CLAIMS

1. A kit comprising isolated DSM33646 and instructions for using the kit.

2. A method for producing an enriched palm-based animal feed, the method comprising:
   (a) providing a palm kernel meal;
   (b) contacting the palm kernel meal with a *Bacillus subtilis* strain to form a blended or fermented product; and
   (c) drying the blended or fermented product,

wherein the *Bacillus subtilis* strain is DSM 33646.

3. The method according to claim 2, wherein the palm kernel meal has an oil content of less than or equal to 3 wt%.

4. The method according to any one of claims 2 or 3, wherein the strain is selected for its ability to grow on solvent-extracted palm kernel meal.

5. The method according to any one of claims 2 to 4, wherein the method further comprises adding water to step (b), the ratio of palm kernel meal to water is about 1:1.5.

6. The method according to any one of claims 2 to 5, wherein the concentration of the *Bacillus subtilis* strain is between $6x10^6$ to $6x10^{10}$ cfu per gram of the palm kernel meal.

7. The method according to any one of claims 2 to 6, wherein contacting the palm kernel meal with a *Bacillus subtilis* strain comprises fermenting or blending the strain with the meal at a temperature of between 25°C to 40°C for at least between 4 to 72 hours.

8. The method according to any one of claims 2 to 7, wherein contacting the palm kernel meal with a *Bacillus subtilis* strain comprises fermenting or blending the strain with the meal at a temperature of between 25°C to 40°C for at least between 4 to 48 hours.

9. The method according to any one of claims 2 to 8, wherein contacting the palm kernel meal with a *Bacillus subtilis* strain comprises fermenting or blending the strain with the meal at a temperature of between 25°C to 40°C for at least between 4 to 24 hours.

10. The method according to claim 5, wherein the pH of the water is between 4.0 to 8.0.

11. The method according to any one of claims 2 to 10, wherein drying the fermented or blended product is carried out at a temperature of between 60°C to 80°C until the moisture content of the fermented or blended product is 10% or less.

12. The method according to any one of claims 2 to 11, wherein the fermented/blended product has hydrolyzing activity on non-starch polysaccharides.

13. The method according to claim 12, wherein the non-starch polysaccharides are glucomannan, galactomannan and/or linear mannan.

14. The method according to any one of claims 2 to 13, wherein the method is carried out in a continuous process.

15. The method according to any one of claims 2 to 13, wherein the method is carried out in a batch process.

16. The method according to any one of claim 2 to 15, wherein the blended or fermented product is further fermented or blended with a fresh amount of palm kernel meal at a ratio range between 1:1 to 1:10 prior to the drying step (c).

17. The method according to claim 16, wherein the blended or fermented product is further fermented or blended with water in the ratio 1:1.5.

18. An enriched palm-based animal feed comprising a *Bacillus subtilis* strain isolate DSM33646.

19. The enriched palm-based animal feed according to claim 18, wherein the animal feed is further blended or fermented with the addition of water and a fresh amount of palm kernel meal.