

**Table 1**

Single factor	Two factors	Orthogonal experiment
R1:RBO0.5%	L1: R3+M2	Z1: R1+M1+S1
R2: RB0 1.5%	L2: R3+S3	Z2: R2+M2+S2
R3: RBO 2.5%	L3: M2+S3	Z3: R3+M2+S3
M1: Me JA 100μmol/L		Z4: R1+M2+S3
M2: Me JA 200μmol/L		Z5: R2+M3+S1
M3: Me JA 500μmol/L		Z6: R3+M1+S2
S1: SA 100μmol/L		Z7: R1+M3+S2
S2: SA 500μmol/L		Z8: R2+M1+S3
S3: SA 1000μmol/L		Z9: R3+M2+S1

**Table 2**

Gene		Primer sequence (5'-3')
GAPDH	S	CCTCGTCCCGTAGACAAAATG
	A	TGAGGTCAATGAAGGGGTCGT
BDNF	S	CTCCGCCATGCAATTTCCACT
	A	GCCTTCATGCAACCGAAGTA
NGF	S	CGACTCCAAACACTGGA ACTCA
	A	GCCTGCTTCTCATCTGTTGTCA
TNF- $\alpha$	S	GCCTCTTCTCAT TCCTGCTTGT
	A	GGCCATTGGGGA ACT TCTCAT
IL-1 $\beta$	S	TGGAGAGTGTGGATCCCAAG AAT
	A	TGTCCTGACCAC TGT TGTTTCCCA
Nrf2	S	TACTCCCAGGTTGCCCACAT
	A	TGAACTTTCAGCGTGGCTGG
HO-1	S	CAGAAGAGGCTAAGACCGCC
	A	CTCTGACGAAGTGACGCCAT
NQO-1	S	GAAACCGTCTGGGAGGAGAC
	A	GAATGGACTTGCCCAGGTGA
SOD	S	GCGGTGAACCAGTTGTGTTG
	A	CACATTGCCCAGGTCTCCAA
NF-kB	S	CTGAACAAAATGCCCCACGG
	A	TTCCTCCTTTGGGACGATGC
TLR-4	S	GTGCCAGTCAGGGTCATTCA
	A	ACTCCCCAGCCCTTTATGGA

Supplementary Table 2 Primer sequences used in the study.

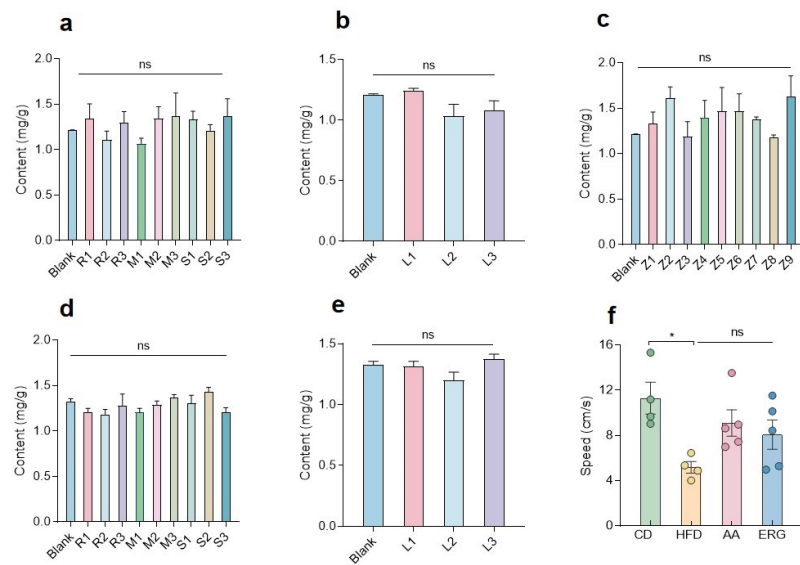
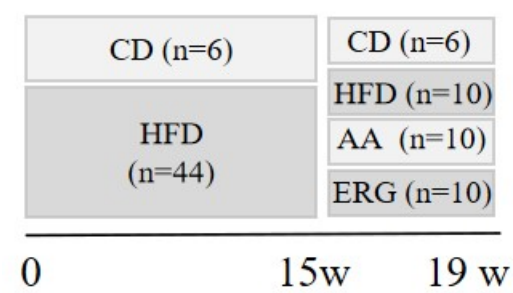


Fig.

Supplementary Fig.1 Accumulation of ergosterol in the fruiting body of AA. (a) Effect of ERG content induced by single factor in greenhouse. (b) Effect of ERG content induced by two factors in greenhouse. (c) Effect of ERG content is induced by three factors in greenhouse. (d) Effect of ERG content induced by single factor in field. (e) Effect of ERG content induced by two factors in field. Data are represented as the mean  $\pm$  SEM, n=4-5. ns: not significant, \*p<0.05.



Supplementary Fig.2 Diagram of experimental design.