative processes, arthritis, and metabolic disorders (Pu et al. 2016). The constituents of Rhodiola rosea include phenylethanoids, benzyl alcohol derivatives, phenylpropanoid derivatives, flavonoids, flavolignans, and essential oils....(https://arzneipflanzenlexikon.info/index.php?de_pflanzen=139, accessed September 20, 2022). In the Shakingsaft, the root drug of *Rhodiola rosea* is used.

Eleutherococcus senticosus (Siberian Ginseng) has a positive effect on the immune system, enhancing the body's defensive capabilities and helping horses adapt better to stressful situations or increased performance demands (Beckert-Schäfer 2011). Furthermore, Siberian ginseng is known to improve performance and concentration in both animals and humans (Pahlow 2013). Its main constituents include lignans, hydroxycoumarins, triterpene saponins, steroid glycosides, phenylacrylic acid derivatives, and polysaccharides (https://arzneipflanzenlexikon.info/index.php?de_pflanzen=139, accessed September 21, 2022).

Silybum marianum (Milk Thistle) fruits improve liver function in both humans and animals. Additionally, they have a positive effect on metabolism in horses and can assist in the management of lameness (Dockalova 2021). The most important active compounds of milk thistle include silymarin, flavonolignans, silybin (also known as silibinin), silychristin, silydianin, silandrin, fatty oil, tocopherols, and sterols (Aichberger 2006).

Lepidium meyenii (Maca root) originates from South America and is known for its antidepressant and antioxidant properties. It also exhibits neuroprotective and anti-inflammatory effects (Leitão Peres et al. 2020). Moreover, maca provides energy, enhances endurance and resilience (Pahlow 2013). The root is rich in nutrients, containing carbohydrates, proteins, and amino acids (arginine, serine, histidine, aspartic acid, glutamic acid, glycine, valine, phenylalanine, tyrosine, and threonine), as well as essential fatty acids (linolenic, palmitic, and oleic acids) and vitamins (B1, B2, B12, and C). In addition, it contains tocopherol, minerals (iron, zinc, magnesium, potassium, phosphorus, and calcium), mustard oil glycosides, saponins, sitosterols, tannins, and glucosinolates (https://www.ewalia.at/ewalia-magic-tipps/kraeuterlexikon/maca-die-wunderknolle, accessed November 22, 2022).

Grape seed extract has antioxidant properties and promotes cell regeneration. Additionally, it exhibits anti-inflammatory, antipruritic, and immunostimulatory effects (Abdel-Kawi et al. 2016). The extract contains a high proportion of oligomeric proanthocyanidins (OPCs) (Holzauer et al. 2015).

The placebo juice (composed of water, various flavoring agents, and food coloring) was likewise specially produced by Ewalia GmbH for this study. It was designed to match the Shakingsaft in color and smell, so that no noticeable sensory difference was apparent to participants. This allowed the study to be conducted in a double-blind manner.

1.1. Research Questions

To identify and exclude horses with symptomatic (secondary) headshaking, a preliminary survey was conducted. The study then aimed to address the following questions:

- Can the symptoms of headshaking in horses be improved by the daily oral administration of a selected herbal juice (“Shakingsaft”) as a feed supplement, compared with a placebo juice?

- Are there any differences in the horses’ behavior following the administration of the two juices?

1.2. Hypotheses

The preliminary headshaking survey served to identify suitable participants and exclude horses suffering from symptomatic (secondary) headshaking.

- The symptoms of headshaking in horses improve through daily oral administration of the selected herbal juice (“Shakingsaft”).

- There are behavioral differences in the animals after administration of the two juices.

2. Materials and Methods

2.1. Preliminary Survey

The selection of study participants began with the distribution of the “Preliminary Survey” form via email to horse owners. This questionnaire included questions regarding the horse’s details, housing and feeding conditions, and the presence of headshaking symptoms (see Appendix 1).

Potential study participants were informed about the project through a press release titled *“Herbal Juice for Headshaking – Pilot Study Confirms Significant Symptom Improvement!”* and an article in the *Reiterjournal* entitled *“Successful Pilot Study on Ewalia Herbal Juice for Headshaking.”* These materials were published by Ewalia GmbH.

Additionally, Facebook and Instagram posts were created by Ewalia to announce the study and allow interested individuals to apply for participation.

Horse owners who responded to the call were asked to complete the “Preliminary Survey” form and return it by email either to the company or to the student conducting the research. The collected responses were then evaluated to determine which horses met the inclusion criteria and could be admitted to the observational study.

2.1.1. Inclusion Criteria

- Horses of any age, breed, and sex showing typical symptoms of headshaking or having a diagnosis of headshaking, excluding symptomatic (secondary) headshaking.

2.1.2. Exclusion Criteria

- Horses with symptomatic (secondary) headshaking.

The horses that met the inclusion criteria participated in a double-blind cross-over observational study.

2.2. Questionnaire Study

In this cross-over observational study, the participating horses were randomly assigned to two groups: Group 1 received the Shakingsaft during Phase 1 and the placebo juice during Phase 2. Group 2 received the placebo juice during Phase 1 and the Shakingsaft during Phase 2. The study was conducted in a double-blind design, meaning that neither the horse owners nor the investigators (except for one Ewalia employee responsible for distributing the juices) knew which horse received which product during each phase. Blinding was only lifted after the completion of data analysis. Each horse received the respective juice orally twice daily for 28 consecutive days. Between the two 4-week treatment phases, there was a washout period of 14 days, during which no juice was administered. The study thus followed the sequence: Phase 1 (4 weeks) – Washout (2 weeks) – Phase 2 (4 weeks).

Feeding Schedule for Group 1

Group 1 began the study with administration of the Shakingsaft, given twice daily at the corresponding dosage for each horse (see Table 3). After completing the first 28-day treatment phase, there was a 14-day washout period with no juice administration.Following this, Phase 2 commenced, during which the participants administered the placebo juice twice daily for another 28 days (see Table 1).

Table 1: Feeding Schedule – Group 1

Phase 1	**Washout period**	**Phase 2**
Duration: 28 days	Duration: 14 days	Duration: 28 days
Twice daily Shakingsaft		Twice daily Placebo juice

Feeding Schedule for Group 2

The feeding schedule for Group 2 differed from that of Group 1 only in the sequence of administration. In this case, the horse owners administered the placebo juice during Phase 1 and the Shakingsaft during Phase 2 (see Table 2).

Table 2: Feeding Schedule – Group 2

Phase 1	**Washout period**	**Phase 2**
Duration: 28 days	Duration: 14 days	Duration: 28 days
Twice daily Placebo juice		Twice daily Shakingsaft

Dosages

The dosage instructions for the juices were provided by Ewalia GmbH (see Table 3). Each horse owner received a dosage chart included in the package with the juices, indicating the exact amount in milliliters (ml) to be administered daily based on the horse's body weight.

Table 3: Dosages of Shakingsaft and Placebo Juice

Horse Body Weight (kg)	**Daily Dosage of Shakingsaft / Placebo juice (ml)**
100	2 x 8
200	2 x 16
300	2 x 24
400	2 x 32
500	2 x 40
600	2 x 48
700	2 x 56
800	2 x 64

The two questionnaires — "Questionnaire at Rest" and "Questionnaire in Motion" (see Appendix 2) — were delivered to the horse owners along with the juice packages for all observation periods.

Before the start of the observational study, as well as during Phase 1 and Phase 2, the owners were required to complete each questionnaire three times. These were filled out during the 3rd and 4th week of each phase, following six-minute observation sessions of their horses' symptoms (see Table 4).

The horses' symptoms were rated on a Visual Analogue Scale (VAS) ranging from 0 (no symptoms) to 10 (severe symptoms), where owners marked the perceived symptom intensity with a line on the scale.

To ensure consistent data collection, there had to be a minimum interval of 48 hours between the completion of two consecutive questionnaires. Both the rest and motion questionnaires were therefore completed at clearly defined observation times throughout the study.

Table 4: Time Points for Completing the Questionnaires

Before start	**Phase 1**	**Washout period**	**Phase 1**
3 x	3 times in the 3rd week 3 times in the 4th week	-	3 times in the 3rd week 3 times in the 4th week

At the end of each cross-over observational study, the completed questionnaires were returned by the participants either in a prepaid return envelope or scanned and sent via email to Ewalia GmbH. After collection, all gathered data were first summarized descriptively. Subsequently, group comparisons were carried out as follows:

- Differences in frequencies were analyzed using the Chi² test.
- Differences between groups concerning interval-scaled variables were examined using a t-test for independent samples.
- Correlations between variables were analyzed using the Pearson correlation coefficient.

The term "fly net" in the study referred collectively to fly masks, nose nets, and fringe bands.

3. Results

A total of 30 interested participants were recruited by Ewalia GmbH staff, and an additional 27 horse owners responded to Ewalia's social media posts, resulting in 57 applicants in total.

Out of these 57 horse owners, four were excluded from participation, as the evaluation of the preliminary survey indicated that their horses were most likely "symptomatic headshakers."

The four excluded horses showed the following pre-existing conditions:

- Severe allergies to pollen, wheat, soy, carrots, and apples
- Spinal ataxia
- EOTRH (Equine Odontoclastic Tooth Resorption and Hypercementosis)
  Zinc and selenium deficiency, where the headshaking symptoms improved after supplementation

3.1. Evaluation of the Preliminary Survey

In total, 53 preliminary surveys were evaluated. The gender distribution of the horses was 19 mares and 34 geldings. The ages ranged from 4 to 29 years, with approximately one-third (32.1%; n = 17) of the horses being between 10 and 15 years old.

Of these 53 horses, 31 (58.8%) had pre-existing conditions, most of which were orthopedic issues such as previous tendon injuries, bone spavin, arthritis, or laminitis. Other recorded conditions included:

- Respiratory diseases (e.g., cough or RAO – recurrent airway obstruction)
- Endocrine disorders (e.g., Cushing's disease)
- Dermatological problems (e.g., sweet itch, sarcoids, or skin wounds)
- Gastrointestinal disorders (e.g., gastric ulcers or colic)

These horses were nevertheless included in the study, as such conditions do not cause secondary (symptomatic) headshaking and therefore did not meet exclusion criteria.

The majority of participants (67.9%; n = 36) had their horses' headshaking symptoms examined by a veterinarian. The most frequently performed diagnostic procedures included the general clinical examination and laboratory diagnostics.

Many participants also had their horses undergo dental examinations or bronchoscopies in addition to the general clinical and laboratory evaluations.

Regarding the severity of headshaking, 61.5% (n = 32) of the owners reported that their horses suffered from moderate headshaking, meaning the horses showed noticeable but manageable symptoms and were still rideable. A further 23.1% (n = 12) were classified as having mild headshaking, in which the horses displayed only minor symptoms and remained fully rideable. Only eight horses (15.4%) were described by their owners as showing severe headshaking, characterized by very intense symptoms that rendered the horses no longer fit for riding.

As shown in Figure 1, the symptoms most frequently observed were vertical and horizontal headshaking — with 37 horses exhibiting vertical and 25 showing horizontal movements — as well as snorting and rubbing the nose on objects. Other frequently mentioned symptoms included general head tossing, active avoidance of light, heat, or wind, stumbling, nasal discharge, and watery eyes or eye discharge.

The least frequently observed symptoms according to the owners were rotational head movements, flehmen behavior, sneezing, unusual or heavy breathing, panic reactions, and refusal behavior.

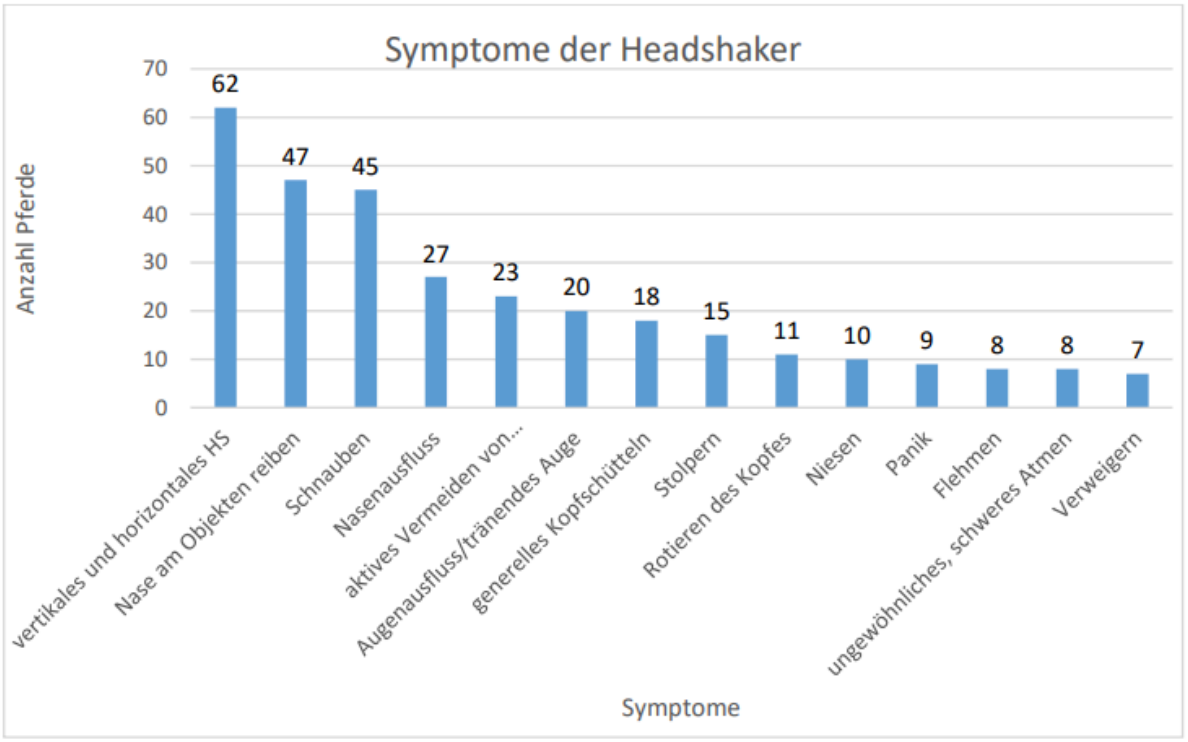


Fig. 1: Headshaking symptoms observed in the horses according to their owners

Another aspect examined in the study was the season and weather conditions during which headshaking occurred most prominently. The results showed that, for almost all horses, the symptoms appeared most distinctly in spring and summer, each accounting for 39.6% (n = 19) of the cases. With regard to weather conditions, 72.4% (n = 21) of the horses showed the strongest reactions on sunny days. In some horses, the symptoms also intensified during windy weather, reported by 13.8% (n = 4) of the participants.

When asked whether environmental factors or changes influenced the severity of headshaking, 51 horse owners indicated at least one influencing factor, while only two participants stated that such changes played no role for their horses. More than half of the respondents (53.1%; n = 28) reported that more than two factors had an effect on symptom intensity. The environmental or situational influences most frequently mentioned were movement, stress, pollen exposure, and direct sunlight.

Among the previously attempted treatment methods, the most frequently used was the fly net, with only three participants indicating they had not tried it. In addition, 62.3% (n = 33) of the owners had already administered medications or feed supplements to their horses, and 32.1% (n = 17) had attempted to alleviate the headshaking with a blanket. Furthermore, 37.7% (n = 20) had tried other treatment approaches such as acupuncture, osteopathy, or masks with UV protection.

The reported success rates of these therapeutic attempts were 49.1% (n = 26) for the fly net, 34% (n = 18) for medications and feed supplements, 9.4% (n = 5) for the blanket, and 18.9% (n = 10) for other treatment methods, according to the owners' accounts.

In the statistical evaluation of whether there was a relationship between the number of hours spent on pasture or the amount of time spent feeding and the severity of headshaking, no conclusions could be drawn due to the low number of responses to these questions.

When analyzing whether the age of the horses correlated with the severity of symptoms, or whether there were differences between mares and geldings, no significant relationships were found.

3.2. Evaluation of the Questionnaire Study

Of the 53 participants to whom the juices and questionnaires had been sent, 36 cases could be evaluated, while 17 could not. Three questionnaires were incompletely filled out, and three participants discontinued the study for various reasons: colic, a pasture accident, and family issues.

In addition, one participant terminated the study during Phase 2, as the horse (as revealed after unblinding) did not tolerate the Shakingsaft well and displayed worsened headshaking symptoms compared to the pre-treatment phase. Another participant had to withdraw after Phase 1, because her horse developed watery feces as a reaction to the Shakingsaft (confirmed after unblinding).

Two participants did not begin the study at all, as their horses' headshaking symptoms were too severe and required medical treatment. One horse could not be included in the final evaluation because it was moved to an alpine pasture during the study period. Furthermore, four questionnaire packages were lost in the mail, and two participants could not be reached by either email or telephone.

Symptoms – Group 1

Prior to the start of the study, the questionnaire was completed three times as a baseline assessment. Group 1 then began Phase 1 with the administration of the Shakingsaft. During the first two weeks of Phase 1, participants did not complete questionnaires. In weeks 3 and 4, the participants filled out the questionnaires three times each, recording the horses' symptoms on a Visual Analogue Scale (VAS) ranging from 0 (no symptoms) to 10 (severe symptoms).

After a two-week washout period, Group 1 began administering the placebo juice, again completing the questionnaires three times during weeks 3 and 4 of this phase.

As illustrated in Figures 2 and 3, the symptoms in Group 1, both at rest and in motion, were found to be significantly reduced during both the Shakingsaft phase and the placebo phase.

At rest, compared with the values before the start of the study, symptoms such as horizontal and vertical headshaking as well as ocular discharge were significantly reduced in both the Shakingsaft phase (Phase 1) and the placebo phase (Phase 2). The combined symptom *horizontal and vertical headshaking* (recorded on a shared VAS scale) decreased from an average intensity of 3.2 before the study to 2.1 in week 3 of Phase 1, and even further to 1.4 in week 4. In Phase 2, the mean continued to decline to 1.2 in week 3, followed by a slight increase to 1.6 in week 4.

The symptom ocular discharge showed an average intensity of 4.2 before the start of the study, which dropped to 1.8 in week 3 of Phase 1, then rose slightly to 2.7 in week 4. During Phase 2, the mean decreased again to 1.5 in week 3 and then increased to 2.1 in week 4.

During movement, symptoms such as increased snorting or sneezing and horizontal and vertical headshaking were also significantly reduced. Before the study began, the mean value for *increased snorting or sneezing* was 4.0, which dropped to 3.2 in week 3 of Phase 1 and significantly further to 2.8 in week 4. In Phase 2, this symptom continued to improve, reaching 2.1 in week 3 and 1.9 in week 4.

The symptom *horizontal and vertical headshaking* during movement started with a mean value of 3.6 before the study, decreased to 2.8 in week 3 of Phase 1, and further to 2.1 in week 4. In Phase 2, the mean remained stable at 2.1 in week 3, followed by a slight increase to 2.3 in week 4.

Overall, the mean values of all symptoms at rest, and most symptoms in motion, showed a significant decrease in Group 1 during both treatment phases.

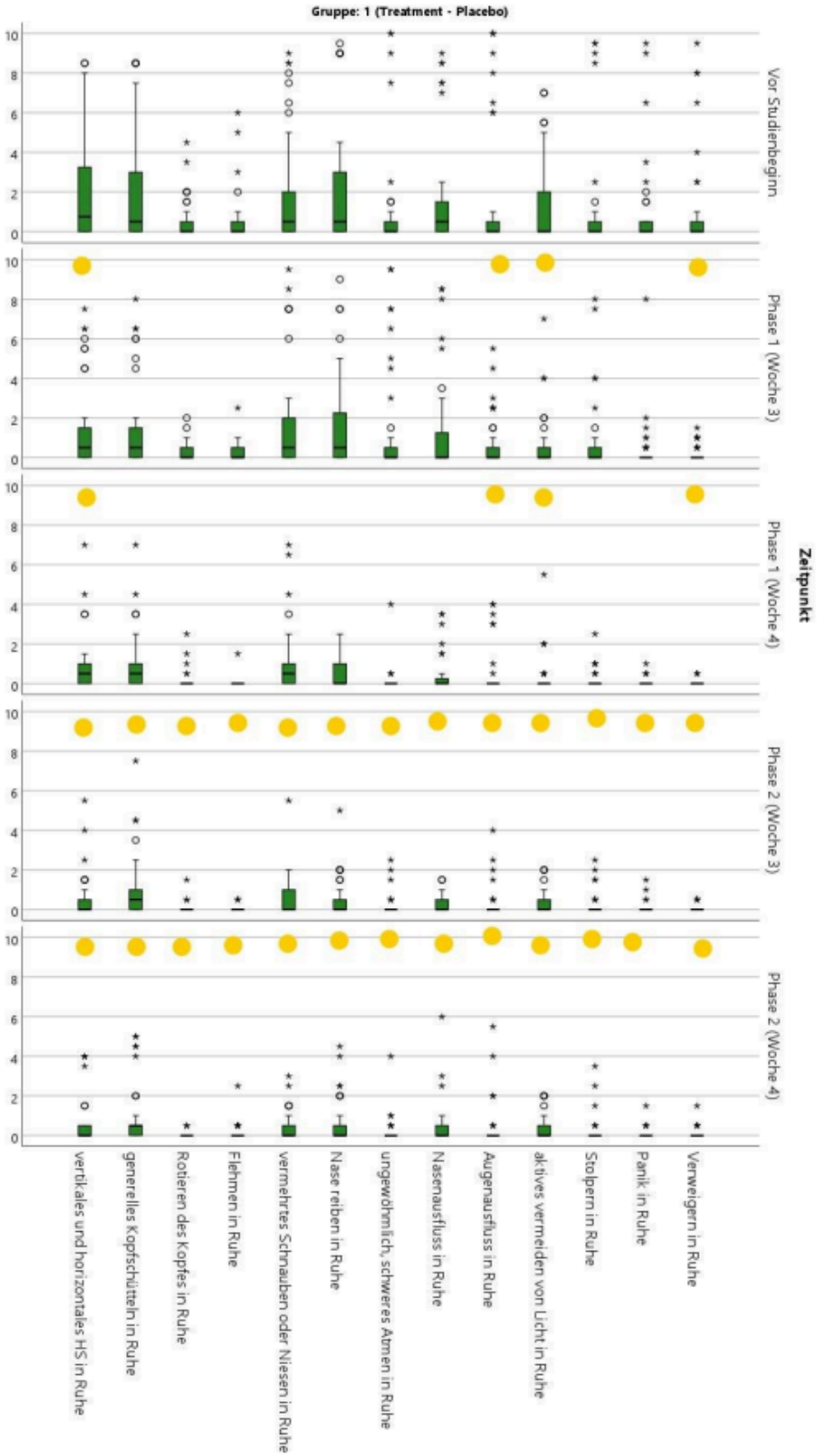


Fig. 2: Severity of symptoms at rest in Group 1

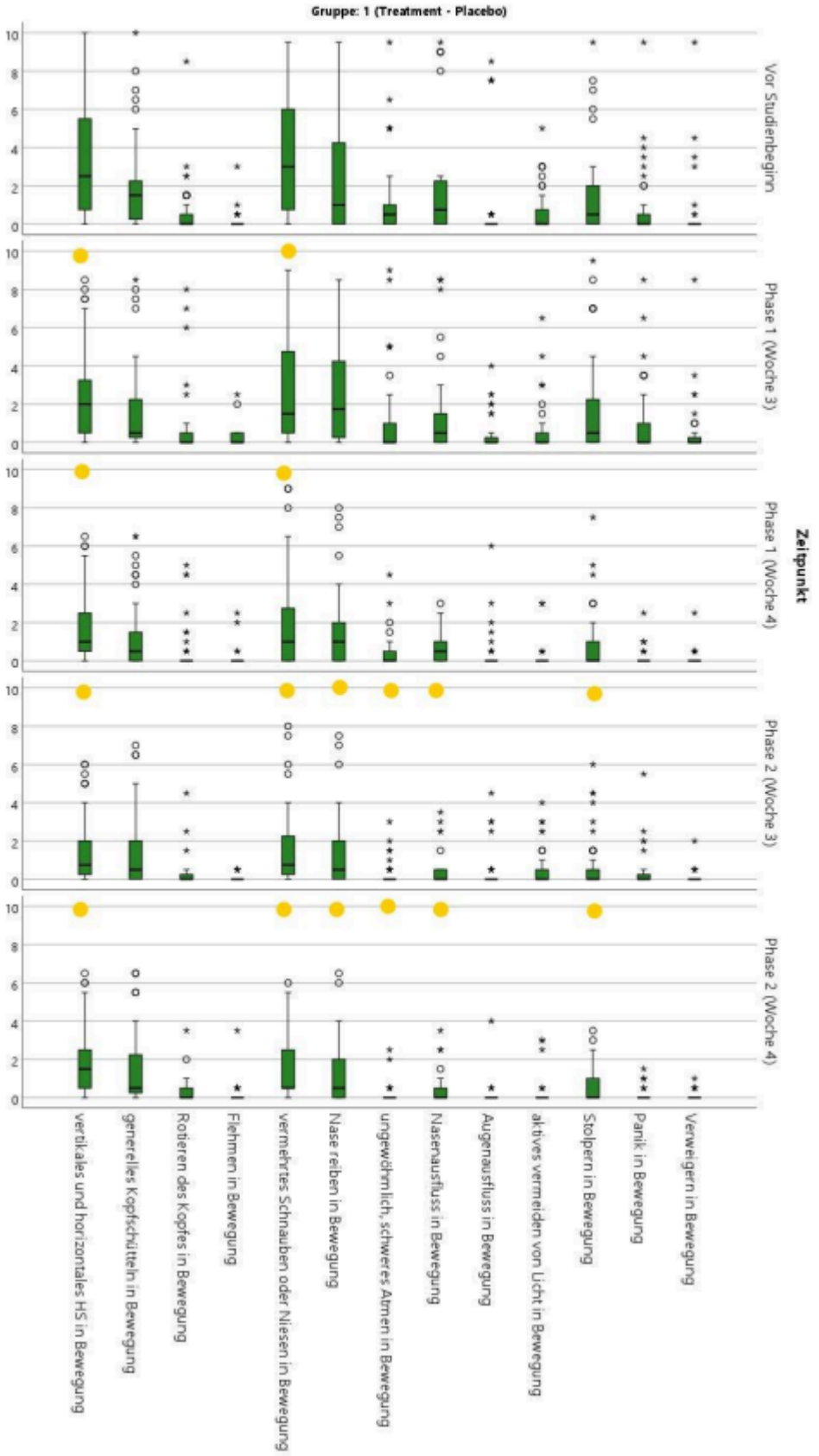


Fig. 3: Severity of symptoms during movement in Group 1

Symptoms – Group 2

Group 2 began the study with the placebo juice and completed it with the Shakingsaft. As in Group 1, the participants filled out the questionnaires before the study and again during weeks 3 and 4 of both phases, completing each set three times.

As shown in Figures 4 and 5, both at rest and in motion, the symptom severity in Group 2 decreased significantly for many symptoms during the Shakingsaft phase.

At rest, symptoms such as vertical and horizontal headshaking, nasal discharge, rubbing of the nose, and flehmen behavior were significantly weaker during the Shakingsaft phase. The mean severity of *vertical and horizontal headshaking* before the start of the study was 3.2. During the placebo phase (Phase 1), the mean decreased to 2.2 in week 3, followed by a slight increase to 2.6 in week 4. During the Shakingsaft phase (Phase 2), the severity dropped significantly to 1.6 in week 3 and 1.4 in week 4.

The symptom *nasal discharge* showed a mean severity of 1.8 before the study, which decreased to 1.6 in week 3 of Phase 1, but increased again to 2.5 in week 4. In Phase 2, the value decreased significantly to 1.0 in week 3 and even further to 0.7 in week 4.

During movement, the symptoms *nasal discharge* and almost all other parameters recorded during the Shakingsaft phase — such as *nose rubbing*, *increased snorting or sneezing*, *active avoidance of light*, *vertical and horizontal headshaking*, and *rotational head movement* — were significantly reduced.

The mean value for *nasal discharge* before the study was 2.7. In Phase 1, it decreased to 1.4 in week 3 and increased again to 2.1 in week 4. When the Shakingsaft was administered, the symptom's severity dropped significantly to 0.9 in week 3 and 0.7 in week 4.

For the symptom *active avoidance of light*, the mean severity was 2.7 before the study, rising slightly to 2.8 in week 3 and 2.9 in week 4 of Phase 1. In Phase 2, however, the mean decreased significantly to 1.2 in week 3 and to 0.7 in week 4.

In summary, for Group 2, the mean values of almost all symptoms, both at rest and in motion, showed a significant decrease only during Phase 2 (the Shakingsaft phase) when compared to the baseline (Phase 0). No significant improvement was observed during the placebo phase (Phase 1), with the exceptions of *ocular discharge*, *stumbling*, and *refusal behavior*.

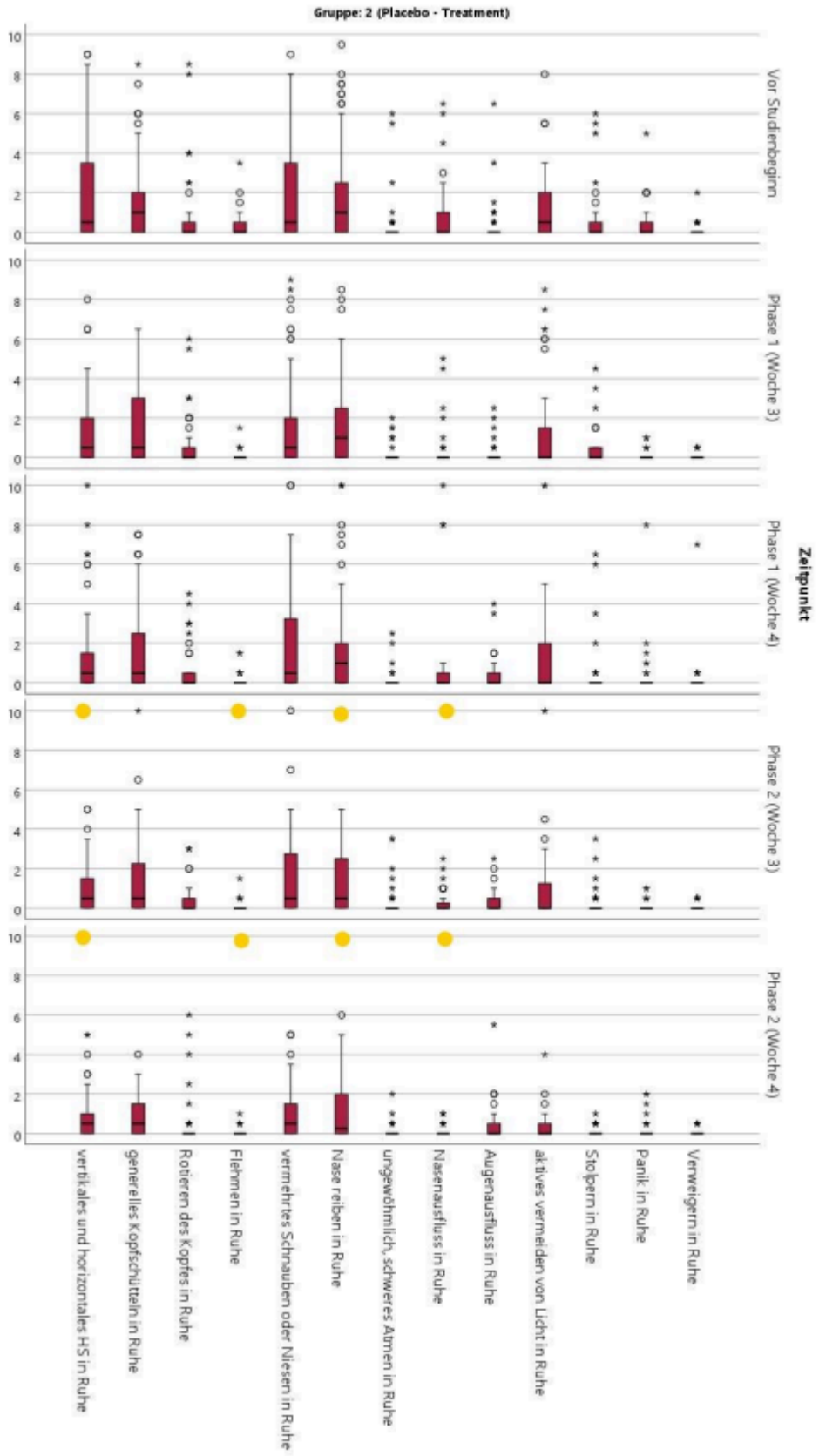


Fig. 4: Severity of symptoms at rest in Group 2

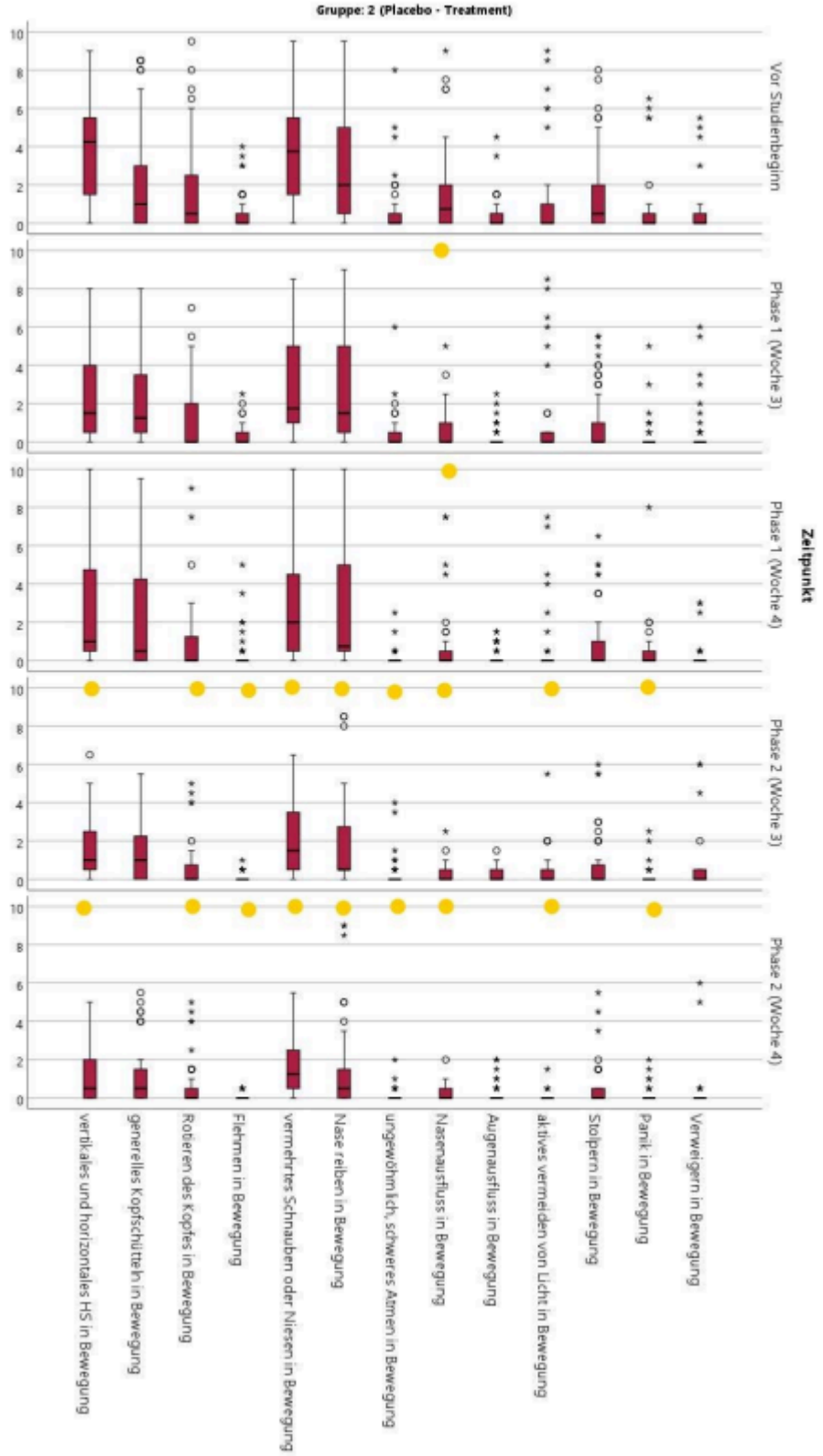


Fig. 5: Severity of symptoms during movement in Group 2

It can also be seen in Figures 2, 3, 4, and 5 that, in both groups, the symptoms were generally mild at rest and mild to moderate during movement, even before the start of the study.

Regarding the average symptom severity (based on the mean values of the first 13 Visual Analogue Scales in the questionnaire), both groups rated the symptoms at rest as mild. Before the study began, the average symptom intensity in Group 1 ranged from 1.5 to 2.6, and in Group 2 from 1.7 to 2.7 (see Figures 6 and 7).

As shown in Figure 6, the average symptom intensity for Group 1 during the Shakingsaft phase (Phase 1) ranged between 1.3 and 2.3 in week 3, and between 0.9 and 1.4 in week 4. During the placebo phase (Phase 2), the mean values were between 0.8 and 1.3 at the beginning, increasing slightly to 0.9–1.6 in week 4.

In Group 2 (see Figure 7), the range of average symptom severity during Phase 1 (placebo phase) was 1.5–2.5 in week 3 and 1.5–2.9 in week 4. During the Shakingsaft phase (Phase 2), the values ranged between 1.4 and 2.6 in week 3, and decreased to 1.1–1.7 in week 4.

For the average symptom severity during movement, both groups rated the symptoms as moderate. Before the study began, the mean values ranged between 2.3 and 3.3 in Group 1 and between 2.5 and 3.6 in Group 2 (see Figures 6 and 7).

In Group 1 (Figure 6), the average severity during Phase 1 (Shakingsaft) ranged between 1.8 and 2.7 in week 3 and 1.4–2.2 in week 4. During the placebo phase, the mean values were 1.2–2.0 in week 3 and 1.1–1.7 in week 4.

In Group 2 (Figure 7), the average symptom severity during Phase 1 (placebo) ranged between 1.8 and 2.8 in week 3 and 1.7–3.1 in week 4. In the Shakingsaft phase (Phase 2), the symptoms consistently decreased, ranging between 1.4 and 2.7 in week 3 and shifting further down to 1.3–2.2 in week 4.

Overall Mean Severity of Symptoms

(Mean value of the final Visual Analogue Scale in the questionnaire)

The overall severity of the symptoms in each respective week—assessed separately from the individual symptoms—was rated by the horse owners as being higher than the average symptom intensity, both at rest and in motion, across all phases and in both groups.

When comparing the two groups directly using a t-test, no significant difference was found between Group 1 and Group 2 over the course of the study. In both groups, the overall symptom severity (see *Figure 6*) as well as the number of observed symptoms (see *Figures 8 and 9*) decreased.

Correlation analysis of the overall symptom severity at rest and in motion showed that, in both phases, the total symptom severity in both groups decreased significantly. This reduction was more pronounced during movement than at rest, as the symptoms observed in resting horses were generally less severe overall.

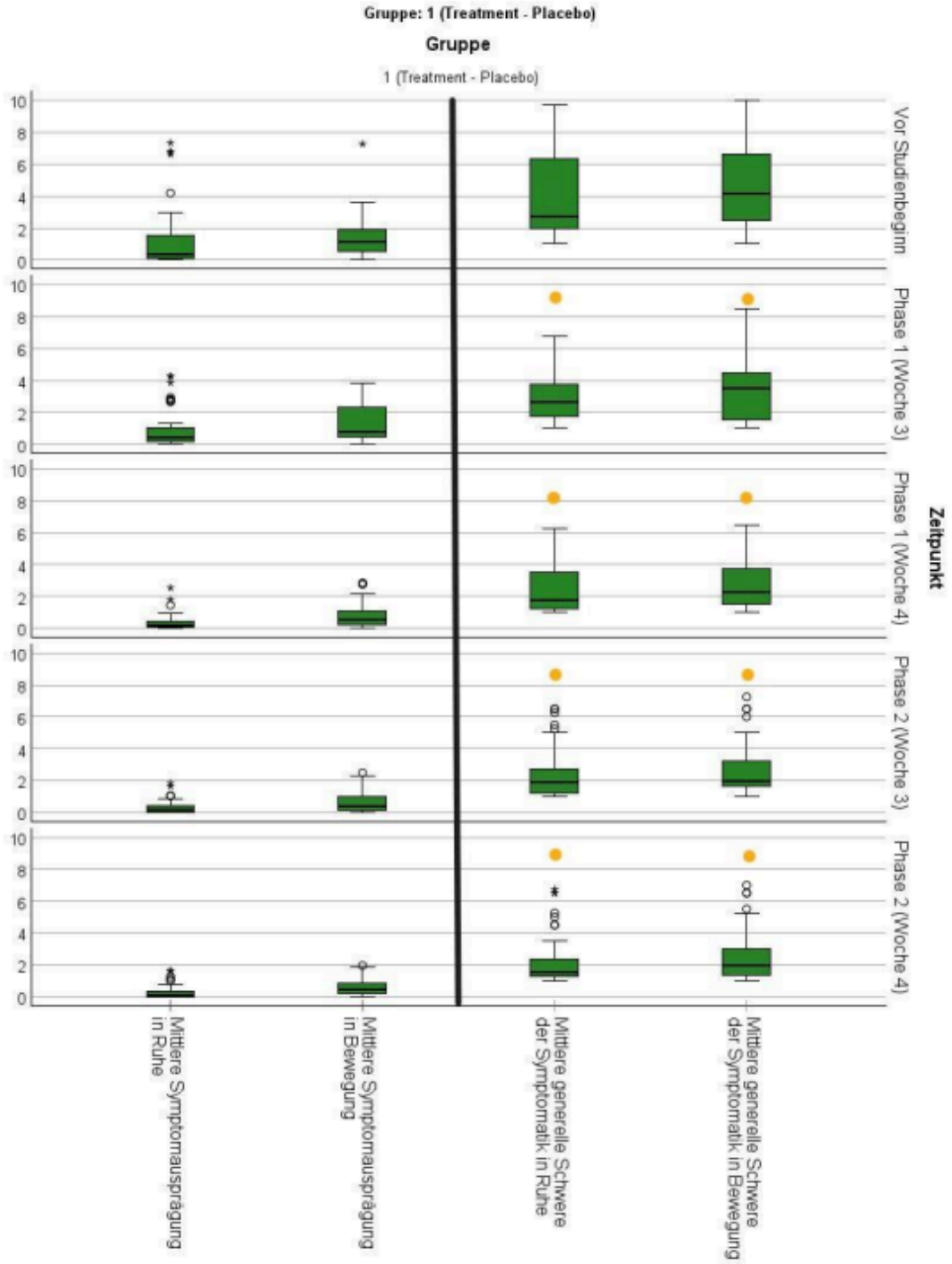


Fig. 6: Comparison of the average symptom intensity at rest and during movement, and the overall mean severity of symptoms at rest and during movement in Group 1

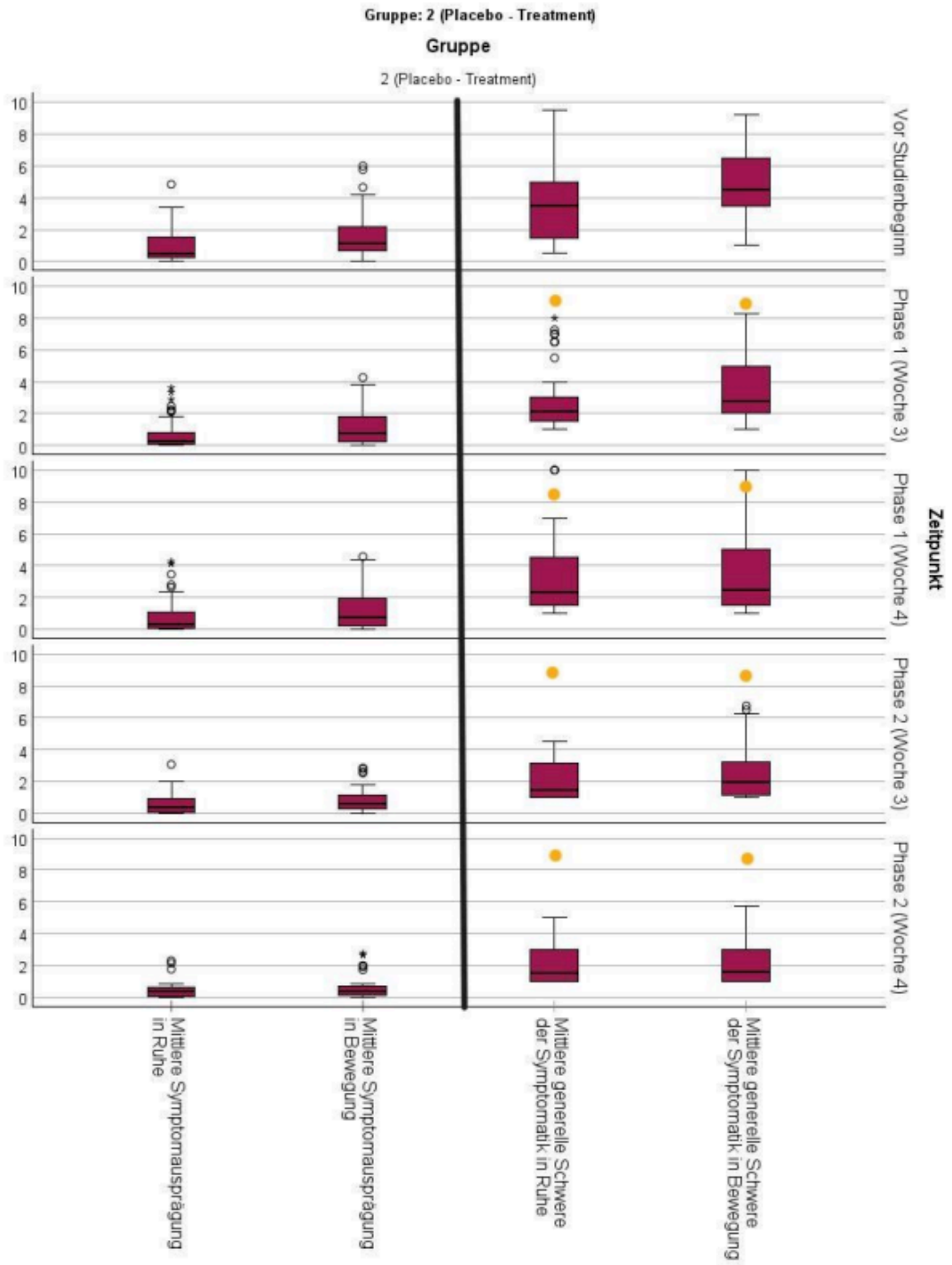


Fig. 7: Comparison of the average symptom intensity at rest and during movement, and the overall mean severity of symptoms at rest and during movement in Group 2

Number of Observed Symptoms

Figures 8 and 9 show the mean number of symptoms observed at rest and in motion for each group, as reported by the horse owners. It can be seen that the number of symptoms at rest was generally lower than during movement, and that, over the course of the study, the average number of symptoms decreased by about two.

As illustrated in Figure 8, the average number of symptoms in Group 1 was 5.9 at rest and 6.4 during movement before the study began. In Phase 1, week 3, the mean number of symptoms at rest decreased to 5.5, while in motion it slightly increased to 6.8. By week 4 of Phase 1, the number of symptoms had decreased to 3.5 at rest and 5.2 during movement.

In Phase 2, week 3, the number of symptoms at rest remained unchanged, while during movement it decreased to 5.0. By the final week of the study, the number of symptoms further declined to 3.0 at rest and 5.3 during movement.

In Group 2 (see Figure 9), the mean number of symptoms before the study was 5.4 at rest and 7.2 during movement. During Phase 1, the values decreased in week 3 to 4.4 at rest and 6.3 in motion. In week 4, the number of symptoms at rest rose slightly to 4.5, while during movement it declined to 5.8.

In Phase 2, week 3, the number of symptoms at rest remained constant, while during movement it increased slightly to 5.9. By week 4, both values decreased again — to 4.0 at rest and 4.6 during movement.

However, these changes were not statistically significant in either group.

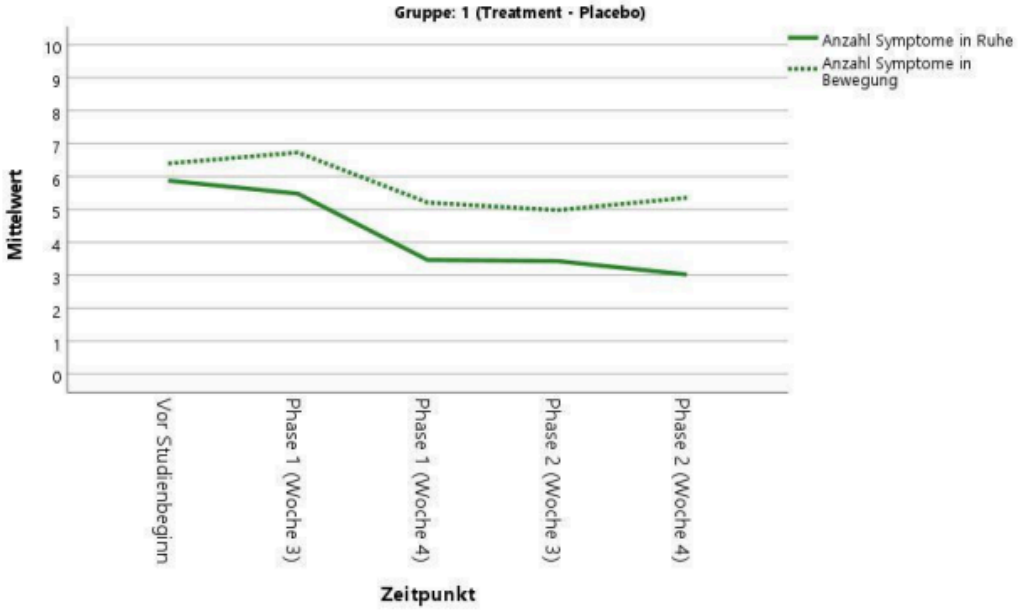


Fig. 8: Mean number of symptoms (> 0) at the respective time points in Group 1

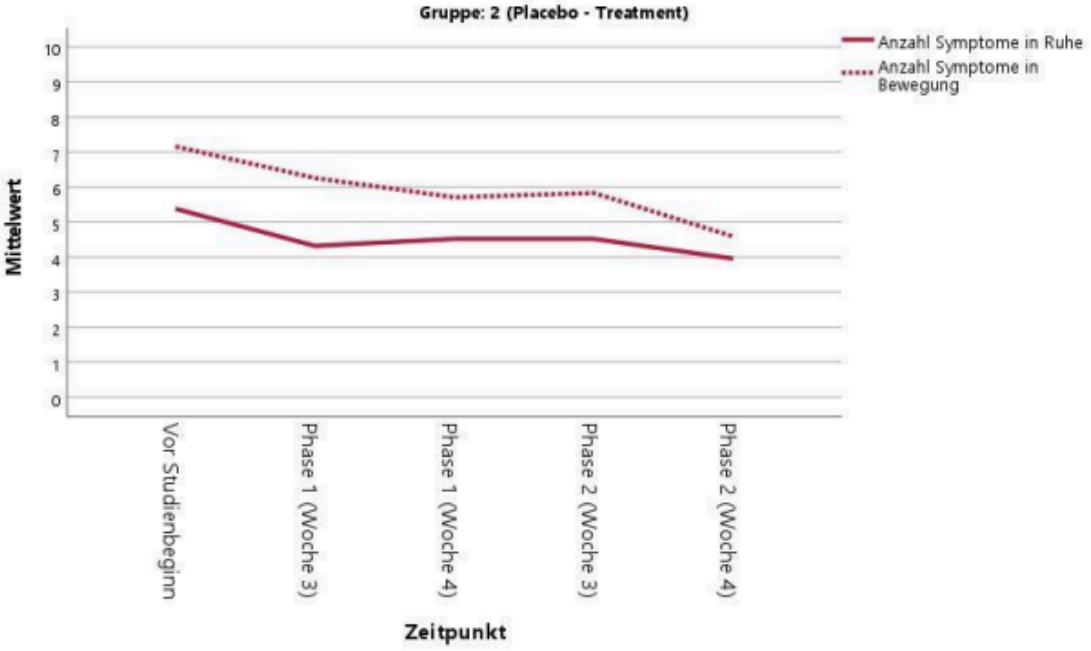


Fig. 9: Mean number of symptoms (> 0) at the respective time points in Group 2

In response to the question of whether the course of headshaking had improved, worsened, or remained unchanged, no statistically significant result was found.

Remarks from the Horse Owners

Many participants included personal observations and comments either directly on the questionnaires or on attached notes.

A particularly common remark was that many horses reacted strongly to insects, especially flies and mosquitoes, which caused the headshaking to become more pronounced. Increased dust exposure—for example, from mowing or grain threshing—was also reported to exacerbate the symptoms. These observations were consistent across both groups and in both phases of the study.

However, as revealed after unblinding, several owners also noted improvements during the Shakingsaft phase. Some horses appeared generally more relaxed, a change that was also noticed by other people (such as fellow horse owners and friends). In addition, several participants reported that they were once again able to ride at any time of day without their horses displaying severe headshaking. These observations were reported in both groups during the Shakingsaft phase.

Weather conditions were also mentioned as an influencing factor in both groups and phases. Some horses showed improvement during rainfall, while others reacted with increased headshaking. Similarly, sunlight and heat affected the horses differently, depending on the individual animal.

Further Statistical Evaluation

The statistical analysis of the cross-over study was performed using the program IBM SPSS Statistics v28. The effects of individual factors were examined through linear mixed models, in which the study phase, week, and group were included as factors. The treatment effect of the Shakingsaft resulted from the interaction between study phase and group. As dependent variables, the overall severity of symptoms as rated by the owners and the average severity of the reported symptoms were analyzed, with unreported symptoms excluded from the evaluation.The data collected before the start of juice administration (Phase 0) were not included in these analyses. The effect of the individual weeks within the two study phases, compared with Phase 0, was also analyzed using mixed models. All analyses were carried out both for the data collected at rest and for those recorded during movement. The

differences between the results obtained during movement and those obtained at rest were analyzed for each time point separately within both groups using paired-sample t-tests. The correlation between the values at rest and those during movement was determined using Pearson's correlation analysis. In addition to evaluating the individual symptoms, the total number of reported symptoms was also calculated and analyzed. For all statistical analyses, a p-value below 5% ($p < 0.05$) was considered statistically significant.

When examining the severity of symptoms at rest, a significant difference was found between the two groups, but not between the individual weeks. No significant treatment effect was observed. During movement, none of these factors yielded significant results. The p-values corresponding to the individual factors are summarized in **Table 5**.

Table 5: Overview of p-values from the mixed models

	Average symptom severity		**Severity of symptoms**	
Factor in the model	**Rest**	**Movement**	**Rest**	**Movement**
Group A	0,004*	0,058	0,753	0,435
Group B	0,307	0,340	0,527	0,227
Study phase (C)	0,037*	0,001*	0,000*	0,000*
A x C (= treatment)	0,557	0,993	0,296	0,146
Bx treatment	0,117	0,736	0,444	0,585

4. Discussion

The results of this headshaking cross-over study demonstrated that in both groups there was a significant reduction in symptom severity, both at rest and during movement, when the Shakingsaft was administered. Group 1, which started the study with the Shakingsaft, also showed a significant decrease in symptom severity during the placebo phase, in both resting and moving conditions. These results may indicate a placebo effect or a psychological effect arising from participation in the study and the act of administering a juice.

However, this assumption was contradicted by the findings from Group 2, as this group did not show a significant reduction in the severity of most symptoms—neither at rest nor in motion—during the placebo phase (Phase 1). The results in Group 2 instead support a positive effect of the Shakingsaft, since a significant decrease in the severity of almost all symptoms, both at rest and during movement, was observed during the Shakingsaft phase (Phase 2).

Another possible explanation for the improvement observed during the placebo phase in Group 1 might be that the washout period—the interval between the administration of the Shakingsaft and the placebo juice—was too short, resulting in a residual effect or persistence of symptom improvement from the previously administered Shakingsaft. However, this assumption was not supported by the findings from the pilot study by Gruarin (2020), which used an equally long washout period. In that study, the group receiving the placebo in Phase 2 did not show a significant reduction in symptom severity. It should be noted, however, that the sample size in the pilot study (n = 10) was smaller than in the present cross-over study.

Furthermore, it is possible that the horse owners' awareness of their animals' visible improvement during the first phase influenced their perception and reporting of symptoms in the second phase. This psychological carryover effect might have led them to rate the symptoms as less severe in Phase 2.

In comparison with the previous pilot study by Gruarin (2020) on ten horses, a significant reduction in symptom severity was again observed in both groups during the Shakingsaft phase of this cross-over study. However, in Gruarin's pilot study, the group that received the placebo juice in Phase 2 did not show a significant decline in symptom severity.

This observation contradicts the earlier assumption that the improvement seen during the Shakingsaft phase was due to a positive attitude or a psychological effect among participants. However, it is also possible that the number of participants in this study was too small to detect such an effect or its potential influence with sufficient clarity.

The hypothesis that the symptoms of the horses would improve during administration of the Shakingsaft and that the horses' behavior would differ between the phases was confirmed only in Group 2. Group 1, however, did not support this hypothesis, as the symptoms improved significantly in both phases and no behavioral differences were observed.

Another notable point in the results was that two participants had to discontinue the study prematurely because their horses, according to the owners, showed adverse effects during the Shakingsaft phase. One owner in Group 2 ended participation after three days of Shakingsaft administration (Phase 2), as the horse exhibited strong headshaking symptoms shortly after intake. During Phase 1, when the horse had received the placebo juice, no such problems were reported.

Headshaking in horses can be influenced by many factors that affect the intensity and frequency of symptoms. Among the factors also mentioned by participants were environmental conditions such as weather, wind, light intensity, and exposure to insects, pollen, or dust. Activities such as mowing or harvesting were likewise described as having a negative effect on headshaking. Several owners noted these "disturbing factors" on their questionnaires, often reporting that such days coincided with an increase in headshaking symptoms. It is therefore possible that environmental conditions contributed to the horse's worsening symptoms.

Other potential causes could include intolerances or unknown allergies to certain ingredients in the Shakingsaft. For example, Siberian ginseng (Eleutherococcus senticosus) has been reported to cause irritability, palpitations, or headaches in humans (Arzneipflanzenlexikon, accessed 16 May 2023). Insomnia is also listed as a possible side effect of this plant (Ewalia, accessed 25 May 2023). Moreover, feed allergens are relatively common in horses and may themselves trigger headshaking (Waldburger 2009). It was not specified whether a change in feed may have contributed to the worsening of symptoms in this particular horse.

The second horse owner, who belonged to Group 1, had to withdraw from the study after completing Phase 1 (the Shakingsaft phase) because the horse developed watery feces. The animal had experienced this problem previously, but it had been under control before the start of the study. Despite this possible side effect of the Shakingsaft, the owner observed a clear improvement in the headshaking symptoms during movement. It is possible that this horse, given its pre-existing digestive sensitivity, reacted adversely to one of the ingredients of the Shakingsaft.

A scientific article from 2015 demonstrated that general feeding management has a major impact on the occurrence and severity of fecal water syndrome in horses (Ertelt and Gehlen 2015). Among the ingredients of the Shakingsaft, milk thistle (Silybum marianum) is known to have gastrointestinal side effects, which could have triggered the recurrence of fecal water in this horse (Arzneipflanzenlexikon, accessed 15 May 2023).

Since it is uncertain whether the Shakingsaft was administered exactly as instructed, an overdose cannot be ruled out as a possible cause of the side effects in either of the two cases. Overdosage may have occurred if the owners misunderstood the dosage recommendations (see Table 3) or overestimated the body weight of their horses, leading to the administration of larger quantities than prescribed.

In general, environmental influences play a significant role for horse owners, as many horses show increased headshaking in response to external factors. The most frequently mentioned triggers included insects, dust exposure (for instance from mowing or dry hay), heat or warmth, and brightness or sunlight. Such factors occur repeatedly in daily stable management, and it cannot be ruled out that they may have influenced the study results.

Even before the start of the study, many participants had already tried various treatments for headshaking, such as fly masks and nets, blankets, UV-protective masks, and feed supplements. Among these, the fly masks or nets, blankets, and supplements—including magnesium, various herbs, chamomile inhalation, Adrisin Heel, licorice root, frankincense, teasel root, and *Apis mellifica* globules—were reported to have brought the greatest improvement. These measures may also have contributed to a reduction in headshaking, particularly when the symptoms were aggravated by insects.

Many participants reported that their horses appeared more relaxed while receiving the Shakingsaft. This effect was observed both during riding and when the horses were in the pasture or stable. Such behavior may be related to the properties of Siberian ginseng

(Eleutherococcus senticosus), one of the ingredients of the juice, which is known to have a positive influence on the ability to cope with stress and performance demands.

To investigate the effects and lasting impact of the Shakingsaft more precisely, it would be advisable to conduct a follow-up study with a larger number of participants and a longer washout period between the administration of the Shakingsaft and the placebo juice.

Furthermore, it is recommended that future studies place greater emphasis on examining the interactions between symptom severity and environmental factors, as such conditions can have a strong influence on idiopathic headshaking in horses.

5. Summary

This thesis addressed the problem of headshaking in horses. Following a preliminary survey conducted to identify and recruit participants, a double-blind cross-over study was carried out to examine the effects of the Shakingsaft developed by Ewalia GmbH on the severity of headshaking symptoms in comparison with a placebo juice. The participating horses were divided into two groups, each undergoing two treatment phases separated by a two-week washout period.

Out of 57 interested participants who responded to Ewalia's recruitment for the headshaking study, 53 were admitted. Of these, 17 participants discontinued the study at different stages and for various reasons, while 36 completed both phases and were included in the final analysis.

The majority of horse owners described their horses' headshaking as moderate, with the most commonly observed symptoms being snorting, rubbing the nose on objects, and vertical and horizontal headshaking. According to the participants, the headshaking was influenced and often intensified by weather conditions, season, and environmental factors such as sunlight, wind, insects, dust, and mowing activities. Most owners had already tried several therapeutic measures, including fly nets, blankets, UV-protective masks, and dietary supplements. Among these, fly nets and feed supplements were reported to be the most effective, while blankets were rated as least beneficial.

The analysis of the questionnaires in the cross-over study showed that the severity of symptoms decreased in both groups during the administration of the Shakingsaft. In Group 2, a significant reduction in almost all symptoms during Phase 2 (Shakingsaft) was observed, supporting the efficacy of the herbal juice. In Group 1, a significant reduction in some symptoms occurred during both the Shakingsaft phase and the placebo phase.

Another general finding was that headshaking was less pronounced at rest than during movement in nearly all horses. Furthermore, many participants wrote at the end of the Shakingsaft phase—without knowing they had administered the Shakingsaft and not the placebo—that the symptoms of headshaking had greatly improved or even disappeared completely.

However, it cannot be ruled out that placebo effects, a washout period that was too short, psychological influences from participation in the study, or varying environmental factors may have affected the results.

6. Summary

The study discussed in this thesis dealt with the problem of head shaking in horses. It tried to examine the effects of the Ewalia shake juice on the strength and intensity of head shaking. Following a preliminary survey to find and recruit patients, a double blind crossover study was carried out. The study participants were separated into two groups, which were examined and underwent two stages of treatment with a two-week washout phase in between.

Of 57 interested horse owners, who had responded to various calls for tenders for the Ewalia headshaking study as part of the preliminary survey, 53 were admitted to the head shaking study. While 17 horse owners terminated the study early for different reasons and in different phases, therefore 36 participants completed both stages of the trial and could be evaluated. In the crossover study, the majority of horse owners described their horse's head shaking strength as "moderate". Moreover, the symptoms most frequently observed have been snorting, nose rubbing and vertical and horizontal head shaking. Furthermore, the intensity of head shaking increased, depending on multiple factors such as weather, season and different environmental influences (sun, wind, insects, dust or mowing works etc.). The majority of horse owners had previously attempted different kinds of treatment in order to improve their horses head shaking issues, for example fly nets, blankets, UV masks or supplementary feed and thereof fly nets and supplementary feed brought the greatest therapeutic success, while blankets were last-mentioned.

The results of the final questionnaires, in which horse owners were asked to indicate the strength and intensity of their horses symptoms post treatment, showed significant results for both groups. Group 2 showed significance in most symptoms during movement in the Ewalia shake juice phase (phase 2) which hence speaks for its effectiveness. Group 1 showed significance in some symptoms both in the Ewalia shake juice phase (phase 1) as well as the placebo phase (phase 2). Additionally, it also needs to be mentioned that almost all horses showed less head shaking when they are at rest compared to be in motion. Overall, the majority of participants, unaware of whether they were currently feeding the shake juice or the placebo, stated that the symptoms of head shaking had greatly reduced or even disappeared completely after they finished the shake juice phase.

However, while these results point towards the effectiveness of the Ewalia shake juice, a placebo effect, a too short washout time between the phases respectively a psychological

effect through participation in the study as well as different environment influences could not be ruled out.

7. References

7.1. Articles and Books

Abdel-Kawi S. H., Hashem K. S., Abd-Allah S., 2016. Mechanism of diethylhexylphtalate (DEHP) induced testicular damage and of grape seed extract-induced protection in the rat. Food and Chemical Toxiology 90, 64-75, 2016.

Aichberger L., Bizaj M., Fritsch F., Gansinger D., Hagmüller W., Hahn I., Hozzank A., Kolar V., Stöger E., Hrsg. 2006. Kräuter für Nutz- und Heimtiere. Ratgeber für die Anwendung ausgewählter Heil- und Gewürzpflanzen. Eigenverlag, 1070 Wien.

Beckert-Schäfer B., Hrsg. 2011. Headshaking erkennen und behandeln. Cadmos Verlag. München.

Dockalova H., 2021. Influence of milk thistle (Silybum marianum) seed cakes on biochemical values of equine plasma subjected to physical exertion. Animals 11(1), 210, 2021.

Ertelt A., Gehlen H., 2015. Kotwasser beim Pferd – ein ungelöstes Problem. Pferdeheilkunde 31: 261-268.

Gehlen H., Hrsg. 2017. Differentialdiagnosen Innere Medizin beim Pferd. Enke Verlag. Stuttgart.

Holzauer P., Koula-Jenik H., Pempelfort K., Schneider B., 2015. Prophylaxe der Chemotherapie-assoziierten oralen Mukositis mit der Mundspül-Lösung aus Traubenkernextrakt (OPC). Deutsche Zeitschrift für Onkologie, 47: 36-40

Mills D. S., Cook S., Taylor K., Jones B., 2002. Analysis of the variations in clinical signs shown by 254 cases of equine headshaking, 236-240.

Pahlow M., 2013. Das große Buch der Heilpflanzen. Nikol Verlag. Hamburg.

Pu W., Zhang M., Bai R., Sun L., Li W., Yu Y., Zhang Y., Song L., Wang Z., Peng Y., Shi H., Zhou K., Li T., 2016. Anti-inflammatory effects of Rhodiola rosea L.: A review. Biomedicine & Pharmacotherapy 121, 109552, 2020.

Silva Leitão Peres N., Cabrera Parra Bortoluzzi L., Medeiros Marques L.L., Formigoni M., Hernandez Barros Fuchs R., Aparecida Droval A., Aparecida Reitz Cardoso F., 2020. Medical effects of Peruvian maca (Lepidium meyenii): a review. Food & function 11(1), 83-92, 2020.

Tharakan B. und Manyam B.V., 2006. Botanical therapies in chronical fatigue. Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives 20 (2), 91-95, 2006.

Waldbruger Anja, 2009. Allergene im Pferdefutter. Bakkalaureatsarbeit. Wien

7.2. Internet Sources

Firma Ewalia – Kräuter für Pferde und Haustiere GmbH https://www.ewalia.at/ewalia-magictipps/kraeuterlexikon/maca-die-wunderknolle (Zugriff 21.11.2022)

Gruarin S. Wirksamkeit einer Kräutermischung als Ergänzungsfuttermittel bei Headshaking bei Pferden - Vorstudie. https://www.ewalia.de/wirksamkeit-einer-kraeutermischung-alsergaenzungsfuttermittel-bei-headshaking-vorstudie (Zugriff 14.03.2023)

Kooperation Phytopharmaka https://arzneipflanzenlexikon.info/index.php?de_pflanzen=139 (Zugriff 20.09.2022)

Kooperation Phytopharmaka https://arzneipflanzenlexikon.info/mariendistel.php (Zugriff 15.05.2023)

Kooperation Phytopharmaka https://arzneipflanzenlexikon.info/taigawurzel.php (Zugriff 16.05.2023)

8. List of Figures

9. List of Tables

9. List of Tables

EOTRH … *Equine Odontoclastic Tooth Resorption and Hypercementosis*; a painful, progressive periodontal disease

ggr. … *mild* (low-grade)

hgr. … *severe* (high-grade)

mgr. … *moderate* (medium-grade)

per os … administered orally (by mouth)

RAO … *Recurrent Airway Obstruction*; chronic obstructive pulmonary disease in horses

VAS … *Visual Analogue Scale*

ZNS … *Central Nervous System*

11. Anhang

Anhang 1: Vor-Umfrage

Vor-Umfrage Headshaking beim Pferd

Name, Adresse, Tel.nr. des Pferdebesitzers:

……

……

…….....

……

…….....

Pferdename:	**Alter des Pferdes:**
Besitzer:	**Rasse:**
Stockmaß in cm (zirka):	**Körpergewicht in kg(zirka):**

Welches Geschlecht hat Ihr Pferd? (Einfachauswahl) O Stute O Wallach O Hengst

Ist Ihr Pferd geimpft? (Einfachauswahl) O Ja O Nein

Wenn ja, welche Impfungen? (Mehrfachauswahl möglich) O Tetanus O Influenza O Herpes

Seit wie vielen Jahren ist das Pferd in Ihrem Besitz? (Freitexteintrag möglich)

……

……

Gibt es bekannte (Vor-)Erkrankungen oder Verletzungen? (Einfachauswahl) O Ja O Nein

Wenn ja, welche und wann sind diese aufgetreten? (Freitexteintrag möglich)

……..……

…….

Wird das Pferd zurzeit geritten? (Einfachauswahl) O Ja O Nein

Wenn ja, gibt es Einschränkungen und welche? (Einfachauswahl und Freitexteitrag möglich)
O Ja O Nein

……

…….

Wenn nein, warum nicht? (Freitexteintrag möglich)

……

……

Verabreichen Sie derzeit Dauermedikationen? (Einfachauswahl) O Ja O Nein

Wenn ja, welche? (Freitexteintrag möglich)

……

……

Haltung und Fütterung des Pferdes

In welcher Haltungsform befindet sich Ihr Pferd? (Mehrfachauswahl möglich)

O Einzelbox

O Einzelbox mit Paddock

O Einzelbox/ Einzelbox mit Paddock mit täglichem Weidegang

Wenn ja, wie viele Stunden pro Tag Weidegang? (zirka, Freitexteintrag möglich)

……
……

O Offenstall

Wenn ja, wie viele Stunden pro Tag Weidegang? (zirka, Freitexteintrag möglich)

……
……

Bei Gruppenhaltung: Wie groß ist die Gruppe? (Freitexteintrag möglich)

……
……

O Sonstiges:

Wenn ja, wie viele Stunden pro Tag Weidegang? (zirka, Freitexteintrag möglich)

……
……

Bei Gruppenhaltung: Wie groß ist die Gruppe? (Freitexteintrag möglich)

……
……

Wie wird Ihr Pferd gefüttert?

Welches Raufutter bekommt das Pferd gefüttert? (Mehrfachauswahl möglich)

O Heu

O Stroh

O Silage/Heulage

Wie viele Stunden ist Ihr Pferd täglich mit Fressen von **Raufutter** beschäftigt? (zirka, Einfachauswahl)

O 0 – 6 Stunden

O 6 – 12 Stunden

O 12 – 24 Stunden

Bekommt Ihr Pferd **Kraftfutter** gefüttert? (Einfachauswahl) O Ja O Nein

Wenn ja, welches Futter? (Freitexteintrag möglich)

……
……...

……
……...

In welcher Menge pro 24 Stunden? (zirka, Freitexteintrag möglich)

……
……...

……
……...

Füttern Sie **Ergänzungsfuttermittel**? (Einfachauswahl) O Ja O Nein

Wenn ja, welche Ergänzungsfuttermitte? (Freitexteintrag möglich)

……
……...

……
……...

In welcher Menge pro 24 Stunden? (zirka, Freitexteintrag möglich)

……
……...

……
……...

Hat das Pferd einen **Salzleckstein** zur Verfügung? (Einfachauswahl) O Ja O Nein

Hat das Pferd einen **Mineralleckstein** zur Verfügung? (Einfachauswahl) O Ja O Nein

Headshaking

Seit wann zeigt Ihr Pferd Symptome? (Freitexteintrag möglich)

……
……....

Wann wurde die Diagnose „Headshaking" gestellt? (Freitexteintrag möglich)

……
…….

Wurde die Diagnose von einem Tierarzt gestellt?

O Ja O Nein

Wenn ja, welche **Untersuchungen wurden zu Abklärung** des Headshakings durchgeführt?

O allgemeine klinische Untersuchung

O neurologische Untersuchung

O Labordiagnostik *(Blutuntersuchung, etc.)*

O Bildgebende Diagnostik *(Röntgen, Ultraschall, CT, MRT)*

O Testen auf auslösende Reize

O Sonstiges:

……
….

Wie ist die Schwere des Headshakings? (Einfachauswahl)

O geringgradig *Bsp.: Pferd zeigt leichte Symptome, ist noch gut reitbar*

O mittelgradig *Bsp.: Pferd zeigt mittelschwere Symptome, ist noch reitbar*

O hochgradig *Bsp.: Pferd zeigt ständig schwere Symptome, ist nicht mehr reitbar*

Welche Symptome zeigt Ihr Pferd? (Mehrfachauswahl möglich)

O vertikales Headshaking (Auf- und Abbewegen Bewegen/Schlagen des Kopfes)

O horizontales Headshaking (Seitliches Bewegen /Schlagen des Kopfes)

O Rotieren des Kopfes (kreisförmige Bewegungen des Kopfes)

O generelles Kopfschütteln

O Flehmen

O Schnauben

O Niesen

O Nase an Objekten, am Vorderbein oder Boden reiben

O aktives Vermeiden von Licht, Wärme oder Wind

O ungewöhnliches, schweres Atmen

O Stolpern

O Panik

O Verweigern

O Nasenausfluss

Wenn ja, wie stark ist dieser Nasenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Nasenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Nasenausfluss? (Einfachauswahl)

O flüssig O schleimig

O Tränende Augen/Augenausfluss

Wenn ja, wie stark ist dieser Augenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Augenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Augenausfluss? (Einfachauswahl)

O flüssig O schleimig

Zu welchen Jahreszeiten tritt das Headshaking auf? (Mehrfachauswahl möglich)

O Frühling O Sommer O Herbst O Winter

Wenn in mehreren Saisonen, in welcher tritt es am deutlichsten auf? (Einfachauswahl)

O Frühling O Sommer O Herbst O Winter

Tritt das Headshaking bei bestimmten Witterungen auf? O Ja O Nein

Wenn ja, bei welcher Witterung hauptsächlich? (Mehrfachauswahl)

O sonnig O bewölkt O regnerisch O windig

Wenn bei mehreren Witterungen, bei welcher tritt es am deutlichsten auf? (Einfachauswahl)

O sonnig O bewölkt O regnerisch O windig

Gibt es Ihrer Meinung nach weitere mögliche (Umwelt-)Faktoren oder Veränderungen, die das Headshaking beeinflussen? (Einfachauswahl) O Ja O Nein

Wenn ja, welche? (Mehrfachauswahl möglich, Freitexteintrag möglich)

O Bewegung

Wenn ja, in welcher Form? (Freitexteintrag möglich)

……...……
……..

O Stress

Wenn ja, in welcher Form? (Freitexteintrag möglich)

……
……..……

O Pollenflug

Wenn ja, in welcher Form? (Freitexteintrag möglich)

……
……..……

O direktes Sonnenlicht

Wenn ja, in welcher Form? (Freitexteintrag möglich)

……
……..……

O Saisonwechsel

Wenn ja, in welcher Form? (Freitexteintrag möglich)

……
……..……

O Haltungsänderung

Wenn ja, in welcher Form und auf welche Haltungsformen sind Sie für Ihre Pferd umgestiegen? (Freitexteintrag möglich)

……
……..……

O Sonstiges:
……

Gibt es weitere Pferde mit derselben Symptomatik im Stall? (Einfachauswahl) O Ja O Nein

Wenn ja, wie viele Pferde sind im Stall untergebracht? (Freitexteintrag möglich)

……
……

Wenn ja, wie viele Pferde sind vom Headshaking betroffen? (Freitexteintrag möglich)

……
……

Hatten Sie das Headshaking BISHER (vor Teilnahme an dieser Studie) therapiert? (Einfachauswahl) O Ja O Nein

Wenn ja**,** wie/womit? (Mehrfachauswahl möglich)

O Fliegennetz

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Decke

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Medikamente und Ergänzungsfuttermittel

Wenn ja, welche? (Freitexteintrag möglich)

……
……

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Sonstiges:

Wenn ja, was? (Freitexteintrag möglich)

……

……..

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

Anhang 2: Fragebögen

Fragebogen

zur Untersuchung der Wirksamkeit eines ausgewählten Kräutersaftes als Ergänzungsfuttermittel bei Headshaking bei Pferden

Name, Adresse, Tel.nr. des Pferdebesitzers:

……

……

…….....

……

…….....

Pferdename:	**Datum:**
Beobachter:	**Ort:**

Beobachtungsform: In Ruhe (6 Minuten) und in Bewegung (Schritt 3 Minuten, Trab/Galopp 3 Minuten)

In welcher Studienphase befinden Sie sich? (Einfachauswahl)

O vor Behandlungsbeginn (mit Untersuchungen 3x in der Vorwoche)

O Phase 1 (Dauer 28 Tage, mit Untersuchungen 3x in der 3. Wo. und 3x in der 4. Wo.)

O Phase 2 (Dauer 28 Tage, mit Untersuchungen 3x in der 3. Wo. und 3x in der 4. Wo.)

Wie ist das aktuelle Wetter? (Mehrfachauswahl möglich)

O sonnig

O bewölkt

O regnerisch

O windig

Wie hoch ist die Außentemperatur in Grad Celsius? (zirka, Freitexteintrag möglich)

……
……

Zu welcher Tageszeit beobachten Sie Ihr Pferd? (Einfachauswahl)

O in der Früh

O am Vormittag

O zu Mittag

O am Nachmittag

O am Abend

……..

Unterschrift Beobachter

Symptome des Pferdes in RUHE(Beobachtungszeit 6 Minuten):

Wo ist der Beobachtungsort? (Mehrfachauswahl möglich)

O innen *Bsp.: Box, Reithalle, Stallgasse, etc.*

O außen *Bsp.: Reitplatz, Paddock, Weide, etc.*

Bitte die Stärke **der jeweiligen beobachteten Symptome** auf den nachfolgenden Skalen durch einen kurzen, senkrechten Strich vermerken.

Bsp.: Hier ist ein Symptom mit eher schwerer Symptomatik eingezeichnet.

0 10

kein Symptom *schweres Symptom*

Vertikales und horizontales Headshaking (Auf- und Abbewegen und seitliches Bewegen des Kopfes):

0 10

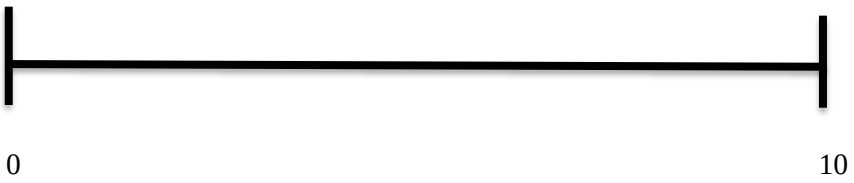
Generelles Kopfschütteln:

0 10

Rotieren des Kopfes:

0 10

Flehmen:



Vermehrtes Schnauben oder Niesen:

Nase an Objekten, am Vorderbein oder Boden reiben:

Ungewöhnliches, schweres Atmen:

Nasenausfluss:

Wenn ja, wie stark ist dieser Nasenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Nasenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Nasenausfluss? (Einfachauswahl)

O flüssig O schleimig

Tränende Augen/Augenausfluss:

0 10

Wenn ja, wie stark ist dieser Augenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Augenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Augenausfluss? (Einfachauswahl)

O flüssig O schleimig

Aktives Vermeiden von Licht, Wärme oder Wind:

0 10

Stolpern:

0 10

Panik:

0 10

Verweigern:

0 10

Wie ist die generelle Schwere der Symptomatik in der letzten Woche zu beurteilen?

1 10

Wie ist der Verlauf des Headshakings seit der Gabe des Saftes? (Einfachauswahl)

O gleichbleibend O verschlechtert sich O verbessert sich

Therapieren Sie das Headshaking Ihres Pferdes DERZEIT auch noch anders (außer mit dem Saft)? (Einfachauswahl) O Ja O Nein

Wenn ja**,** wie/womit? (Mehrfachauswahl möglich)

O Fliegennetz

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Decke

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Medikamente und Ergänzungsfuttermittel

Wenn ja, welche? (Freitexteintrag möglich)

……..

……..

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Sonstiges:

Wenn ja, was? (Freitexteintrag möglich)

……..

……..

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

Symptome des Pferdes in BEWEGUNG(Beobachtungszeit 3 Minuten im Schritt + 3 Minuten im Trab/Galopp):

Wo ist der Beobachtungsort? (Mehrfachauswahl möglich)

O innen *Bsp.: Box, Reithalle, Stallgasse, etc.*

O außen *Bsp.: Reitplatz, Paddock, Weide, etc.*

Bitte die Stärke **der jeweiligen beobachteten Symptome** auf den nachfolgenden Skalen durch einen kurzen, senkrechten Strich vermerken.

Bsp.: Hier ist ein Symptom mit eher schwerer Symptomatik eingezeichnet.

0 10

kein Symptom *schweres Symptom*

Vertikales und horizontales Headshaking (Auf- und Abbewegen und seitliches Bewegen des Kopfes):

0 10

Generelles Kopfschütteln:

0 10

Rotieren des Kopfes:

0 10

Flehmen:

0 10

Vermehrtes Schnauben oder Niesen:

0 10

Nase an Objekten, am Vorderbein oder Boden reiben:

0 10

Ungewöhnliches, schweres Atmen:

0 10

Nasenausfluss:

0 10

Wenn ja, wie stark ist dieser Nasenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Nasenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Nasenausfluss? (Einfachauswahl)

O flüssig O schleimig

Tränende Augen/Augenausfluss:

0 10

Wenn ja, wie stark ist dieser Augenausfluss? (Einfachauswahl)

O geringgradig O mittelgradig O hochgradig

Wenn ja, welche Farbe hat dieser Augenausfluss? (Einfachauswahl)

O durchsichtig O weißlich O gelblich

Wenn ja, welche Konsistenz hat dieser Augenausfluss? (Einfachauswahl)

O flüssig O schleimig

Aktives Vermeiden von Licht, Wärme oder Wind:

0 10

Stolpern:

0 10

Panik:

0 10

Verweigern:

0 10

Wie ist die generelle Schwere der Symptomatik in der letzten Woche zu beurteilen?

1 10

Wie ist der Verlauf des Headshakings seit der Gabe des Saftes? (Einfachauswahl)

O gleichbleibend O verschlechtert sich O verbessert sich

Therapieren Sie das Headshaking Ihres Pferdes DERZEIT auch noch anders (außer mit dem Saft)? (Einfachauswahl) O Ja O Nein

Wenn ja**,** wie/womit? (Mehrfachauswahl möglich)

O Fliegennetz

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Decke

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Medikamente und Ergänzungsfuttermittel

Wenn ja, welche? (Freitexteintrag möglich)

……..

……..

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe

O Sonstiges:

Wenn ja, was? (Freitexteintrag möglich)

……..

……..

Wenn ja: (Einfachauswahl) O mit Erfolg O ohne Erfolg O keine Angabe