NOSB NATIONAL LIST
FILE CHECKLIST

LIVESTOCK

MATERIAL NAME: **#3 Colostrum/Whey Antibodies**

✓ **NOSB Database Form**

✓ **References**

____ **MSDS (or equivalent)**

✓ **TAP Reviews from: Lynn Brown**
(Additional TAP Reviews expected from: Richard Krengel)

NOSB/NATIONAL LIST
COMMENT FORM
LIVESTOCK

Material Name: #3 Colostrum/Whey Antibodies

Please use this page to write down comments, questions, and your anticipated vote(s).

COMMENTS/QUESTIONS:

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1. In my opinion, this material is:
_____ Synthetic _____ Non-synthetic.

2. This material should be placed on the proposed National List as:
_____Prohibited Natural _____Allowed Synthetic.

TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: Sept 5, 1995

Name of Material: Colostrum whey antibodies

Reviewer Name: Lynn Brown

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Synthetic

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

__X__ Synthetic Allowed ____ Prohibited Natural

or, ____ Non-synthetic (This material does not belong on National List)

Are there any use restrictions or limitations that should be placed on this material on the National List?

NO

Please comment on the accuracy of the information in the file:

the information is accurate

Any additional comments? (attachments welcomed)

Do you have a commercial interest in this material? ____ Yes; __X__ No

Signature Lynn R Brown **Date** 8/31/95

Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

(1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

None

(2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

None

(3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

None

(4) the effect of the substance on human health;

None

(5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

None

(6) the alternatives to using the substance in terms of practices or other available materials; and

In cases where colostrum from the dam is not available this is a good alternative because it helps prevent disease. In many cases later treatment of disease is more expensive and less effective

(7) its compatibility with a system of sustainable agriculture.

It is compatible with sustainable agriculture.

Identification

Common Name **Colostrum whey antibodies** **Chemical Name**

Other Names

Code #: CAS **Code #: Other**

N. L. Category Synthetic Allowed **MSDS** no

Chemistry

Family

Composition contains immunoglobulins.

Properties Colostrum coagulates at 80 to 85 degrees centigrade and cannot thereofore be boiled. The antibodies can protect young animals from a range of bacteria and viruses.

How Made

Use/Action

Type of Use Livestock

Use(s) Health care. Provides newborn animal (cows, swine, lambs) with immunoglobulins which are necessary to build a healthy immune system and resist infection.

Action Immunoglobulins become active in the blood serum after absorption, and they have a local protective effect within the small intestine as long as they are received within a few hours of birth.

Combinations

Status

OFPA

N. L. Restriction Category 1

EPA, FDA, etc Either biologics or new animal drugs depending on their intended used, and must either be licensed by USDA or approved by FDA.

Safety Guidelines **Directions**

Registration **State Differences**

Historical status

Internationl status

OFPA Criteria

2119(m)1: chemical interactions

2119(m)2: toxicity & persistence

Hookworm larvae have been found in sow colostrum, which are probable absent in the extracted antibodies.

2119(m)3: manufacture & disposal consequences

2119(m)4: effect on human health

2119(m)5: agroecosystem biology

2119(m)6: alternatives to substance

Vaccination; treatment of infections once they develop rather than as preventative.

2119(m)7: Is it compatible?

References

Black's Veterinary Dictionary, 16th edition, 1988. Geoffrey P. West ed.; Barnes and Noble Books, Totoway, NJ

See also attached.

COLOSTRUM AND WHEY REFERENCES

AU: Sherman,-D.M.; Arendt,-T.D.; Gay,-J.M.; Maefsky,-V.A.
TI: Comparing the effects of four colostral preparations on serum Ig levels of newborn kids.
SO: Vet-Med. Lenexa, Kan. : Veterinary Medicine Publishing Company. Aug 1990. v. 85 (8) p. 908-913.
CN: DNAL 41.8-M69

AU: Hutchens,-T.W.; Magnuson,-J.S.; Yip,-T.T.
TI: Rapid purification of porcine colostral whey lactoferrin by affinity chromatography on single-stranded DNA-agarose. Characterization, amino acid composition and N-terminal amino acid sequence.
SO: Biochim-Biophys-Acta-Int-J-Biochem-Biophys. Amsterdam : Elsevier Science Publishers. Dec 21, 1989. v. 999 (3) p. 323-329.
CN: DNAL 381-B522
AB: We have determined that the major iron-binding and DNA-binding protein in porcine colostral whey is lactoferrin. This lactoferrin was purified to homogeneity in one chromatographic step using immobilized single-stranded DNA-agarose. Affinity elution analyses of the purified lactoferrin on immobilized DNA revealed that the affinity of this protein for DNA was independent of bound iron. Porcine lactoferrin was recognized by antibodies directed against human lactoferrin and bovine lactoferrin. These results demonstrate the effectiveness of mmobilized DNA as a rapid and simple lactoferrin purification procedure and demonstrate the presence of a lactoferrin in porcine colostral whey with a high degree of sequence homology to human lactoferrin.

AU: Harp,-J.A.; Woodmansee,-D.B.; Moon,-H.W.
TI: Effects of colostral antibody on susceptibility of calves to Cryptosporidium parvum infection.
SO: Am-J-Vet-Res. Schaumburg, Ill. : American Veterinary Medical Association. Dec 1989. v. 50 (12) p. 2117-2119.
CN: DNAL 41.8-AM3A
AB: Effects of colostral antibody on susceptibility of calves to Cryptosporidium parvum infection were examined. Six calves were fed pooled colostrum that contained C parvum antibody, 6 times daily for 7 days and then milk replacer for 7 days. Bovine colostrum containing specific antibody to C parvum, at ELISA titers up to 10,240, was not effective in protecting calves against challenge exposure to C parvum.

AU: Jimenez,-D.A.; Chandler,-J.E.; Adkinson,-R.W.; Barta,-O.; Ingraham,-R.H.; Saxton,-A.
TI: Effect of serum sources and colostral whey on bovine semen quality and spermatozoa immunoglobulin G immunofluorescence.
SO: J-Dairy-Sci. Champaign, Ill. : American Dairy Science Association. Oct 1986. v. 69 (10) p. 2704-2710.
CN: DNAL 44.8-J822

AU: Cruywagen,-C.W.; Horn,-J.G.
TI: Pre-weaning growth and feed intake of dairy calves receiving different combinations of soybean flour, whey powder and colostrum.
SO: S-Afr-J-Anim-Sci-S-Afr-Tydskr-Veekunde. Pretoria : South African Society of Animal Production. Mar 1985. v. 15 (1) p. 11-14.
CN: DNAL SF1.S6

AU: Nielsen,-K.; Stiller,-J.; Sowa,-B.
TI: Immunoglobulin G1 Fc in colostral whey.
SO: Can-J-Comp-Med-Revue-Can-Med-Comp. Ottawa : Canadian Veterinary Medical Association. Oct 1984. v. 48 (4) p. 410-413. ill.
CN: DNAL 41.8-C162

AU: Stepanek,-J.; Mensik,-J.; Franz,-J.; Krejci,-J.
TI: Preparation of hyperimmune cow colostrum whey and its use in the protection of piglets against transmissible gastroenteritis [Immunization, antibody production, virus].
SO: Acta-Vet. Prague : State Pedagogical Publishing House. 1982. v. 51 (1/4) p. 99-108.
CN: DNAL SF604.B7