



SPRAY DRIED PLASMA (SDP) MAINTAINS OR IMPROVES CAT & DOG KIBBLE DURABILITY AND PALATABILITY WHILE ALLOWING FOR HIGHER MEAT INCLUSION IN FORMULAS

Increasing fresh meat inclusion in dry kibble can be challenging. When extruding, variation of moisture and fat of the incoming raw meat ingredient adds to the complexity of producing quality kibbles. As fresh meat feed rates are increased, the ability to extrude quality kibble may be impacted depending on the matrix. Spray dried plasma (SDP) has historically been used in wet pet foods to increase water holding, binding, and fat emulsification properties to maintain quality products. APC and testing partners, Wenger, conducted studies to see if meat inclusion levels could be increased in extruded grain and grain free kibble formulas by using SDP for both dog and cat.

Several initial tests were completed to prove concept. The dry blend feed rate was established and adjustments in fresh meat and SDP feed rates to the dry blend feed rate were evaluated initially with a twin screw extruder. Limits were determined by extruder inability to continue production of kibble. Feed rate ranges from 2.5 to 20% SDP and 25-50% fresh meat were evaluated. With initial concept testing, SDP feed rates from 2.5 to 20% allowed for increased fresh meat feed rates to 45-50% depending on the feed rate of SDP and formulation type.

Follow up evaluation tests were completed formulating SDP into the dry blend with least cost formulation. These formulas were evaluated on both single and twin screw extruders. Target of 2.5 and 5.0% SDP in the final kibble were formulated into the dry blend in both grain free and grain formulas. Ranges of meat feed rates from 25 to 45% were again evaluated.

Overall, addition of plasma in the dry blend formula allows formulators to increase meat levels while improving kibble durability and palatability, all while increasing meat inclusion levels.

**PLASMA INCLUDED IN THE FORMULATION
ALLOWS FOR HIGHER MEAT INCLUSION IN
DIETS.**



BOTTOM LINE

**KIBBLE
DURABILITY**



PALATABILITY



**MEAT
INCLUSION**





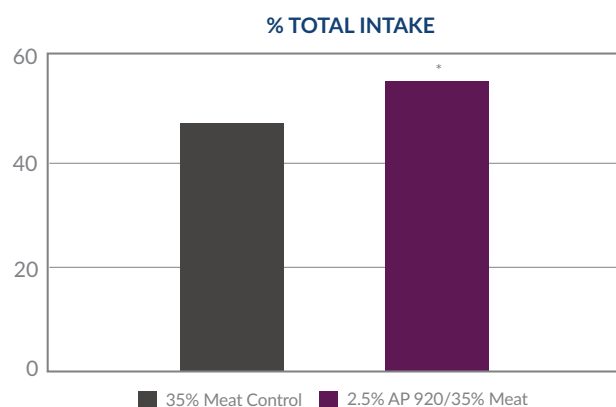
REVIEWING KEY RESULTS

INCLUSION RATES & DURABILITY

SINGLE SCREW EXTRUSION WITH GRAIN FREE FORMULA

TARGET FRESH MEAT IN KIBBLE, %	MEAT FEED RATE, %	PLASMA IN FINAL KIBBLE, %	PLASMA IN DRY BLEND, %	MOIST, %	COOK, %	DURABILITY
18	25	0	0	7.2	96.2	96.15
23	35	0	0	8.0	89.1	92.46
23	35	2.5	3.75	7.0	98.6	96.16
23	35	5	7.5	7.37	97.0	95.68

35% MEAT CONTROL VS. 2.5% AP 920/35% MEAT



*=P<0.05



CONCLUSIONS

- Plasma included in the formulation allows for higher meat inclusion in diets.
- Cook and Durability are maintained or improved.
- Palatability was improved in both cat and dog kibbles.

For more detailed information,
contact one of our pet experts.



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