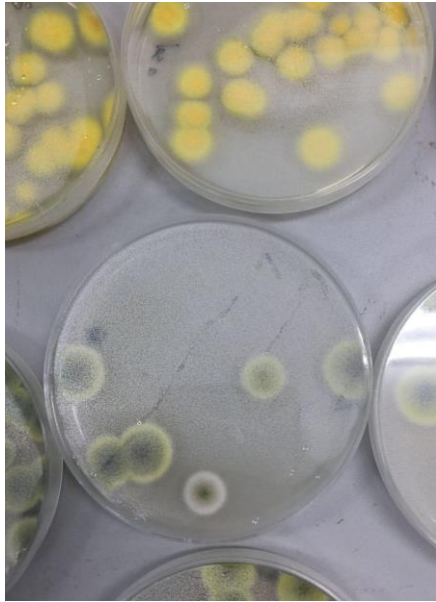
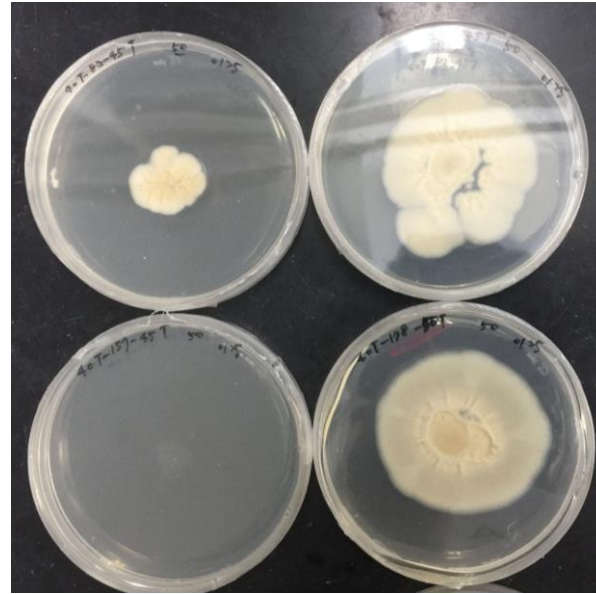


台糖高效植酸酶

TSC High Efficiency Phytase



(A)

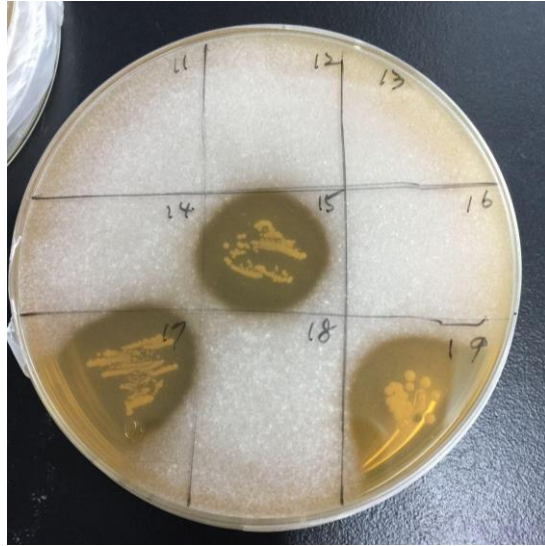


(B)

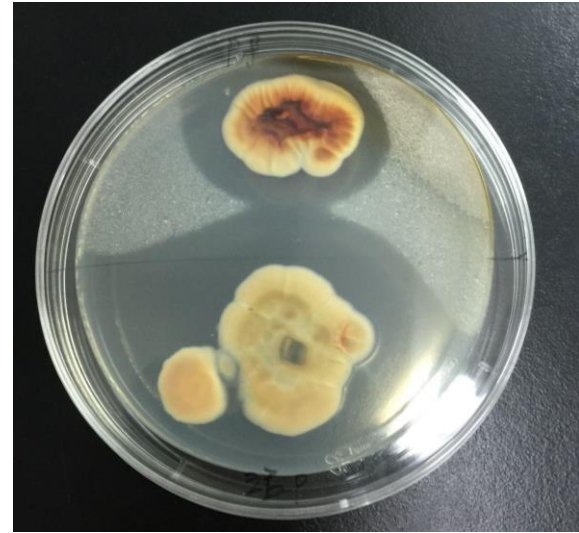
圖一、突變嗜極環境微生物。(A) 常壓室溫等離子體(ARTP)突變；(B)熱馴化。為增加篩選到有植酸酶活性菌株的變異性，分別以ARTP突變與高溫熱馴化的方式，期增加菌株變異性並提升植酸酶效能，取其基因重組放大培養。

Figure 1. Mutant extremophile environmental microorganisms. (A) Atmospheric and room temperature plasma (ARTP) mutation; (B) Thermal acclimation.

ARTP mutation and high-temperature heat acclimation were used to increase the variability of strains and improve the phytase production by heterologous recombination.



(A)

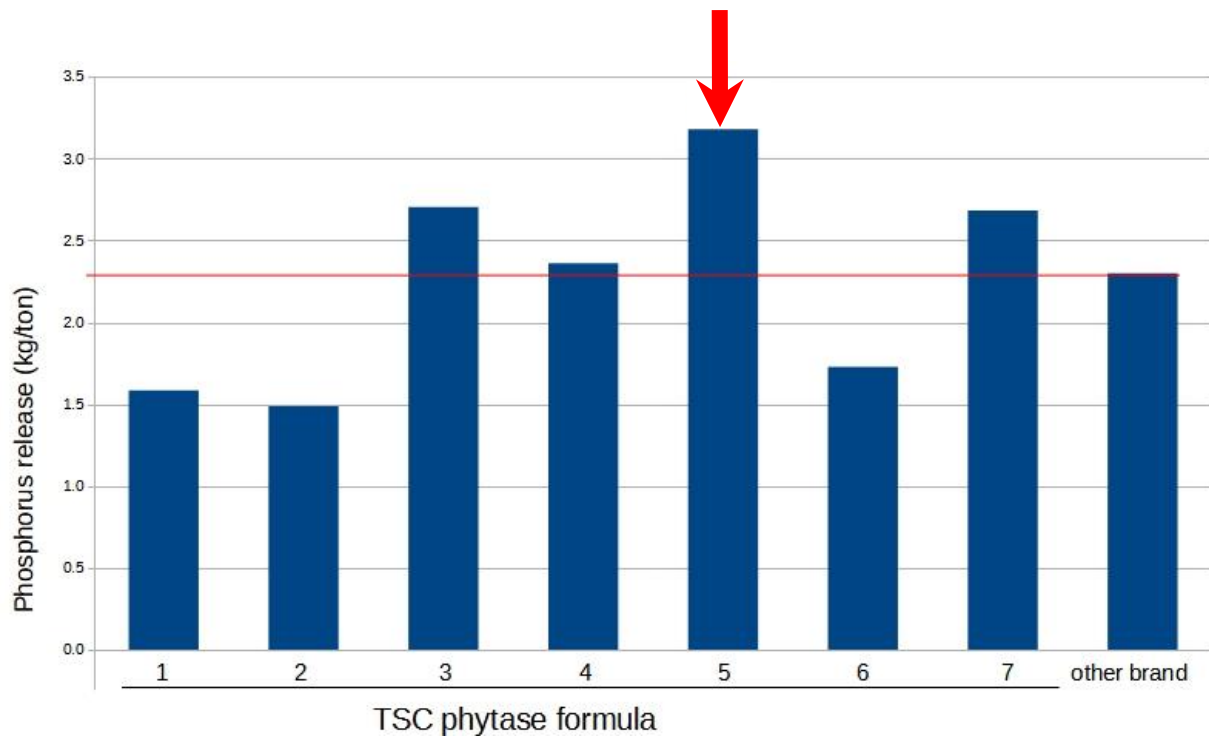


(B)

圖二、以平板分析法篩選有植酸酶活性之菌株。
以植酸鈣平板分析法確認篩選菌株之植酸酶活性，透明處即為有植酸酶活性之菌株，取其
基因重組放大培養。

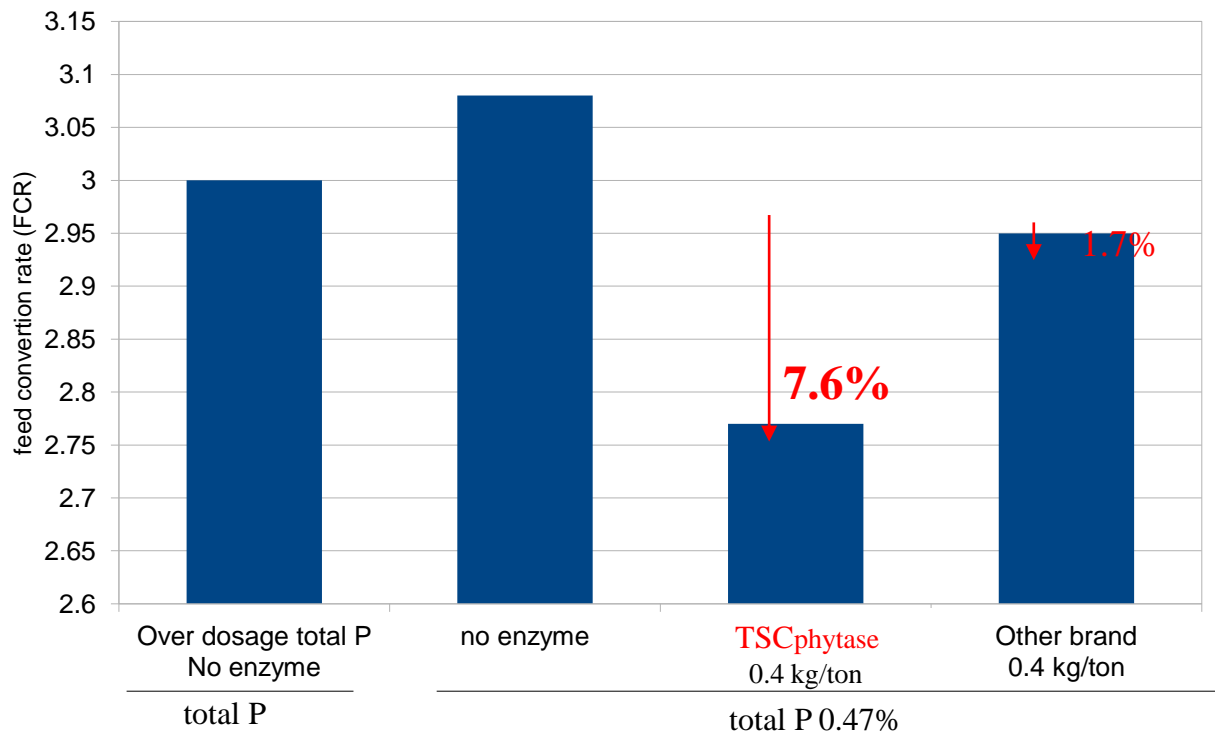
Figure 2. Screening with phytase plate assay

The phytase activity was confirmed by the calcium phytate plate analysis method, the strain with clear zone means have phytase activity. And then improve the phytase production by heterologous recombination.



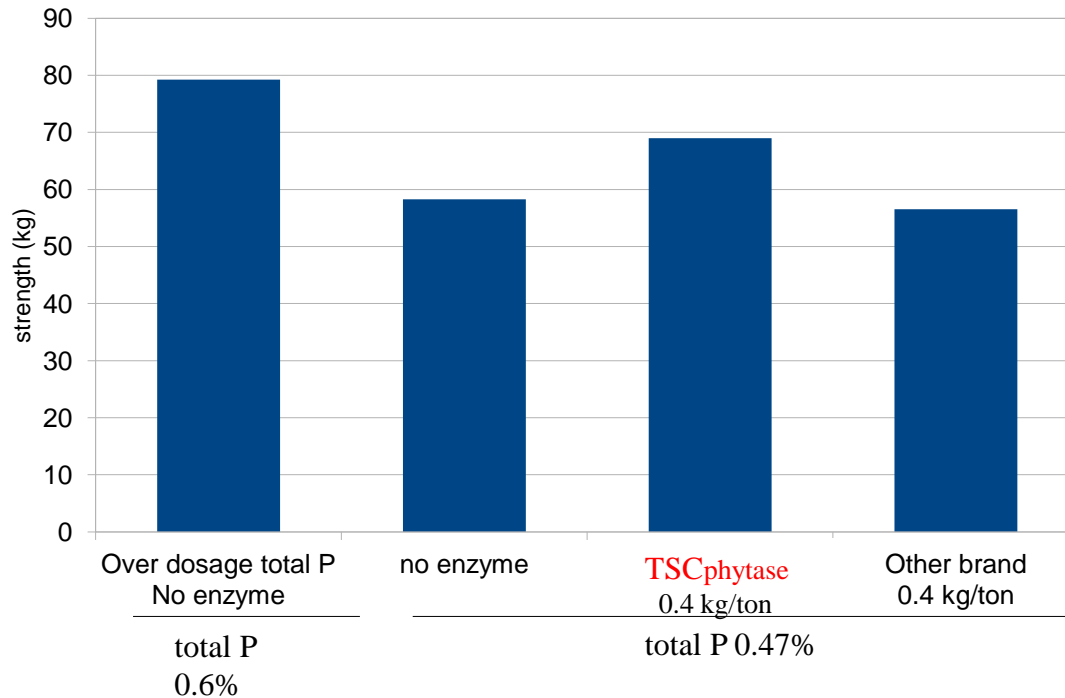
圖三、分析不同植酸酶配方可釋放飼料中植酸之磷含量。
植酸酶配方組合No5.可使每噸飼料釋放3公斤以上磷，是所有組合含競品中最高者。

Figure 3. The phosphorus released amount by different phytase formulations.
Phytase formula No5. can release more than 3 kg of phosphorus per ton of feed, which is the highest among all competing products.



圖四、植酸酶飼養試驗之飼料換肉率(FCR)。
 降低飼料總磷至0.47%，添加TSC植酸酶者之FCR較正常磷無添加植酸酶者降低7.6%。
 (試驗起始體重70公斤，120公斤出欄)

Figure 4. Feed conversion rate of phytase feeding trials.
 Reduce the total phosphorus to 0.47%, the FCR of who added TSC phytase was 7.6% lower than 0.6% total phosphorus (over dosage).
 (The initial weight of the test is 70 kg, and finish weight is over 120 kg)



圖五、植酸酶餵養試驗120 kg以上肉豬之骨強度分析。
降低飼料總磷至0.47%，添加TSC植酸酶者豬隻腿部型態正常，且骨強度較競品者優。

Figure 5. Bone strength analysis of meat pigs (120 kg) in phytase feeding trials.
Reduce the total phosphorus in the feed to 0.47%, and the pigs with TSC phytase have normal leg shape, and the bone strength is better than competitors brand.